

ARMY LOGISTICIAN

ALGG

November-December 1986



NAMSA Supports NATO



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COVER—NATO's Maintenance and Supply Agency (NAMSA) provides supply, maintenance, and technical services for a variety of equipment and weapon systems used by NATO nations. The technicians shown on the cover check a TOW missile component following its repair. How the Agency fulfills its NATO mission is explained in the story beginning on page 2.

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LOG 21 COMING

The Army's long-range logistics plan, LOG 21, is scheduled for publication in January. It will provide planning guidance for logistics program and materiel developers for the 1990's and the first quarter of the 21st century.

**NATO LOGISTICS
DOCTRINE EYED**

In February, the NATO Land Forces Logistics Working Party will begin work on doctrine covering joint and combined logistics operations, with publication possible by 1988. Dutch members of the working party are currently consolidating proposed outlines from each NATO country for the conceptual publication. Personnel from the Office of the Deputy Chief of Staff for Logistics, with input from the other services, prepared the U.S. proposal. A related article on the NATO Maintenance and Supply Agency begins on page 2.

CALS PLANNED

Under a program called computer-aided logistics support (CALS), the Department of Defense has directed each armed service and the Defense Logistics Agency to develop an integrated network for creating, storing, and retrieving logistics technical information for weapon systems. The network, which will be created by using new and existing computer and communications technologies, will extend from contractors to field users. The Army has created a CALS project office at Fort Monmouth, New Jersey, to coordinate development of the Army's CALS capabilities.

**TRANSPORTATION
PLAN PREPARED**

By November, the Office of the Chief of Transportation, Fort Eustis, Virginia, plans to publish a transportation master plan. As a roadmap to the future of total Army transportation, the plan describes issues in the areas of transportation training, equipment, force structure, doctrine, organization, and personnel.

**USAREUR EXCESS
REDISTRIBUTED**

The first of two European redistribution facilities is now in operation at Boeblingen, West Germany. The facility, established and managed by the New Cumberland Army Depot, will process, store, and redistribute excess materiel from U.S. Army, Europe (USAREUR), units. The facility is expected to reduce procurement and transportation costs and improve storage capabilities and readiness in USAREUR.

(Continued on page 44)

NATO Maintenance and

by Major General Homer D. Smith, USA (Ret.)

As the only international logistics support agency within for weapon and equipment systems held in common by

Tucked away in the smallest nation of the North Atlantic Alliance is an organization whose services are used by all member nations with the exception of Iceland. The NATO Maintenance and Supply Organization (NAMSO), the largest logistics organization of NATO, is headquartered in the City of Luxembourg. Conceived through an initiative of the United States, NAMSO was created by the North Atlantic Council on 2 April 1958. The Organization consists of a Board of Directors and an executive arm, the NATO Maintenance and Supply Agency (NAMSA).

Although established in a political, military, and economic environment substantially different from that of today, the mission of NAMSA, laid down in its 1958 charter, has remained virtually unchanged over the nearly 3 decades that have elapsed and is still valid in its essentials today. Whenever two or more nations have the same weapon systems in their national inventories, they can use the logistics support services of NAMSA. The objective is to maximize effective logistics support to the military forces of the Alliance while minimizing the costs to nations, both individually and collectively.

The mission that NAMSA is charged with in both peace and war includes the following—

- Consolidation of repair part requirements of the several nations, centralized stockage of items peculiar to selected weapon systems, procurement in support of supply and maintenance activities, mutual emergency support for priority requisitions, and redistribution of surplus and excess supplies among member nations.
- Maintenance and repair of selected weapon systems and equipment by contracted maintenance and in-house facilities.
- Codification services, configuration management, calibration, transportation of materiel, and other technical services.

To effectively perform this mission for the forces of the 15 member nations, NAMSA relies on standardized procedures that have been coordinated with the 15 defense establishments.

The workforce of the Agency includes nearly twelve hundred civilians recruited from member na-

tions. The Agency is headed by a general manager, currently General Marc-A. Cauchie of the French Army. He is assisted by four directorates and reports to the Board of Directors of NAMSO, who represent capitals of the participating nations (as shown in the chart on the right). The Board reports directly to the NATO Council.

In addition to the headquarters element of the Agency, NAMSA operates a depot in the Grand-Duchy of Luxembourg, known as the Northern Depot. A second depot, the Southern Depot, is located at Tarranto, Italy. Logistics management of the NATO Hawk missile system is performed by an office located near Paris, France, while maintenance training for the Nike missile system is operated by the Agency at Fort Bliss, Texas. Due to the phaseout of Nike in Europe, the Fort Bliss activity will be closed by the end of this year.

The chart on page 5 shows the various weapon, radar, communications, and other systems currently being supported by NAMSA together with the nations for which the work is done.

As a NATO agency, NAMSA operates on a no profit-no loss basis using commercial-type cost accounting procedures that provide clear visibility of operating costs to member nations. By identifying the support costs of each individual weapon or equipment system, these accounting procedures allow NAMSA to measure the cost-effectiveness of each supported system.

The Agency's role in times of tension and war was not overlooked in the original charter. By that charter, NAMSA is included in the NATO Alert System and actively participates in the development of selected alert measures to ensure its preparation and responsiveness during times of crisis. In addition, within the Agency there is a nucleus of mobilization-oriented and -trained personnel. This responsive element, together with a dedicated communications system and an Emergency Control Center, ensures that one central focal point within NAMSA will be available for crisis management.

The strength of the Agency lies in its role in consolidating member nations' requirements for supply, maintenance, and engineering support and

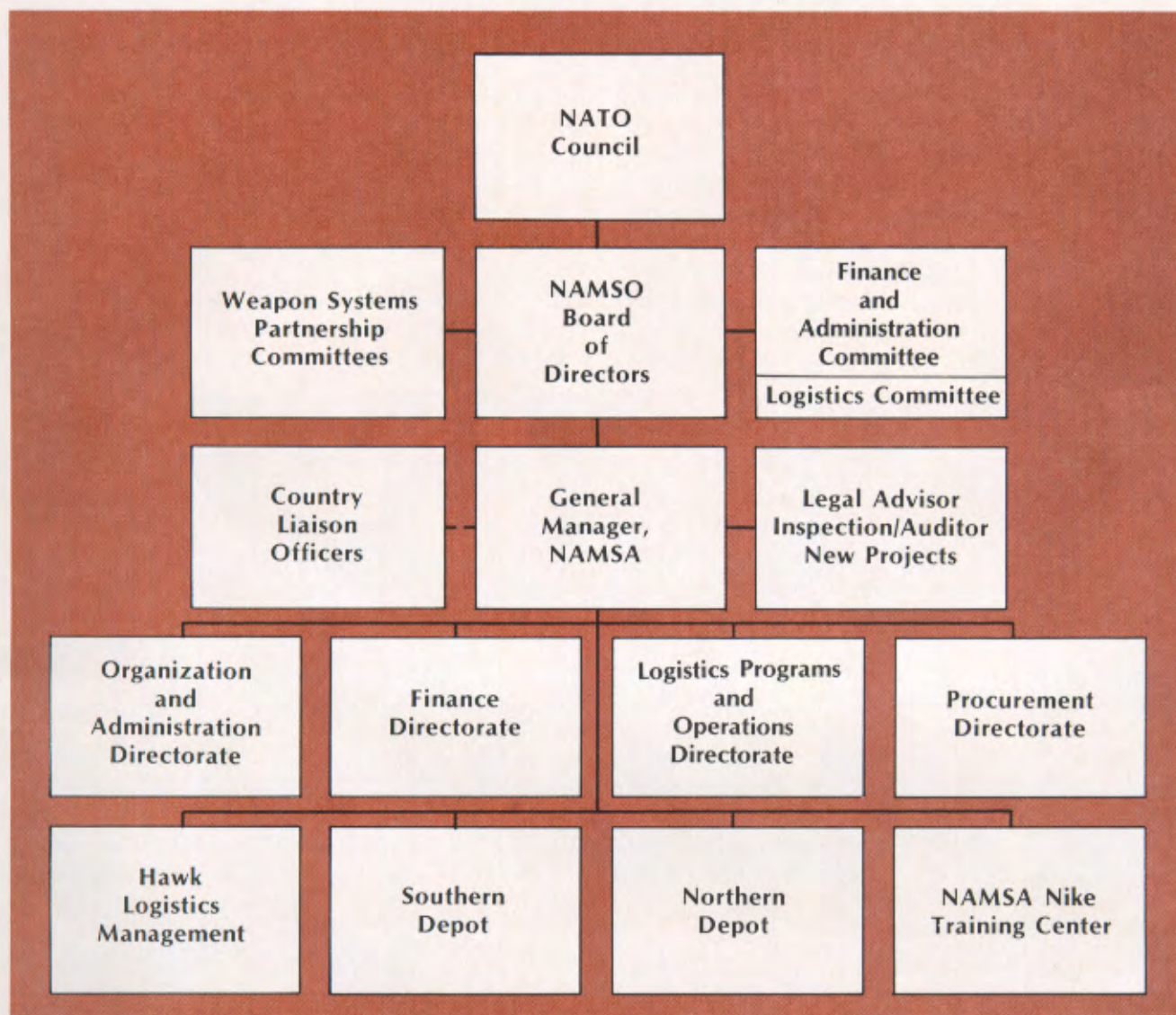
Supply Agency (NAMSA)

NATO, NAMSA provides logistics support services NATO nations.

thereby forming the basis for centralized procurement of materiel and services. Competitive bidding is exercised from all known potential sources in NATO-Europe, Canada, and the United States. In-house depot-level repair is performed for LANCE and TOW and will soon include electronics for the multiple launch rocket system (MLRS). Future

systems, such as the next-generation European anti-tank missile Trigat, the advanced medium-range air-to-air missile (AMRAAM), its short-range version (ASRAAM), and Maverick, are under study as candidates for prospective support by NAMSA when fielded in NATO-Europe.

The Agency actively attempts to expand its capa-



□ Structure of the NATO Maintenance and Supply Organization.

bilities to be able to respond to any customer request for support. When several nations plan to collaborate in the fielding of a given system, they are urged to request advice from NAMSA as early as possible since it may take several years before a common logistics support concept can be agreed upon.

The present trend toward more cooperative U.S.-European weapon developments, highly refined and mandatorily trimmed military budgets, and maximum interoperability and standardization throughout the forces of NATO can only enhance the Agency's role in providing standardized, cost-effective, and responsive logistics support for Alliance weapon systems.

Since the inception of the Agency, the United States has been its major supplier, with over 50 percent of the total value of contracts let to U.S. military or commercial sources. This is not surprising since most NAMSA-supported systems are of U.S. origin. In addition, the United States provided the first two general managers of the Agency, both of whom were general officers. A management review initiated by the United States and composed of international experts devised the basic structure of the Agency in 1963. It remains much the same today with its present operative concepts of weapon systems management and commercial cost accounting. Further, the supply and procurement procedures used by the Agency are essentially based on those of the U.S. Armed Forces.

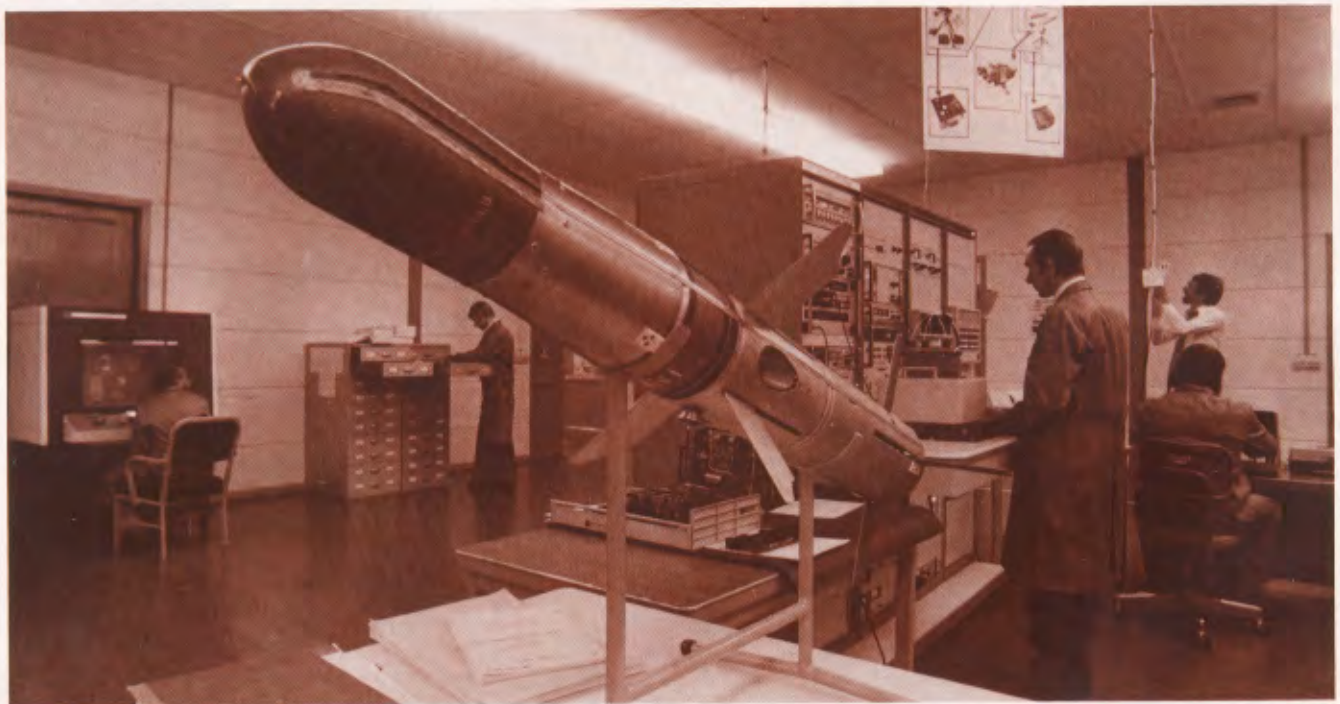
Although it performs some important functions

in management and supply, the United States has never used many of the Agency's services. This loss of opportunity is not to be attributed to the much larger scope of logistics support operations of U.S. Forces but to legal considerations.

The NATO Mutual Support Act of 1979 allowed the United States to expand its role as a customer of the Agency. This act, Public Law 96-323 (and amplified by DODD 2010.9, DODI 2010.10, AR 12-16, and AFR 400-9), provided the legal foundation for U.S. Forces in Europe to use the Agency as a logistics support resource. In February 1982, U.S. European Command (USEUCOM) signed an umbrella agreement with NAMSA establishing the terms for mutual logistics support and supplies and services. In actuality this agreement is implemented through separate arrangements between the component commands and NAMSA on an individual basis.

Since 1982 the role of the United States as a customer has expanded as a result of increased interest in the improved readiness that can be achieved through shortened downtime and cost-effectiveness, both of which result from a reduced pipeline length. Consequently, the United States went from no significant direct use of NAMSA in 1983 to involvement in a number of support relationships with the Agency today. Each type of support falls under a separate implementing arrangement of the USEUCOM-NAMSA umbrella agreement.

In June 1985, the United States joined with the United Kingdom, France, Germany, and Italy in a



□ NAMSA tests TOW subassemblies.

	Missiles and Rockets					Radar			Communications		Artillery		Other					
	Nike	Hawk	Lance	Sidewinder	TOW	MLRS	Patriot	NADGE/NAEGIS	AWACS	Drone Class 89	Forward Scatter	Satcom	NICS	Crypto	FH-70	SP-70	F-104 Aircraft	Torpedoes
BELGIUM	■	■	■				■	■		■	■	■						
CANADA				■				■		■	■	■						
DENMARK	■		■	■			■	■		■	■	■						
FRANCE	■		■		■		■	■	■				■					■
GERMANY	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
GREECE	■	■	■				■	■		■	■	■					■	
ITALY	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■
LUXEMBOURG				■				■				■						
NETHERLANDS	■	■	■	■		■	■	■	■	■	■	■	■					■
NORWAY	■		■	■			■	■		■	■	■	■					■
PORTUGAL			■	■				■		■	■	■						■
SPAIN			■															■
TURKEY	■		■	■			■	■		■	■	■					■	■
UNITED KINGDOM		■			■				■	■	■	■		■	■			■
UNITED STATES			■		■	■				■	■							
SHAPE							■	■		■	■	■						

□ Systems and nations supported by NAMSA.

weapon system partnership for coordinated logistics support of the MLRS. Support will include depot-level maintenance of selected electronics assemblies, selected technical and engineering support, direct exchange of electronics assemblies and subassemblies, and mutual emergency support for high-priority requisitions.

The United States, Germany, and the Netherlands formed the Patriot weapon system partnership in August 1985. The United States plans to participate in a common support program for depot-level main-

tenance of Patriot-peculiar equipment. A project planning office has been established under the direction of a U.S. national.

The Air Force Logistics Command (AFLC) has arranged to use the contracting services of NAMSA to obtain depot-level maintenance support for the AIM 9-L missile. As more nations join the program, the AFLC expects considerable benefits in terms of savings and the availability of serviceable missiles through this in-theater repair capability.

NAMSA currently provides six qualified techni-



□ NAMSAs performs post-repair checks on TOW.

cians to repair and calibrate U.S. Army test, measurement, and diagnostic equipment (TMDE). The TMDE is preselected and workloaded into the Agency program by the 517th Maintenance Battalion in Zweibrücken, Germany.

U.S. Air Forces in Europe (USAFE) have concluded an agreement with NAMSAs for storing and maintaining USAFE War Reserve Materiel (WRM). Under this agreement NAMSAs will provide day-to-day storage and maintenance management of this WRM, which consists of aircraft support equipment, vehicles, personnel support assets, and aircraft consumables. The materiel will be positioned at sites from which U.S. reinforcing units can draw it during a crisis. By using NAMSAs services, USAFE can avoid adding more blue-suit personnel in the theater during peacetime.

NAMSAs has also performed work on the TOW and LANCE for the United States.

As long as our Allies continue to procure U.S.-produced systems and support them through NAMSAs, the United States will remain a major supplier in the future. The increased use of the Agency since the implementation of Public Law 96-323 certainly points to greater use of the capabilities of this multinationally staffed logistics support Agency.

The U.S. role as a source of management expertise will be particularly important over the next few years. This stems from a recently completed review of the operations and future of the Agency that was inspired, initiated, and chaired by the United States. The review generated major recommendations relative to the role of the Agency within the Alliance, expansion of its mission, and enhancement of its organization and management processes.

One recommendation concerned acquisition logis-

tics or integrated logistics support for jointly developed systems. The review identified the need for greater attention to support considerations in the early phases of the development of joint systems. NAMSAs was found to be the only "multinational, multifunctional logistics organization in NATO which, at least in embryo, has the total range of logistics support capabilities in being or in potential to support virtually any equipment and weapons system acquisition program." In this light, the review recommended that NAMSAs assume the role of acquisition logistics support agency for the Alliance. This proposal is currently under consideration at the appropriate levels within NATO.

Other advanced management proposals, such as the introduction of a revolving fund in the Agency's operations, were included in the recommendations stemming from the review. This year the Board of Directors of NAMSAs and the North Atlantic Council, to whom they report, will assess the recommendations. It is hoped that the final product will strengthen the abilities of the Agency and increase its effectiveness in providing improved logistics support throughout the Alliance.

ALOG

Major General Homer D. Smith, USA (Ret.), became the first director of logistics of the NATO International Staff in Brussels shortly after his retirement from active duty in 1979.

General Smith gratefully acknowledges the assistance of Klaus Broecker, NAMSAs Assistant for New Projects, and Gary Appleton, the U.S. Representative to NAMSAs, in writing this article.

Training for General Support

by Major Glenn O. Cassidy

“Not only must our logistics system be able to transport, supply, and maintain rapidly, [but it must] operate well forward and be flexible and responsive to our tactical commanders,” wrote General John A. Wickham, Jr., in a message to major commanders last year, describing the mission of our logistics force. Remembering his words, let’s examine a great challenge facing the Army today—“fixing” the Capstone-aligned general support (GS) logistics force.

What makes up the GS force and what is wrong with it? First, some of the Active GS force is forward-deployed in Europe and other oversea locations, but the bulk of it is based in the continental United States, mostly in the Reserve components. Second, what needs “fixing” is the training of the GS force to bring it up to wartime proficiency.

A comprehensive training strategy is needed. Simply providing people and modernizing equipment is not enough. Personnel strength is not a problem, for most units, including the Reserve components, are nearly 100 percent of fill. Many are actually overstrength. Equipment is also a success story. Force modernization and programs like the dedicated procurement program are providing units with millions of dollars worth of new, modern equipment annually.

The problem is *training*, or, rather, the *lack of it*. Sure, Reserve component units train weekends at installations and perform annual training at depots, but that’s not enough. Unfortunately, most training missions performed by these units are on a production line or at the direct support or organizational level. Performing backup direct or organizational maintenance or technical supply operations does not equate to a unit’s being forward-deployed in a GS role in Central Europe or other theater of operations.

Training at Depot System Command (DESCOM) installations provides some GS-level training. DESCOM provides over 260,000 workdays of technical and logistics training to Reserve component units annually. Depot training provides some hands-on familiarization with modern Army equipment; but it doesn’t simulate GS-unit activities in the field or

provide an environment where all required wartime tasks and skills can be fully exercised and properly evaluated. Depots and installations are primarily operated by Department of the Army civilians or contractors and are not workloaded to absorb the heavy volume of GS units wanting to train.

Some help is on the way, however. Programs like the Reserve component transition to modernization will soon provide special tools, test equipment, and training devices to some GS units and establish a system of regional maintenance training sites across the country. This will provide selected Active and Reserve component units with an opportunity to practice maintaining the latest wartime equipment and help increase the technical competence of maintenance soldiers. But what about the training of the general supply units; the collection, classification, and salvage units; and the repair parts supply companies? How and where will they train?

What we need is that comprehensive strategy, mentioned earlier, to provide resources, equipment, and land area where a GS unit can train and function as an entity and encounter real-world problems and situations as part of a wartime scenario. Are we talking about a National Training Center environment or an expansion of the regional maintenance training site concept? Who knows?

What must happen first is for the logisticians and trainers to get together with the major commands and agree on an overall, cohesive training strategy that will systematically prepare these key logistics units for the “three days of war.” Once the training strategy is agreed upon, then we must provide the resources, equipment, and locations to meet the training challenge.

ALCG

Major Glenn O. Cassidy, Quartermaster Corps, is the military assistant for Reserve component readiness in the Office of the Assistant Secretary of the Army for Installations and Logistics. He is a graduate of the University of Massachusetts and holds a master’s degree from Northeastern University in Boston. He is also a graduate of the Army Command and General Staff College.

New Ammunition Policy and

Changes in ammunition policy and procedures of interest to logisticians and commanders have been published. They resulted from a combination of recommendations spelled out in formal ammunition-related inspections and reports over the past several years, including—the 1980 Conventional Ammunition Special Review report; the 1982 Ammunition Accountability Policy Review, directed by the Army Chief of Staff (CSA); the 1982–83 Worldwide Ammunition Review Program; and the 1985 CSA-directed special inspection of ammunition accountability by the Department of the Army Inspection General (DAIG) and the Army Audit Agency (AAA).

The DAIG and the AAA submitted their reports to the Army Vice Chief of Staff (VCSA) in August 1985. The VCSA approved all recommendations and tasked the Army Deputy Chief of Staff for Logistics (DCSLOG) with developing new and improving upon current Army ammunition policy and procedures that would correct ammunition accountability deficiencies and provide commanders, unit supply personnel, and leaders with guidance concerning requisitioning, receiving, storing, turning in, forecasting, and accounting for ammunition, residue, and brass.

The DAIG and AAA found that the loss and abuse of ammunition were primarily due to—

- Inadequate or unwieldy policy.
- Inadequate reconciliation of ammunition issues with turn-ins of live rounds, brass, and residue.
- Forecasting of excessive training ammunition.
- A poor amnesty program.
- Inadequate safeguarding of ammunition.
- Time-consuming issue and turn-in procedures.
- Excessive training ammunition stockage in ammunition supply points (ASP's).
- An overall lack of command emphasis.

As a result of these findings and recommendations, the ODCSLOG tasked the Army Logistics Evaluation Agency (LEA) with developing and writing ammunition policy for AR 710-2, Supply Policy Below the Wholesale Level. In conjunction with the Army Training and Doctrine Command's Quartermaster Center and School and Ordnance Missile and



Procedures

by Major Walter D. Brown III

Munitions Center and School, LEA was also to assist in developing and writing ammunition procedures that would complement policy. Ammunition procedures would be contained in DA Pam 710-2-1, Using Unit Supply System Manual Procedures, and DA Pam 710-2-2, Supply Support Activity Supply System Manual Procedures.

In coordination with ammunition trainers and logisticians in the field, both Active Army and Reserve components, LEA has developed, coordinated, and written recommended ammunition policy and coordinated the development of procedures. This new policy was published in a 15 March 1986 DCSLOG message to major commands. Policy was also published by the ODCSLOG in June 1986 in Unit Supply UPDATE Number 9. This publication contains the Army's most significant policy and procedural changes to the management of ammunition in several years.

Unit Supply UPDATE Number 9 contains a revised AR 710-2, consisting of five chapters, four of which include new ammunition policy. Chapter 1 (General Policy Definitions and Standards) addresses overall general ammunition policy, applicable to all users, managers, and leaders. Chapter 2 (Using Unit Supply, Organizational Supply Operations) addresses ammunition policy germane to the using unit. Most importantly, chapter 2 requires the using units to maintain formal hand-receipt accountability of munitions and brass after receipt from the ASP. Chapter 3 (Direct Support Operations) provides guidance to the supporting ASP regarding accountability, turn-in, and reconciliation. Chapter 4 (Installation, U.S. Property Fiscal Office, and other TDA Support Activities [Direct and General Support] Supply Operations) restates the policy contained in chapter 3 that is applicable to the functions of the director of logistics (DOL).

Ammunition policy for chapter 5 (Theater, Theater Army Area Command, and Corps General Support Supply Operations) will appear in Unit Supply UPDATE Number 10, scheduled to be published in November 1986.

Unit Supply UPDATE Number 9 also reflects stand-alone ammunition procedures contained in

chapter 11 of DA Pam 710-2-1 and chapter 25 of DA Pam 710-2-2. Chapter 11 of DA Pam 710-2-1, "Ammunition Accountability Procedures, Unit Level," contains procedures by which using units are to account for and reconcile munitions, including forecasting, requisitioning, controlling, and turning in ammunition and residue. This chapter also contains two new DA forms for accounting and controlling ammunition after receipt from the ASP. Chapter 25 of DA Pam 710-2-2 provides manual procedures for ASP supply support activity personnel using the standard Army ammunition system, level 4 (SAAS-4). These procedures complement those published in chapter 11 and also address procedures in Training Manual 38-L69-11-1, SAAS-4. Ammunition procedures for chapters 11 and 25 complement ammunition policy contained in AR 710-2.

The new ammunition policy and procedures were coordinated with the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) and will complement training ammunition policy in AR 5-13 and procedures in DA Circular 350-85-5 (STRAC). They also complement ammunition security policy in AR 190-11 as written by Office of the Deputy Chief of Staff for Personnel (ODCSPER). For example, AR 710-2 contains forecasting policy, and chapter 11 of DA Pam 710-2-1 contains training ammunition management information system procedures that implement the policy. The same policy on forecasting training ammunition in AR 710-2 will appear in a revision of AR 5-13 by ODCSOPS.

To give you an overview of the new policy and procedures, I will present a synopsis of chapters 1 through 4 of AR 710-2, as published in Unit Supply UPDATE Number 9.

Supply requests for seasonal or unusual needs, such as training ammunition forecasts, will be sent in advance to permit delivery according to required delivery dates and issue priority groups.

When preparing training ammunition forecasts, commanders will refer to DA Circular 350-85-5. Commanders will consider the following data—

- Historical ammunition consumption data from previous training. This requires interaction between the division ammunition officer (DAO) and the G3

or S3, G4 or S4, or DOL.

- Authorizations. Forecasts will not exceed annual authorizations.
- The training objective.
- Personnel fill.
- Equipment and weapon systems availability.
- Range time.

Units will not forecast or draw more training ammunition than required to meet training requirements or than can be expected to be used.

Excess ammunition and explosives will be monitored for possible redistribution.

When ammunition has been issued for training, unexpended ammunition, expended casings, and other residue will be turned in to the supply support activity or ASP and accounts will be reconciled within the first 5 working days following the completion of the training mission. All turn-ins of training ammunition will be reconciled with the original issue document. Ammunition to be turned in will be segregated by type and lot number, properly packed and marked (DANGEROUS MATERIALS), inspected for safety, and accompanied by a turn-in document and certificate.

Ammunition "found on post" will be turned in, in accordance with major command procedures of the ammunition amnesty program. The amnesty program is not intended to circumvent normal turn-in procedures; commanders will monitor the amnesty program to make sure it is not being used to circumvent accountability or control. Commanders will ensure that established amnesty procedures and controls do not prevent individuals from freely turning in ammunition and explosives.

Units are authorized operational loads of ammunition to perform their guard, ceremonial, state security, policy, and training missions during peacetime. Ammunition required by police and investigative agents in the daily performance of their duty may also be stocked. Common Table of Allowances 50-909 specifies the type and quantities of ammunition authorized to be stocked for operational loads. Because ammunition and explosives are sensitive items, minimal stocks will be kept and unit commanders will ensure that only the quantity of allocated short supply ammunition and explosives needed to support training is ordered.

The firing unit will use hand receipts to designate responsibility for control of operational loads of ammunition and explosives for training. This will ensure maximum return of unexpended munitions and residue.

Training ammunition authorizations will be based on the requirements in DA Circular 350-85-4 and available assets. A 90-day stockage level will not be

exceeded at the ASP.

All turn-ins will be reconciled with the original issue document (DA Form 581), and appropriate action will be taken to account for shortages of ammunition and missing residue according to AR's 190-11 and 735-11.

Commanders will not forecast or draw more training ammunition than required to meet training requirements.

Commanders will certify that appropriate action has been taken to account for ammunition shortages and missing residue.

The development and writing of the new ammunition policy and procedures were closely coordinated with ODCSOPS and ODCSPER for the sole purpose of getting the operational types and the logistics types on the same command, control, and communications wavelength. However, regardless of the developed interface, the key to good ammunition accountability and control is command emphasis and leadership at the ground level.

One important lesson that I learned as an Army Recruiting Command company commander was this: People give those areas attention that are checked by leaders, and leaders must ensure that responsibility is fixed at all levels. So, if the newly developed ammunition policy and procedures are to provide the means to an end, with the end being a reduction in dollars lost, then good leadership and commander checks will be the key. Without this commitment on the part of leaders, all policy and procedures will be fruitless, and the same ammunition control problems will continue.

Logistics excellence starts with you, the leader. And to leaders I say, let's continue to strive to attain the DCSLOG's goals in the areas of management and sustainment. Check out the new ammunition policy and procedures, follow up, and make them work!

ALCG

Major Walter D. Brown III was a logistics staff officer with the Army Logistics Evaluation Agency, New Cumberland, Pennsylvania, when he wrote this article. An ordnance officer, he holds a B.S. degree from the State University of New York in Albany and an M.S. degree in logistics management from the Florida Institute of Technology, Melbourne, Florida. He is also a graduate of the Logistics Executive Development Course and is currently attending the Program Management Course.

Market Surveys in Army Acquisitions

by Wayne V. Zabel and Arthur J. Mandler

The use of competition in the acquisition of defense goods and services is the law of the land. Competition is not a new requirement, having been the preferred practice according to acquisition laws and regulations for a long time. However, recent legislation has expanded competition requirements from effective competition to full and open competition. In the past, two or more independent contenders for a contract award constituted effective competition and, thereby, compliance with the law.

In today's environment, full and open competition requires that all suppliers capable of satisfying the Government's requirements be afforded the opportunity of competing for a contract. To change from the previous practice of accepting effective competition to promoting full and open competition requires the good-faith efforts of every person involved in the acquisition process to reduce the barriers to competition.

Full and open competition can only be realized by planning for it from the beginning of an acquisition. A partial list of competition planning considerations would include funding, timing of actions, human resources, technical data, and communication with industry. Every portion of the plan is important; however, failure to adequately communicate the need to industry may doom an otherwise perfect plan.

Market surveys are essential in communicating with industry so that the potential for maximum competition is realized. Market surveys are not an optional technique that may be employed when convenient. They are required in *all* Army procurements, with a few specific exceptions. Acquisition personnel must understand the concept and methods of conducting market surveys to enable them to better meet the Army's objectives of increasing competition and buying smarter.

In the broadest sense, a market survey is the process the Army uses to find contractors who can fill its needs for specific goods or services. Without using

some form of market survey, all other competition-enhancing activities are diminished and objectives of the competition plan are not achieved. For example, the Army expends both human and dollar resources to acquire nonrestrictive technical data packages (TDP's). However, the TDP alone will not produce meaningful competition unless a market survey is used to find *all* of the contractors capable of accomplishing the task at hand. If the existence of that TDP and the requirement itself is not communicated to the entire industry, something less than full and open competition will result. The spirit and intent of the law will not be met nor will the full benefits of competition be realized.

The best available guidance on market surveys is found in Army Regulation (AR) 70-1, concerning procurement of nondevelopmental items (NDI's). NDI's are basically off-the-shelf commercial items. Performing market surveys for NDI's is much less complex than performing surveys for military-unique items. The relative simplicity of NDI market surveys is based on the fact that the Army essentially is trying to find producers of items currently being manufactured for the commercial marketplace that will fill a military need.

Market surveys for military-unique items are much more complex, since they are attempts to locate firms that have the capability of manufacturing items to military specification. The critical difference between these extremes is finding manufacturers who are already producing items on the one hand and searching for manufacturers with the capability to produce military-unique items on the other.

Before exploring the market-survey concept further, the meaning of the term must be understood. The Federal Acquisition Regulation defines market surveys as attempts to ascertain if qualified sources capable of satisfying the Government's requirement exist; or, phrased differently, a market survey is an action taken to find potential sources to fill the Army's acquisition requirements.

There are many types of actions that constitute market surveys, and these actions should be thought of as various points along a market survey spectrum. At one end of the spectrum are the routine *Commerce Business Daily* (CBD) synopses, catalog searches, and trade publication reviews. These surveys are more appropriate at the buyer level for routine purchases of highly competitive items. Further along the spectrum are market surveys that involve many personnel who contact industrial associations; participate in trade shows and industry conferences; and engage in formal, personal contacts with managers or officers of firms that may have the capabilities of producing items the Army requires.

Between the CBD synopses and the trade-show participation points in the spectrum are many other types of market surveys. Many routine actions taken by Army buyers fall in this middle range. In this middle range would be the exchange of information among buyers and the publication of sources-sought synopses. Asking potential contractors to identify their major competitors is an often-overlooked method in this range.

Conducting a survey that results in more than a routine synopsis often requires the qualities of a good detective. Positive results from a market survey are due more to personal knowledge, initiative, perseverance, creativity, and flexibility than to any other factors. One must find sources of information, follow up leads, and not be easily discouraged. Market surveys are a communication process in which the seeker of knowledge must use intermediate sources of information to locate potential contractors.

A particularly effective market survey technique is to circulate a "competition hit list." A competition hit list can take any form, but it is basically a notice to industry that the Army needs a certain item or items and desires to expand the competition in acquiring them. The hit list solicits information about producers' capabilities and willingness to bid on the listed items and requests them to respond to a designated point of contact if they believe they can satisfy the requirement and be competitive in their pricing. Some hit lists include pictures of the items in addition to a detailed description of the acquisition history, including past prices, quantities expected to be needed in the future, stock numbers,

and any other information potential suppliers will need in deciding if they are interested in supplying the listed items.

The competition hit list demonstrates that acquisition personnel do not operate in a vacuum. Much data is available when one knows where to look. More potential sources of information are shown in the chart below.

Recent regulation changes require that some form of market survey be used on *all* acquisitions. Therefore, the question is no longer *when* to use a market survey, but rather *what type of survey* is appropriate for a given acquisition. The variables in each acquisition that determine the type of survey to be used include, but are by no means limited to, the history of the item or service needed, its technological complexity, and the availability of usable data.

The market surveys we have discussed can be categorized as low-, medium-, or high-effort surveys. A low-effort survey would be required for a routine synopsis. A medium-effort survey would obtain information from readily available sources by telephone or from sources-sought synopses. A high-effort survey is characterized by advertising in trade

Potential Sources of Acquisition Information

- Requirements personnel.
- Design engineers.
- Small and disadvantaged business representatives.
- Other buyers in Army, Department of Defense, and industry.
- Contractor marketing personnel.
- Industry, trade, and professional associations.
- Trade papers and journals.
- Defense Contract Administration Services activities.
- Industrial registers, such as the Thomas Register of American Manufacturers, the Conover-Mast Purchasing Directory, or Mac-Rae's Blue Book.
- Business telephone directories.
- Manufacturers' catalogs and sales literature.

journals, publishing competition hit lists, and participating in trade shows and industrial conferences.

The specific acquisition must be evaluated to select the most appropriate type of market survey. The different types of surveys are not mutually exclusive and a given situation may require that a number of techniques be used for a single acquisition. The use of inappropriate survey techniques results in either a waste of resources (too much effort) or an inadequate survey (not enough effort).

At times, a low-effort survey is insufficient and will not produce full and open competition for an inadequately described item. For example, a requirement may exist for a complex missile component to be acquired competitively for the first time. If specialized and unique production processes proved troublesome for the original developer and the quality of the TDP is questionable, potential producers would be unable to judge by a synopsis if they would be capable of producing the item, much less if it would be worth gearing up for production. A low-effort survey, however, would normally be satisfactory for items characterized by an adequate TDP and a history of being competitively acquired.

The middle of the spectrum includes acquisitions in which only a few bidders have shown interest. In these cases, an increased level of effort in the market survey is warranted. The first steps may be a sourcesought synopsis or a competition hit list to communicate the need to industry. If these actions do not bring satisfactory results, more intensive market survey techniques must be employed until the requirement for full and open competition is satisfied.

Army acquisition personnel must think about the specific conditions surrounding a requirement. For example, if the procurement history is limited, planning for competition must include the use of a market survey strategy that takes advantage of all the information available and leads to full and open competition.

Market survey guidelines found in acquisition regulations infer that contracting personnel are responsible for assuring that market surveys are performed, but contracting personnel are not always responsible for performing them. Many market surveys beyond the low-effort level require information that could be more efficiently gathered by the requiring activity than by the buyer. For example, design engineers would normally have better access to in-

formation on firms capable of pursuing a state-of-the-art technology. However, it would be the buyer's responsibility to request the engineer's assistance. The acquisition community must recognize that successful market surveys are cooperative efforts.

In the early stages of major system development, the program or project office has primary responsibility for performing market surveys. In this kind of acquisition the survey effort is complicated by the need to find capable contractors whose interest can be sustained through the development phase. This is essential to assure that an adequate competition base is established from the development of the technology through the production and life cycle support of the item.

Market surveys have been made a regulatory requirement in the DOD acquisition process because they are a sound business practice. Market surveys are an effective means of achieving full and open competition. Without an effective market survey, the entire competition plan is jeopardized.

It takes the talents of engineering, legal, and logistics personnel, along with contracting officer and competition advocacy program personnel, to create the conditions that allow full and open competition. The market survey is the Army's communication link with industry in the competition plan. Planning for competition must begin early in the life cycle of an item. The earlier that planning for competition begins, the more likely that full and open competition can be achieved and sustained. To maintain a pervasive competition attitude throughout the acquisition activity demands that special emphasis be placed on the market survey as the Army's link with industry.

ALCG

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Logisticians and Resource Management

by Alfredo Campo

Logistics has been defined as the science of planning and carrying out the supply, movement, and maintenance of forces. Today, as in the past, logisticians must feed, supply, and service the troops. To do that they must first secure the necessary resources. Resources must be obtained in a constrained fiscal environment. To effectively perform their mission, logisticians must be able to compete successfully in the resource management world.

Until recently, many logisticians considered the resource management world as foreign territory, better left in the hands of trained budgeteers or comptrollers. However, because of the painful effects of budget reductions, that attitude is being replaced by much wider participation in the resource management and budget formulation process. Greater

awareness, participation, and education is necessary to maximize our opportunities in this highly competitive arena.

Meanwhile, as the Army prepares to deal with the effects of the fiscal year 1987 congressional budget authorizations, the program objective memorandum, and command operating budgets, it is essential that logisticians at all levels be armed with the necessary skills that will allow them to compete successfully for their share of available resources.

Realities must be recognized, however, to preclude our establishing unattainable goals. The fact that logistics programs often will not receive the level of funding desired should not come as a surprise, since it is an unfortunate fact that on occasions a balanced budget will require the strengthening of tactical programs at the expense of combat service support programs. A properly balanced program is the objective but one that is rarely attained. Joining the wailing chorus decrying adverse budgetary decisions, as is the norm, will only be an exercise in futility. Today's funding competition is keener, the participants are better informed, and there are fewer alternatives.

The direction is clear. Effectiveness in budgeting and programming demands that logisticians at all levels know the process as well and be as competent in it as our counterparts in other areas. This means being very much a master of the policies, procedures, intricacies, and fine points in the resource management process. This also means that we logisticians must be extremely conscious of and well versed in the planning, programming, budgeting, and execution system (PPBES) as it is practiced within the Army and Department of Defense (DOD).

Essentially, the job of funding logistics programs is a collective effort that includes users, functional proponents, and resource managers. Funding will require the full participation of everyone concerned, as well as careful orchestration by those responsible for the process. Funding is one of the principal responsibilities of functional managers and proponents. Chances for success will increase proportionately to the level of participation and competence. Chances for success will diminish if functional participation is not available.

While the programming and budgeting process is

well defined in Army regulations, there are some common-sense principles that also should be observed.

To begin with, everyone should recognize that an effective logistics system requires a well-balanced program, which, in turn, requires that the highest priorities be funded with the correct amount of dollars. In other words, the requirements determination needs to be credible to ensure that the command indeed knows what its needs are and whether or not they are being properly recognized and accurately prioritized. This also means that "pet projects" must be placed in their proper perspective.

The prioritization function is critical to the overall process. Commands should be fully cognizant of what their funding authority can buy and what it is going to buy. Therefore, intelligent decisions will have considered all viable alternatives as well as life cycle costs and benefits. Having determined its needs and priorities, the command's functional managers must ensure that their programs are incorporated in their portion of the proposed budget being forwarded for further consideration and prioritization, first by their higher headquarters, and later by Headquarters, Department of the Army (HQDA).

Often functional managers and proponents are shocked when they find out not only that their programs did not get the level of funding they expected but, worse, that their programs were not forwarded for consideration.

This points out the need to follow up on the process. Following up implies maintaining an awareness of the life cycle events of the program and budget process and taking those actions required to maintain the integrity of the proposed program or command budget. The fact that a given program has been included in the proposed command budget and has been forwarded to HQDA does not give functional managers and proponents license to say that they have done their job and that the problem is no longer theirs.

To the contrary, getting a proposed program to HQDA is only the beginning of the real battle, for it is within the walls of the Pentagon that critical decisions and tradeoffs will be made that will reflect in the Army program and budget, which eventually will be forwarded to DOD for consideration and in-

tegration into the President's budget. Throughout this process the functional manager and proponent remain critical players, for they will have to provide the answers that will further justify their programs or enable the leadership to make intelligent tradeoffs.

While following the budget life cycle process, functional managers and proponents must recognize that the individual events and intricacies of the process do not remain static. The process is very dynamic. Actually, individual portions of the process change from year to year. Some changes are subtle, while others are quite significant. This points up the need to keep current and well tuned in to the barrage of almost inevitable changes.

A case in point comes to mind that significantly altered the process for one functional area. The PPBES process for information management was changed significantly by a series of HQDA decisions aimed at gaining control over the proliferation and ever-increasing information management requirements of the Army. The critical decisions included establishing the Army Information Systems Command, the Office of the Assistant Chief of Staff for Information Management (OACSIM), and an information management panel at HQDA and requiring the submission of an information management plan (IMP).

All of these changes had a powerful impact on the PPBES and created a greater need for awareness and participation by functional managers and proponents at all levels.

An analysis of the impact these changes had on the PPBES process is quite revealing. The creation of the Army Information Systems Command consolidated the automation and communications missions. Automation was now mated with communications. This change brought about the migration of a significant amount of nontactical automation resources to include manpower, hardware, and software from all commands to the new command.

While the migration of automation resources to the gaining command was mandated to take place over a period of time, losing commands had to make significant adjustments in their organizational structure, adjust for the shift of assets, reflect the changes in their program submissions, and recognize the presence and role of the new command in the budget

process.

Establishment of OACSIM brought about profound changes in that a fundamental part of its mission is the resource management for all automation and communications. Functional managers and proponents must recognize the far-reaching implications of its mission, for OACSIM now is required to play a critical role in approving, prioritizing, and funding most automation and communication programs.

Establishing the information management panel and requiring the submission of the IMP are two procedural changes—by-products of the OACSIM—that also have a significant impact in the PPBES process. The panel probably is the more significant of the two, since its creation was aimed at considering, prioritizing, and funding the totality of Army information management needs whether they be tactical or nontactical.

Part of the significance of this action is the fact that before the panel was established, the Army had less than an accurate idea of the extent of its automation and communication requirements. This was because automation requirements were often included as part of larger projects in which the automation systems were to be used; thus, visibility of automation requirements was often lost. The IMP has brought to the budget table a vastly clearer visibility of automation and communication requirements, resulting in much keener competition for funding.

Obviously, the greater visibility and keener competition fostered by the panel necessitates greater awareness and participation by functional managers and proponents. The IMP, while not directly associated with the formal PPBES process, nonetheless represents a critical change for functional managers and proponents in that it is now the mechanism through which individual automation projects are recognized, authorized, and prioritized by HQDA and requires at least partial disclosure of costs, benefits, and programming data.

The changes to information management were simply used to illustrate the absolute, pervasive need for logisticians and program proponents to become full participants in the PPBES process. The analysis of the changes to information management clearly illustrates why functional managers and program proponents must also consider themselves financial managers. The logistician's task is clear: *provide support to the battlefield*. But, first we must acquire sufficient funding authority. **ALOG**

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Army Logistics in Retrospect



'Rhinceros'

The hedgerow cutter, or "rhinceros," was one of the most famous and important field expedients of World War II. During the breakout from Normandy, thick hedgerows severely handicapped the

advance of U.S. tanks. The tanks tended to ride up onto the hedgerows instead of crashing through them, exposing their weak belly armor to enemy antitank fire.

The solution was the rhinceros, a five-pronged iron fork attached to the front of the tank. Invented by a sergeant in a tank company and developed by the company's maintenance officer, this fork dug into the hedgerow, pinning the tank to the ground and enabling it to crash through the hedge.

The mission of manufacturing the hedgerow cutters, in large numbers and in a hurry, fell to the 52d Ordnance Group of First Army Ordnance. They were constructed of metal obtained from a variety of sources, including the beach obstacles constructed by the German Army before D-day. Within 48 hours, almost 300 hedgerow cutters were made, and, within a week, 60 percent of the tanks used in the breakout were equipped with the rhinceros. **ALOG**

Fighting in the Rear

by Major John M. House

The author explains the Army's current rear-battle doctrine and its effect on logistics organizations and operations.

Combat in rear areas is not new. Confederate guerrillas tied up thousands of Union soldiers guarding lines of communication during the War Between the States. Merrill's Marauders successfully disrupted Japanese operations in Burma during World War II by operating behind enemy lines. More recently in the 1973 Arab-Israeli War, Egypt inserted ranger units behind Israel's frontline units to disrupt reinforcements moving through the Sinai. Since combat service support soldiers are usually located in rear areas, they should understand the rear-area threat and be familiar with the techniques prescribed by current doctrine for conducting rear battle.

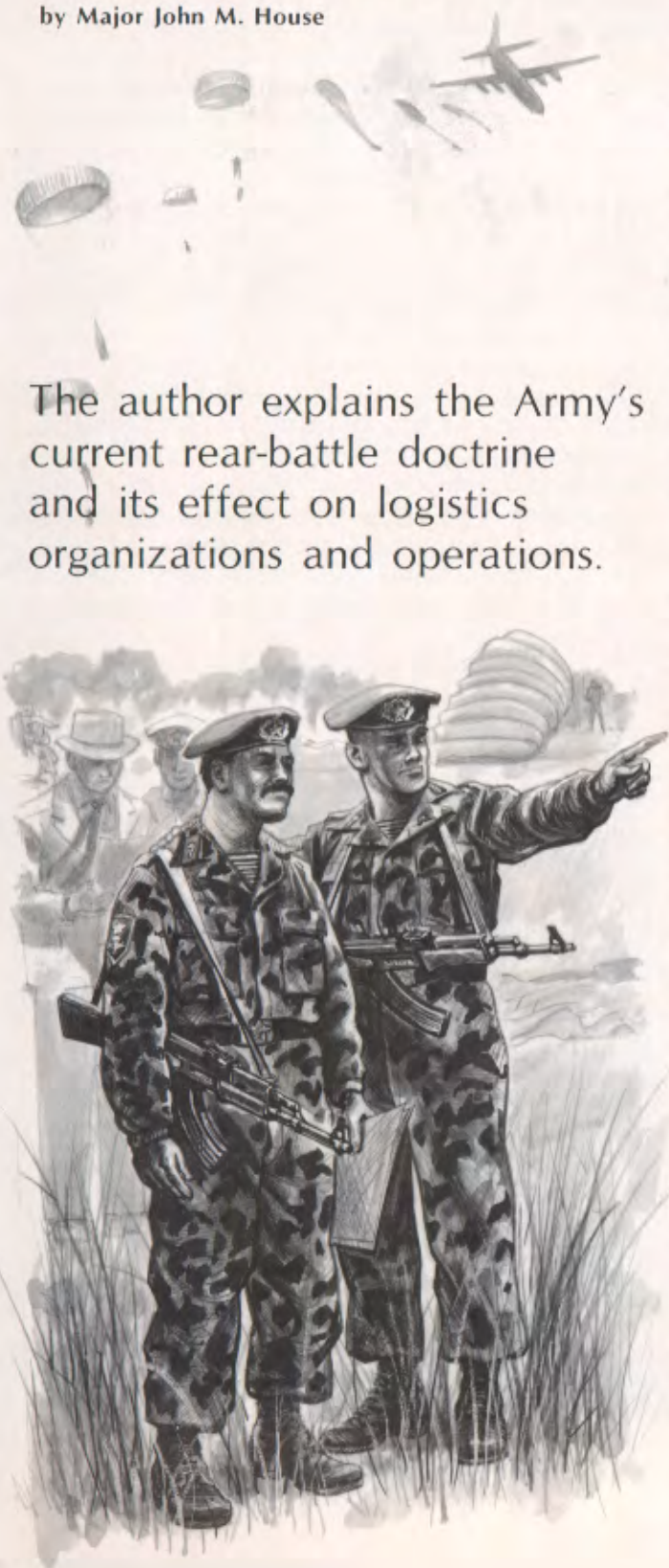
Current doctrine on rear-area combat is found in the Army's how-to-fight manuals. Field Manual 90-14, Rear Battle, pulls together all aspects of rear-area combat. It explains the three levels of threat and how to defeat them.

The threat levels serve as a planning guide for rear-area operations. Level-I threats include enemy-controlled agents, sabotage by enemy sympathizers, and terrorism. Level-II threats include diversionary and sabotage operations conducted by unconventional forces; raids, ambushes, and reconnaissance operations conducted by combat units; and special missions or unconventional warfare missions. Level-III (battalion-sized or larger) threats include heliborne, airborne, amphibious, infiltration, and deliberate ground force operations.

In a future conflict we can expect to find Soviet agents such as the KGB operating throughout the NATO theater of operations. Their missions will include espionage, interdiction, and subversion, and they will be aided by enemy sympathizers and terrorists.

Soviet special forces (*Spetsnaz*) teams—5 to 14 people trained in demolitions, communications, foreign weapons, and foreign languages and wearing civilian or even NATO military attire—will operate in the U.S. rear area. Their primary targets will be nuclear-capable weapons, nuclear ammunition storage sites, command and control elements, and logistics facilities. *Spetsnaz* units may be aided by company-sized conventional forces. In addition, the reconnaissance battalions and companies of the Soviet motorized rifle and tank divisions and regiments will operate in our rear area.

Soviet forces will include airborne and air assault units capable of striking throughout the rear area.



Motorized rifle battalions may also be used in heli-borne operations. With sufficient airlift assets, the Soviets could drop forces with armored vehicles into the rear area.

The rear area extends from the rear of the main battle area through the communications zone. Combat support and combat service support units will be concentrated within this area. Few combat units will be found here, for they will be fighting in the main battle area.

A clear definition of rear operations is found in FM 90-14:

... those actions, including area damage control, taken by all units (combat, combat support, combat service support, and host nation), singly or in a combined effort, to secure the force, neutralize or defeat enemy operations in the rear area, and ensure freedom of action in deep and close operations. Area damage control includes those measures taken before, during, and after hostile action or natural or man-made disasters to reduce... damage and to minimize its effects.

Since the primary objective of rear operations is to retain freedom of action for close and deep operations, success there means that actions taken to defeat the rear threat do not require major changes in plans for close or deep operations. Conversely, if the outcome of rear-area combat causes close or deep operations to be lost, rear operations have been lost.

Current Army doctrine establishes responsibilities and structure for rear operations. The operations staff (G3, DCSOPS) will integrate the planning and execution of rear operations with deep and close operations. Rear-area operations centers (RAOC's) will be established at division, corps, and theater army area command (TAACOM) levels. In addition, Army of Excellence force design requires each headquarters, corps support group, and TAACOM area support group (ASG) to establish a RAOC. The RAOC's mission is to plan, coordinate, advise, and direct the execution of rear operations. A rear-operations officer is appointed by each echelon commander to control the RAOC; although the RAOC is actually an element of the rear command post, the rear-operations officer may control the entire rear command post operation.

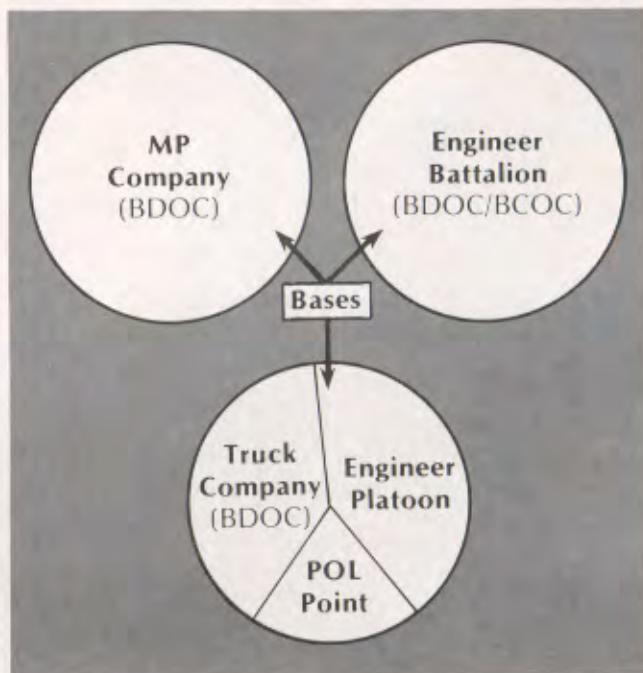
Combat support and combat service support units in rear areas establish bases with well defined perimeters, controlled by a base defense operations center (BDOC) for self-protection. Units are grouped as the situation allows into base clusters under a base

cluster operations center (BCOC), which is controlled by the senior base commander (see chart below). The BDOC and BCOC are staffed by individuals from the associated units. Base defense liaison teams (BDLT's) are assigned to each RAOC to coordinate rear-area operations with base clusters, adjacent headquarters, higher headquarters, and host nation forces (see chart on page 19).

The dispersion of communications sites increases their susceptibility to level-II threats. Because there are not enough people or weapons at such sites to offer a strong defense, military police (MP) elements should be prepared to quickly respond to their requests for help. The primary duties of individuals located there will prevent them from establishing a tight perimeter, giving *Spetsnaz* elements an opportunity to attack the sites and escape. Defense of these critical locations must be integrated with the defense of other targets and base clusters in the rear area.

Every element in the rear area should be able to report combat activity to the RAOC immediately, for rapid response to a threat is needed to minimize interference with combat support and combat service support operations. The rear-area operations net provides this quick, direct link. Corps and division signal plans should incorporate support of this net with relay stations, mobile subscriber equipment, and other assets.

Indirect fire assets available for rear operations depend on the force responding to the threat. If a maneuver force is reacting, its organic mortars will



□ A typical base cluster.

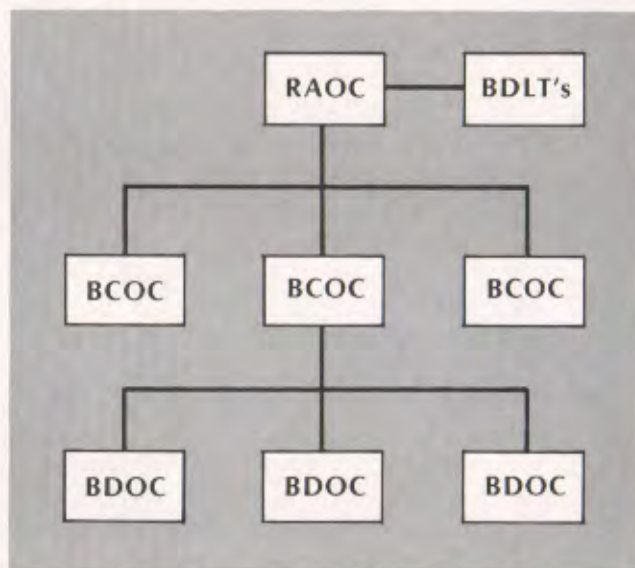
be available immediately. Fire support teams and officers will coordinate the fire. If a combat support or combat service support unit requires indirect fire assets, it will contact the RAOC and the RAOC will instruct it to request support from a particular artillery unit. A maneuver unit responding to a rear threat will also obtain artillery support through the RAOC unless its associated artillery unit is part of the rear-operations package. An armored cavalry squadron, having organic artillery, will request indirect fire through the RAOC only if reinforcing assets are required.

Clearing fires for target engagement present a special coordination problem. Since FM 90-14 states that a key responsibility of the RAOC is terrain management, doctrine supports assigning the task to it. Such placement of responsibility is logical: the RAOC is located in the rear command post, it directs rear operations, and it knows the location of all units in the rear area. If the maneuver force ordered to attack a rear threat is given an area of operations in which to fight, the maneuver force will coordinate and clear the fires in that area; however, the RAOC will continue to clear fires outside the maneuver unit's area of operation. Allowing a division RAOC to directly contact a corps RAOC for support will speed reaction to a threat if the corps RAOC has a force (artillery or other) under its direct control.

Close air support (CAS) used for rear-area combat is requested and controlled much like that used in close and deep operations. Although both immediate and planned missions are possible, the latter will be rare since rear-area actions are difficult to predict. Characteristics peculiar to rear operations that will have an impact on close air support include the intermingling of combatants and civilians, a lower probability of air-to-air combat, and a reduced enemy air defense threat than that experienced at the forward line. All air missions will be controlled through the tactical air control system (see chart on page 21).

Planned close air support requests follow the same procedure for rear operations as for close operations. Requests are forwarded through Army S3 or G3 air elements to the corps or higher level headquarters. That headquarters sends the approved mission to the tactical air control center (TACC), which coordinates the Air Force support.

Immediate close air support requests proceed from the battalion, brigade, or division tactical air control party (TACP) to the air support operations center (ASOC) using the Air Force air request net. The ASOC instructs the appropriate Air Force element to meet the request if assets are available. In the theater army rear area, RAOC's will pass im-



□ Rear-area organization.

mediate requests in the same manner as planned requests. The corps RAOC will call the corps G3; the division RAOC, the division G3. If a TACP is with the RAOC, it will use the Air Force request net to contact the ASOC or airborne battlefield command and control center.

Aircraft and ground elements must be able to communicate before the aircraft arrive at the target area. Ground forward air controllers are available in each maneuver battalion's tactical air control party to control close air support. When necessary, air liaison officers and tactical air control parties can themselves act as ground forward air controllers. Airborne forward air controllers based in rear areas may be assigned to support rear-area close air support. In addition, a ground commander may call upon helicopter pilots familiar with joint air attack team tactics, fire support teams and officers, Air Force security police, and field artillery aerial observers. The AC-130 gunship's communications and target detection equipment allow it to operate without a forward air controller (or to function as such for other aircraft in an emergency). Although some aircraft have FM radios capable of communicating with ground elements, others will require a forward air controller.

Air defense artillery weapons can destroy a threat before it enters the rear area. Air defense artillery radars provide not only fire control for their weapon systems but also intelligence information on aircraft activity useful to the RAOC.

Missions for MP elements include area security, discipline, law and order, battlefield circulation control, and enemy prisoner-of-war operations. Usually one corps MP company augments each divi-

sional MP company. Mobile, MP's can quickly respond to rear threats exceeding the defensive capability of bases and base clusters. They must know how to request indirect fire support as well as how to fight. Although MP's may be able to destroy many level-I and some level-II threats, in other cases they will only be able to locate, identify, and watch an enemy force, reporting this information through their headquarters to the RAOC. The RAOC can use this intelligence information to direct a tactical combat force to destroy the threat.

A rear-dedicated force capable of destroying a level-III threat will rarely be retained in an environment where U.S. forces will be greatly outnumbered. Instead, the ground commander will usually assign such rear-combat missions to maneuver forces. These include units in reserve, reconstituting, and passing through the rear en route to some other point. Mechanized and armored units, attack helicopters, and light infantry units supported by lift helicopters have the mobility needed to respond quickly over a large area; the expected threat will determine exactly which type of force is appropriate. Attack helicopters are especially desirable, for they can rapidly concentrate firepower to find, fix, and begin the destruction of a rear threat. A ground element will be required to complete destruction of the rear threat.

Doctrinally tasked to plan and direct rear operations, the RAOC can also operationally control a tactical combat force when necessary. The RAOC then requests logistics and administrative support for the force from its headquarters. To preserve unity of command, the tactical combat force follows the tactical instructions issued from the rear command post of the RAOC. A base defense liaison team from the area where the tactical combat force is operating coordinates support with the RAOC. The RAOC provides the tactical combat force with a plan for limited logistics and medical support and sets the boundaries for the force's area of operations. The RAOC notifies all friendly elements in the area that a combat force is being employed to attack the threat. The force's task is simplified and the risks of friendly casualties reduced if all combat support and combat service support units in the area are instructed to vacate. Units remaining in the area are placed under control of the combat force until the mission is completed. The base defense liaison team assisting the force conducts a battle damage assessment and requests any area damage control support that is needed.

A second possibility for command and control of

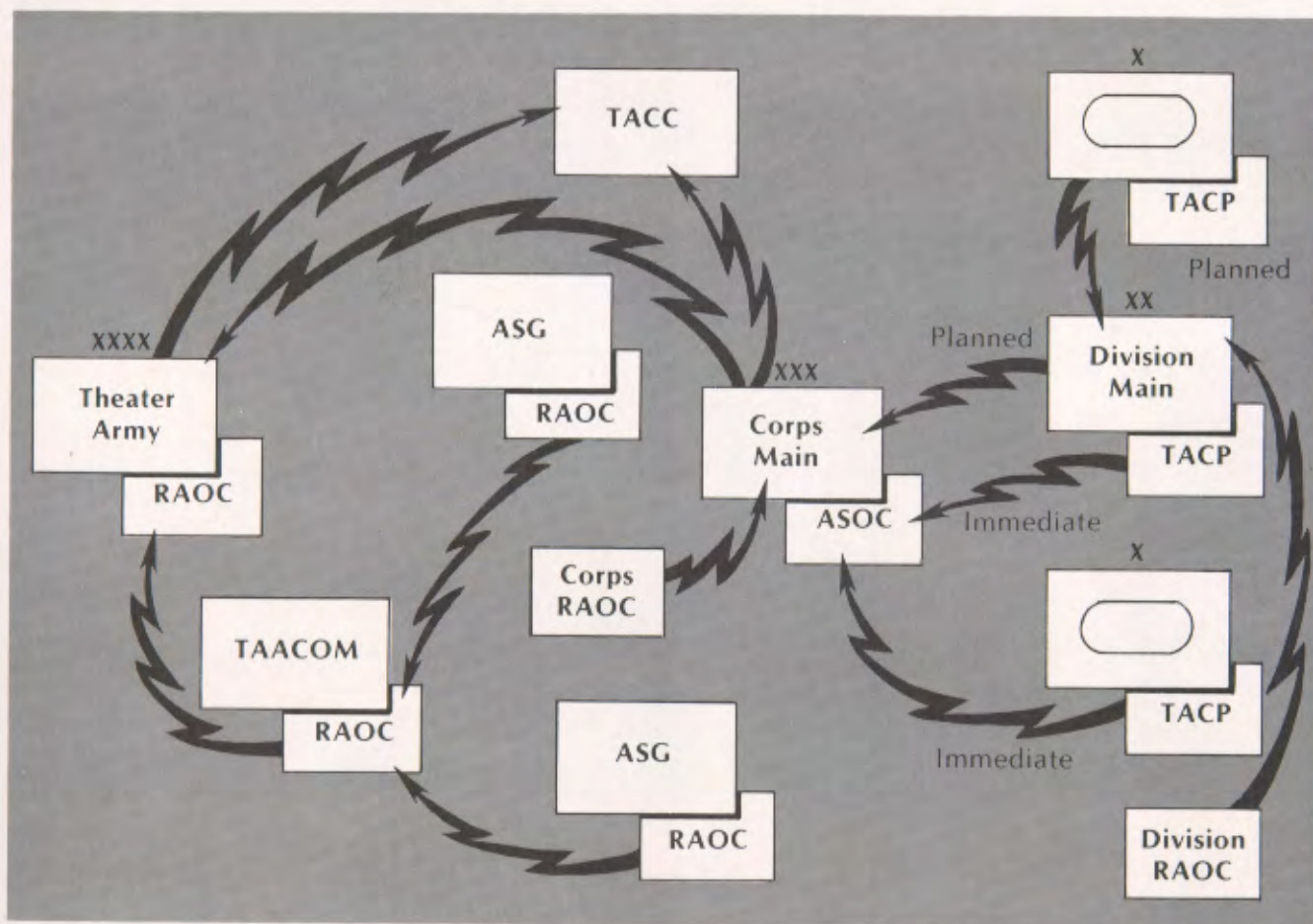
the tactical combat force is to retain rear operations against level-III threats in the maneuver chain of command. This results in the S3 or G3 (battalion, brigade, division) fighting the level-III threat. Coordination of the overall battle may be enhanced since the G3 is required to perform that function. However, this requires the tactical command post, which is already fighting the close operation, to divert attention and resources to the rear, an action doctrinally the mission of the rear command post. Unity of command for rear operations is violated, for two command posts are fighting the same battle.

One solution would be to specify a focused area of operations for the G3. Units moving through the rear would take instructions from the rear command post until the hand-off point was reached, where the G3 would assume control of their activities. The G3 would direct the operations in the tactical combat force's area of operations (through the force's parent unit), while the rear command post would direct operations in the rear area outside the force's operational area. Although this would require the force's parent unit to divert its attention away from its primary mission for a time, such an arrangement may be necessary. A commander must evaluate his resources and determine where risk exists (unity of command versus combat expertise) and make the decision. Using the deputy commander as the rear-battle officer at the rear command post would enhance the rear command post's (or RAOC's) ability and credibility, given the deputy commander's experience and position.

In closing, a few major points deserve emphasis. Attack helicopters provide an excellent initial response force to a level-III threat due to their mobility, firepower, and reaction time. Armored or mechanized forces should be used to counter level-III threats involving armored vehicles. Infantry forces must also be available to engage hostile infantry forces. Intelligence assets should determine and track the location of threatening air assault and helicopter units.

Close air support can be a valuable asset for rear operations. However, the risks associated with diverting such support from close and rear operations must be compared to those associated with using other fire support assets in the rear. Plans for rear operations must address forward air controller availability.

Field artillery support may be required for rear operations. If the depth of the battlefield precludes supporting close, deep, and rear areas simultaneous-



□ Tactical air control system.

ly, artillery should be positioned to fire on targets throughout the battlefield area based on the commander's priorities. The commander must consider the threat expected in each area of the battlefield and determine where risk is most acceptable. When artillery is committed to weight rear operations instead of a tactical combat force, the artillery unit may be in direct support of the RAOC, the military police, or a unit directly involved in rear operations.

Combat support, combat service support, and base defense liaison team personnel must be trained to plan, coordinate, and direct fire support. They must be able to defend themselves against level-I and level-II threats and have sufficient firepower to delay defeat by level-III threats until they can move or receive reinforcements.

Air defense artillery command and control must be linked to intelligence information on helicopter activity, since the best way to avoid a rear threat is to destroy it en route to the rear. The information should identify potential landing zones and air

assault force objectives. Information about air defense artillery weapons should include their likely approaches to potential rear objectives.

The key to efficiently countering the rear threat is a comprehensive plan that is understood by all units, including the logistics units located in the rear area. Planning eliminates the confusion and delay often resulting from threats entering the friendly rear area. Integrating combat support and combat service support operations in the rear with operations in the close and deep areas is a key to winning the battles of the future.

ALOG

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How to

by Lieutenant Colonel E



The AirLand Battle is the focus of the Army's current fighting doctrine. This doctrine divides the battle into three areas of engagement—rear, close, and deep operations (see chart on page 24). To ensure unity of effort and success in combat, all three areas are interrelated.

In deep operations, a commander must operate in both offensive and defensive roles. Deep operations may be conducted by maneuver forces or by indirect means. Adequate support for deep operations is an important part of the entire picture. Proper orchestration of combat, combat support, and combat service support forces and synchronization of the land and air arms are mandatory. It is also important to synchronize deep operations with close and rear operations.

Combat service support planners and operators cannot be restricted by traditional support roles; they must always be willing to tailor organizations and use innovative methods geared to the specific mission.

There are basically three ways to support deep operations. We can—

- Take the required combat service support with the attacking force.
- Resupply the attacking force through a ground line of communication.
- Resupply the attacking force through an air line of communication.

A logical approach is to combine all three, for each method has distinct advantages and disadvantages. The easiest approach from the standpoint of planning is to take all required logistics support with the maneuver force. Although this approach ensures self-sufficiency, an excessive tail may limit survivability, inhibit freedom of movement, and slow down the force.

Resupplying the maneuver forces using a ground line of communication permits more complete support; however, combat, combat support, and combat service support assets are required to open, maintain, or reopen secure resupply routes to the maneuver force. Planners must consider the risks involved in diverting additional combat power and logistics forces to open, reopen, or maintain ground lines of communication.

Support Deep Operations

David M. Reiss and Lieutenant Colonel Gary R. Lee



Aerial resupply allows rapid support to the deep operations force, independent of actions of close or rear operations and with minimum regard to terrain peculiarities. However, support aircraft are at the mercy of weather conditions and require secured air corridors free from the enemy's combat aircraft and air defense artillery systems. Due to aircraft weight and size limitations, aerial resupply may require numerous assets and flights. The planner should consider that fewer aircraft will be available than required.

Regardless of the option chosen—self-sufficiency, resupply by ground, or resupply by air—logistics planners must identify and weigh the advantages and disadvantages of each alternative.

The logistics community should organize by tasks and tailor traditional methods of support. The task-organizing process has to be innovative and flexible. Resources should be echeloned, combat service support organizations tailored, and packaging configured to reduce associated risks. There are several factors that can assist in determining how to sustain the deep operations force, including the—

- Tactical mission and follow-on mission of the force.
- Depth of the attack.
- Composition of combat and combat support forces.
- Scheme of maneuver.
- Availability of ground and air lines of communication.
- Sustainment and readiness levels required.
- Commander's intent.
- Intelligence preparation of the battlefield for deep, close, and rear operations.

Planners and operators should quickly grasp the implications of these varying factors, as well as others that might impact upon specific operations, and coordinate their plans and actions with all staff

members. Then, with a thorough understanding of deep operations, combat service support commanders and their staffs can develop a total-force concept of support with requirements and risks identified.

Support Planning

Support planning for deep operations should address three distinct phases. The first phase consists of those activities occurring before a force crosses the line of departure or line of contact (LD, LC). The second phase consists of those operations conducted during the execution of the mission forward of the initial line of contact, and the third includes those actions required after the mission is completed, which includes preparation for future missions.

Support requirements for these phases should be analyzed based on the need to arm, fuel, fix, man, transport the support force, and protect the sustainment system itself from attack. Field manuals such as FM 101-10-1 provide specific data on consumption and loss factors. Other more accurate and directly applicable factors, such as the unit's actual combat history and the commander's directed concept of maneuver, may also be used to determine requirements. The force conducting deep operations should always be configured for maximum self-sufficiency.

A critical factor that is often not evaluated in deep operations planning is the command and control relationship between the operational-level support assets of the corps and the tactical-level division force that conducts the deep operation.

The relationship can be one of either *command*—that is, attached or operational control (OPCON)—or *support*—such as direct support (DS) or general support (GS). Each relationship has distinct advantages and disadvantages for logistics units. A deep operations force concerned with a discontinuous line

of communication may consider using attached assets rather than operationally controlled, direct-support, or general-support assets. Combat service support units at operational (corps) level will receive taskings to support a specific operation. These may be in the form of a mission tasking: "The xxth Support Group will provide equipment recovery support to xx Division from assembly area to LD-LC." In another instance the tasking may be for a tailored task force to accompany the deep operations force. For example, a transportation battalion may be designated as the command and control task force headquarters and other units—medical, supply, and maintenance organizations—added as required.

The logistics requirements for nonorganic units should be interwoven into the support and command and control relationships and adequately addressed by the planner during any deep operation.

Phase I—Activities Preceding Operations

Ammunition requirements for deep maneuver operations should be a major concern for the combat service support planner; the heaviest consumers normally are field artillery units. Required supply rates for class V should be determined and compared with supplies available (controlled supply rates). Ground or air transportation assets should be planned for delivery of ammunition needed to sustain the deep operation.

Techniques should be devised to reduce requirements for materials-handling equipment and to simplify ammunition issue. These techniques should include responsive communications between users and a push-pull system to provide actual resupply requirements.

Logistics operations are labor-, equipment-, and time-intensive. Stockage policies and basic loads of the deep operations force should be adjusted, if necessary. Adjustments should be planned carefully, both to better support the tactical operation and to simplify resupply.

Vehicles of the deep operation's maneuver force (bulk tankers as well as all other organic fuel-consuming equipment) should be full at the outset

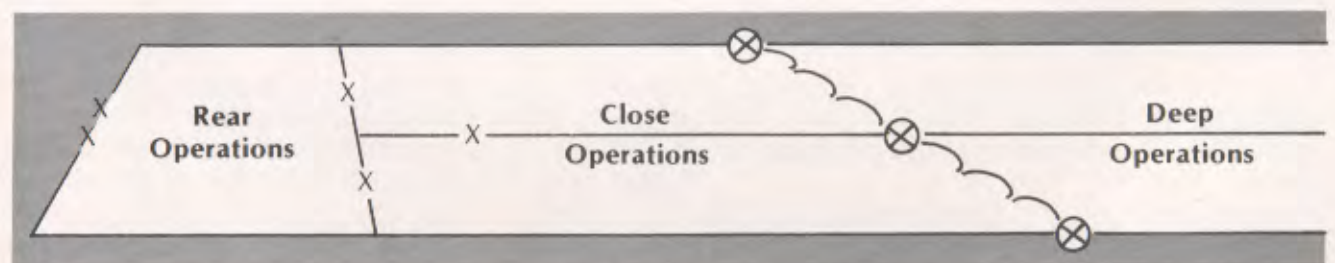
of the operation. Adequate supplies of the various types of class III products (motor gasoline and diesel and aviation fuel) should be available for refueling. Planners should consider methods to increase fuel-carrying capacity or reduce consumption, or to tailor the force to use only one type of fuel. In structuring the combat service support force, planners should consider the equipment and trained personnel needed to draw fuel from damaged vehicles, storage sites, and petroleum terminals (friendly and enemy) and to test and use captured stocks.

Planners should also ascertain and accommodate the equipment readiness levels desired by the commander. The deep operations maneuver force should be given priority for repair of equipment and stockage of prescribed load list and authorized stockage list items. Maintenance collection points should be planned and established along the routes for rapid repairs prior to crossing the line of departure or line of contact. Maintenance organizations that will accompany the force must be tailored to that force. Maintenance support teams should be positioned well forward with maneuver forces to fix or replace as far forward as possible and practical. Mission-essential-maintenance-only (MEMO) activities should be considered with prioritized repair-or-destroy-or-abandon time limits established once unit towing capabilities are exceeded.

Traditional personnel operations will probably be suspended during operations forward of the initial line of contact. The deep operations maneuver force should have personnel replacement priority to fill critical skill shortages. Weapon system replacement operations and force reconstitution have to be thoroughly planned and coordinated early between appropriate command and staff levels.

Initially, graves registration may be the only field service forward of the initial line of contact, and that will be extremely limited. Unit commanders are responsible for recovery and evacuation of remains and therefore should consider a number of options until evacuation is possible.

Required class VIII supplies, based upon projected casualties, should be carried with units. A medical



□ Three areas of engagement in division-level operations.

collection point should be established along the route to the start point to provide medical treatment from the assembly areas to the line of departure or line of contact. Medical holding capabilities within the force will be limited or nonexistent.

Transportation support for the maneuver force should be limited to the fewest possible vehicles in quantity and type. Planners should develop a detailed movement plan from assembly areas to the start points, with a traffic circulation plan for the maneuver force. Military police traffic control points are essential from assembly areas to the designated start points. Commanders should also consider using military police forward of the initial line of contact for control and security.

Finally, provision should be made for the command, control, and support of those organic elements not involved in operations forward of the initial line of contact. Equipment and personnel the maneuvering force leaves behind must be identified and redistributed for command and control as well as employment and support. A total projection of requirements based upon supply consumption and equipment loss factors should be accomplished before executing operations.

Phase II—Actions During Operations

Regardless of the required supply rate, consumption rates, basic load levels, and amount of class V stocks accompanying the maneuvering force, ammunition is one of the logistician's main concerns. Most supply efforts should be directed toward arming the system. Class V packages should be positioned with using units, and class V stocks should be positioned in ammunition transfer points behind the initial line of contact in unit-configured loads to reduce transportation and resupply delays.

A maneuver force resupplied during deep operations should have adequate personnel, storage capacity, and equipment to handle resupply actions. The ability to echelon combat service support within the maneuver units should be evaluated. If resupply of designated classes is required, combat, combat support, and combat service support forces should be diverted to reopen passage lanes, provide road security en route, and coordinate with Army and Air Force aviation elements to ensure a secure air corridor. Finally, depending on the type of vehicles used and the packaging of ammunition and other supply classes, materials-handling equipment will be required.

Fuel supply presents unique problems. Once projected usage rates are known, plans and procedures should be established for fueling and refueling the maneuver force. Detailed, well-coordinated plans

should be made for the delivery of fuel supplies from the rear of the initial line of contact to the deep operations force; these plans should include times, routes, security measures, and procedures for transloading and distributing forward of the initial line of contact. Furthermore, the benefits and risks associated with various modes of transportation should be analyzed.

Traditional maintenance support for deep operations may not be feasible. Priority should be for MEMO activities. Intermediate-level direct support maintenance support teams (e.g., tank support teams, mechanized infantry support teams, and artillery support teams), carefully selected accompanying authorized stockage list items, and controlled substitution should allow for this maintenance.

Major repairs or sizable recovery and evacuation will not be possible. Plans should include requirements for additional tow bars (such as one for every third vehicle) to allow recovery of equipment for mission requirements. If these procedures unacceptably delay the missions, the commander may consider destroying or abandoning equipment in place.

The processing and handling of casualties, enemy prisoners of war, and civilian stragglers should be well planned, since traditional personnel service support operations normally will be suspended during operations forward of the initial line of contact. Military police will be required to control the prisoners of war.

During operations, as before, plans should address proper disposition of remains awaiting evacuation. Adequate medical teams, based on projected casualties, should be planned to handle the wounded, who should be evacuated as soon as possible. Personnel replacement and evacuation of wounded or remains may not occur until the mission is completed and the land or air line of communication is reopened.

Transportation and movement control will be extremely difficult. Resupply should be conducted whenever possible, particularly during the hours of limited visibility. Transportation losses forward of the initial line of contact should be projected, and the status of the transportation assets should be closely monitored during the battle to ensure the continued prioritized movement of personnel, equipment, and supplies. Transportation assets should be centralized.

Planners should remember that combat service support units have thin-skinned vehicles, cumbersome machinery, limited weaponry and communications, and bulky stocks. Consequently, logistics units usually cannot travel as rapidly as the maneuver forces and cannot provide support while on the move.

Phase III—Actions After Operations

A true logistics challenge occurs during this final phase. While most planning occurs during the initial phase, the logistics planner should continually update those initial data and identify requirements based on actual needs and knowledge of future missions. Future missions may not have been clearly defined (e.g., "Be prepared to continue the attack"), or information may have been inadequate during early planning.

During this phase, basic loads should be reestablished as quickly as possible, as a drastic decrease will be noted. The resupply of unit basic loads will prove a challenge, as the force has moved forward of the initial line of contact. As future missions become clearer, provisions for new required supply rates should be determined and the controlled supply rate established.

The system should also be refueled. Resupply of unit fuel basic loads forward will be a challenge. When possible, fuels drained from unserviceable equipment or captured enemy fuel stocks should be used.

Maintenance backlogs should be identified and reduced to prepare for future operations. This may require air or land transportation of selected major assemblies, such as engines, to the task force. These actions support only the operational force and not replacement of actual equipment losses.

The wounded and sick should be evacuated as the operational situation allows. Remains should be evacuated from the unit area, or, if that cannot be done, emergency burial procedures should be followed. The land or air assets used to resupply the force may be used to evacuate casualties and remains. The timely flow of replacements to the maneuver force should continue during this phase.

When bulk supplies are received, whether transported by ground or air, additional assets will be required to process, move, handle, and distribute them throughout the maneuver force. These assets must include materials-handling equipment, tactical vehicles for transportation, and multiple supply points and routes. Moreover, logistics personnel will need to know where receiving units are located. Attention can then be directed toward packaging and prioritizing critical supplies for "throughput" over multiple routes directly to battalion-sized elements.

We have discussed some of the planning considerations for supporting deep operations conducted by maneuver forces. You should have gained an appreciation for the magnitude, complexity, and critical timing needed for logistics planning. Tactical and combat service support planners and operators must react quickly and make sound decisions as a totally

integrated team, for there is an inseparable relationship between logistics and combat operations on the airland battlefield.

Today, more than ever before, the Army's ability to sustain operations is important as an element of combat power. FM 100-5 clearly states that combat service support planning must accommodate the commander's intent and the requirements of the supported force during all phases of an operation. The plan should be developed concurrently with the tactical plan to ensure that the plan or concept of operation is not put in final form until logistics planners have determined the supportability and risks of the proposed courses of action. Normally, it is not difficult to quickly change tactical plans, sending troops off in new directions; however, adjusting combat service support plans for the altered tactical scheme is far more difficult.

Once the concept of operation for the supported force is determined, detailed logistics planning can proceed. Support requirements can be projected and plans can be developed to satisfy these projected operational and tactical requirements. The development of sound tactical standing operating procedures, unit battle drills, and contingency plans will greatly assist the logistics staff officer's planning efforts and the maneuver force's execution. When plans, procedures, and battle drills are comprehensive, only modifications are required to accommodate specific requirements or situations. In any case, the planning effort should be concentrated on those areas critical to successful mission accomplishment. Combat service support planners should continually ask themselves, "Have I supported the mission?" and "What are the associated risks?" **ALOG**

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Leader's Fiscal Responsibility

by Lieutenant Colonel Kent E. Kraus

Our Nation's leaders have become increasingly interested in the subject of fiscal responsibility within the military departments. Interest has sparked action: creation of a Senate subcommittee to overwatch defense spending; creation within the Department of the Army (Office of the Deputy Chief of Staff for Logistics) of a special office to review prices of goods and services; tightening of regulations concerning competition in contracting; and adverse action against major contractors, contractor officials, and military commanders who are not fiscally responsible. The Government Accounting Office and service audit agencies have been directed to devote up to 70 percent of their resources to investigate use of scarce resources, primarily funds. Senior Army leaders, including the Vice Chief of Staff, have placed responsibility for wise use of resources directly on commanders. A number of conclusions can be drawn from these actions.

Commanders, activity directors, and operating managers must be personally aware of the fiscal implications of their decisions. The attitude that the fiscal element should be transparent to operating units and activities is irresponsible and professionally hazardous.

We must recognize that the wise use of resources is not only a means to an end (accomplishing the mission) but also an end in and of itself. In the past, leaders have been evaluated only on the basis of accomplishments. Too frequently we have viewed economies and efficiencies only as a means of accomplishing more with a given "pot" of resources. If the tasks perceived to be essential by commanders and activity directors were resourced, then little attention was placed on efficiency. That attitude is now professionally hazardous.

Leaders and operating managers must ensure that each task is cost effective. Even when the task clearly contributes to mission accomplishment, leaders should ask, Is it absolutely necessary? Is there a significantly cheaper way to do almost the same thing? Or is it just too costly? If the task is performed, leaders must insist that it be performed efficiently.

Program and activity directors and operating officials must do more than merely decide if and how funds will be used; they must also press for timely execution and *monitor disbursements* so that savings realized by competitive procurement and execution efficiencies can be identified and reapplied while funds are current.

More and more, the fiscal track record is being used at all levels to determine funding. Congress specifically cited lost fiscal year 1984 obligation authority as a reason for eliminating real growth in the fiscal year 1986 Defense budget. Even though just 1 year ago Congressional leaders of both parties supported growth in defense spending, now neither party supports real growth. The Army advised the major commands that their fiscal year 1984 deobligations were the basis for fiscal year 1986 decrements.

Auditors, the Army Criminal Investigation Command, and other overwatch activities will focus on the methods and procedures used to allocate and reallocate resources and on programs established to monitor the efficiency with which resources are used.

Most of the foregoing trends and conclusions are obvious. But some leaders and managers (perhaps because they have heard it before, or consider it "bean counting," or cling to the philosophy "seize the objective at any cost") are not interested or claim not to have the time to exercise fiscal responsibility. Those attitudes are out of step. We need to voluntarily get back in step now or someone will pull us out of the formation later.

ALGG

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Measuring Maintenance Ca

For years combat arms battalions have had methods of evaluating the training status and capabilities of their special platoons. Whether the methods be called small unit evaluations, Army training and evaluation programs (ARTEP's), or platoon tests or competitions, these devices highlight training strengths and weaknesses and identify collective unit training needs. These evaluations usually focus on scout, mortar, and even medical platoons. Combat service support platoon and section evaluations, however, are normally conducted only in conjunction with annual company, battalion, or task force ARTEP's and are often the only chance commanders have to assess the combat capabilities of their combat service support units.

Maintenance sections, in particular, seldom under-

go small unit evaluations. Many commanders are satisfied with a yearly ARTEP evaluation, while others adopt the attitude that their units are evaluated every day by their performance on the deadline report.

This mentality, combined with a tendency for maintenance sections to sometimes be less than completely tactical, can give commanders a false impression of their units' sustainability in combat. For example, how often do you hear these remarks: "Sir, I gotta use white light for safety reasons," or "If we have all the security you want, these vehicles will never get fixed!"

The 3d Forward Support Battalion, 3d Brigade, 4th Infantry Division (Mechanized), at Fort Carson, Colorado, developed a battalion maintenance sec-



pability

by Major James A. Dunn, Jr.

tion small unit evaluation exercise after reviewing a similar exercise conducted by the 2d Battalion, 34th Armor, for its line company maintenance sections. That exercise was to give the battalion's maintenance sections the same field training received by its combat special platoons.

The brigade devised a special evaluation, using the company maintenance team ARTEP mission training plan as the basis. This situational training exercise, modified from the ARTEP training mission plan, provided a framework for the evaluation. Coordination between brigade trainers and the logistics operations officer and liaison officer from the forward support battalion resulted in the series of events to be evaluated, shown in the chart on the right.

The scenario adopted was designed to evaluate the section's ability to perform expected combat maintenance tasks, such as recovery, troubleshooting, operator maintenance, and tactical survival skills. The entire 20-hour evaluation was conducted under simulated combat conditions with the majority of the maintenance tasks conducted during darkness. Noise and light discipline, long a scourge of field maintenance, was stressed, along with security; mission-oriented nuclear, biological, and chemical protective posture; land navigation; and camouflage and concealment. The evaluation exercise took place in the field with no "admin" breaks.

Evaluators were selected primarily from the forward support battalion, since their maintenance supervisors and direct support noncommissioned officers (NCO's) possessed a wealth of field maintenance experience. An NCO from the brigade acted as the tactical evaluator to judge the section's abil-

Time	Event
1200	Occupy assembly area, conduct precombat preventive maintenance checks and services.
1300	Tactical road march.
1500	Occupy assembly area, prepare for maintenance operations.
1700	Locate and recover a mired M60A3, troubleshoot, and repair.
2000	Locate and recover an M35A2 2 1/2-ton truck under fire, repair.
2300	Locate and recover an M151A2 1/4-ton truck and repair it using field-expedient techniques.
0200	Locate and recover an M113A2, pull and replace a powerpack.
0600	Conduct oxyacetylene cutting.

□ Maintenance evaluation events.

ity to perform its missions without violating tactically sound doctrine and techniques. The chief evaluator—an ordnance officer with maintenance experience at operator, organizational, and direct support levels—was provided by the battalion. This officer had participated in the development of the evaluation and had conducted numerous coordination meetings with the brigade training staff.

Operational vehicles were inspected by the evaluator-NCO's. The same maintenance problems were then induced into each of these vehicles, and each maintenance section undergoing evaluation had to solve the same vehicle problem. The vehicles were then positioned on the "battlefield" for the maintenance section to locate, recover, and repair. Battalion maintenance sections must be able to repair not only vehicles of their parent battalion but also those of cross-attached combat, combat support, and combat service support units. For the evaluation exercise, a variety of "deadlined" vehicles and equipment was used, including the major combat and wheeled vehicles usually operated by a task force.

The maintenance section was instructed to deploy and link up with its evaluators at a specific map-grid location. At that linkup point the battalion motor officer was given a fragmentary road march order with a mission to occupy an assembly area

some 15 kilometers away. A precombat check and preventive maintenance checks and services were conducted at the linkup point while the motor officer prepared his order. The road march was interrupted by "enemy" indirect fire before the unit reached its assembly area.

Once tactically arrayed in its assembly area, the section received its missions by FM radio. Recovery vehicles then had to navigate to specified coordinates and perform appropriate maintenance actions when they arrived. Some of the missions were to take place "behind friendly lines" while some were "under fire," requiring the crews to use covering smoke and to call in friendly indirect fire. Vehicles were either repaired on the spot or evacuated to the assembly area, mimicking the retrieval of vehicles from an organizational maintenance collection point, where repair work began. While the first mission's vehicles were being repaired, another mission was received by radio and begun. This general scenario continued for the duration of the evaluation. Major tasks that were evaluated and the maximum points that could be earned for performing each are shown in the chart on the right. Scores for each mission were tabulated and the section that achieved the highest evaluation score at the end of the exercise was given appropriate recognition in a brigade ceremony.

The entire maintenance mission cannot easily be

□ This mechanic's skill is tested in performing a dash-20-level inspection on an M113 powerpack.



replicated in an evaluation exercise. Although considered, it was decided not to evaluate every maintenance function, such as prescribed load list management, maintenance management, or maintenance recordkeeping. The entire section did

not deploy nor was all its equipment taken to the field. Some maintenance services were continued in garrison, but the majority of the section was deployed. Other iterations of the evaluation could be run to include other functions, tasks, and personnel.

It is difficult to portray in a 20-hour exercise the density of repairs that could be expected in combat. Battle damage cannot be fully replicated nor can the number of damaged vehicles be simulated without creating tremendous overhead support requirements.

To keep the evaluation to less than 24 hours, only four vehicles were used as "deadlined" vehicles to be repaired. A larger number and variety of vehicles would require a longer evaluation or a series of evaluations.

The logistical and tactical organizations both benefitted by this exercise from several perspectives. The maintenance section derived a quality technical evaluation of its ability to detect and correct maintenance malfunctions in a tactical environment. The expert evaluator-coaches from the forward support battalion were able to focus their attention on the section and evaluate its performance while recommending system improvements. This improved the section's technical competence and gave the evaluators an opportunity to observe the problems experienced by organizational-level mechanics.

The maintenance section also benefitted from the enforced tactical scenario that ensured that all noise and light, camouflage, and security disciplines and concepts were followed. By assuring that the section "played by the rules," its likelihood of survivability in combat was improved.

Commanders, too, gathered an appreciable amount of information about the training and combat capabilities of their maintenance sections. They will be able to use these data in planning future training.

The maintenance section evaluation is a useful exercise that combines the abilities of the forward support battalion and the battalion or task force maintenance sections. This method of evaluation is highly recommended for use, both as an indicator of current performance and as a tool for shaping future training.

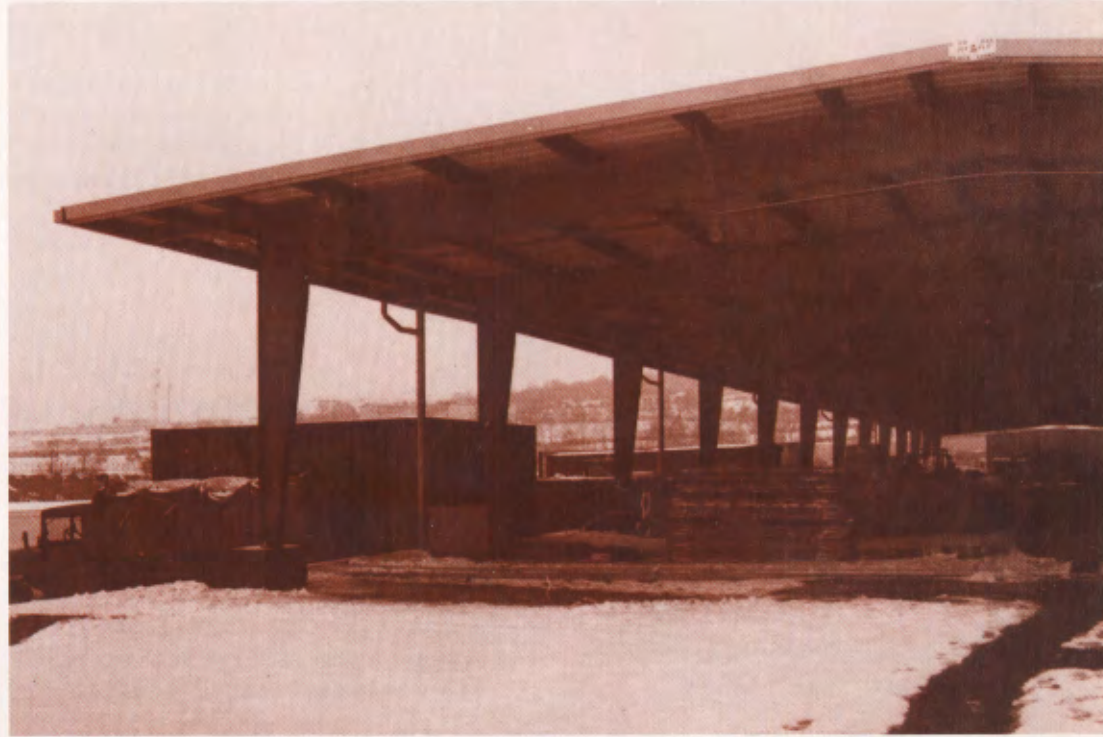
ALCG

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Major Tasks	Points Per Task
Perform preventive maintenance checks and services	26
Perform diagnostic maintenance	14
Maintain local security	8
Perform field-expedient procedures	8
Recover contaminated equipment	12
Provide lift support	8
Recover disabled vehicle (not under fire)	10
Recover disabled vehicle (under fire)	12
Perform oxyacetylene cutting procedures	10
Request maintenance assistance	6
Prepare for maintenance activities during night operations	12
Occupy and conduct assembly area activities	18
Perform and support tactical roadmarch	14
Conduct precombat checks	20
Establish and maintain radio communications	10
Camouflage vehicles and equipment	6
Occupy covered and concealed position	12
React to indirect fire	8
Report bombing, shelling, mortar, rocket, and aircraft fire	14
Issue a warning order	10
Issue an operations order	10
TOTAL	250

□ Major maintenance tasks evaluated and points assigned for each.

New Warehouse Keeps Division Rolling



The lights never go out in the 8th Infantry Division's new class IX warehouse in Baumholder, West Germany. Every day, huge flatbed trucks maneuver in and out of the dock area loaded with replacement parts from the continental United States or depots within U.S. Army, Europe. Around the clock, supply storage specialists and civilian warehouse workers break down shipments for either storage or direct delivery to the unit. Several thousand spare parts are pulled or stocked daily in this, the main repair parts storage and issue facility for the division.

The new \$1-million class IX warehouse of C Company, 4th Support Battalion, greatly improves the receiving, shipping, and storage of supply parts for the division. With the exception of aviation, missile, and medical parts, every repair item that a conventional mechanic in a mechanized division uses is processed through the warehouse—which total over 8,000 different items. Parts ranging from small bolts to huge gun tubes for M60 tanks are maintained for issue. If an item is not in stock, it is ordered from depots in the states.

The most important advantage of the new warehouse is its consolidation of storage and issue activities. With all stocks centralized in one building, there is considerably more space and over 1,300 new

there is considerably more space and over 1,300 new storage locations. Workers are more productive and forklifts consume less fuel with shorter distances to travel. One quality control inspector commented, "Now it's much easier to keep track of things because everything's in the same building. I can accomplish much more in a day."

The spacious warehouse is equipped with state-of-the-art safety equipment such as smoke detectors, automatic sprinklers, and a quick shower system. Other improvements include better lighting in the dock area, a controlled room for sensitive items, and a cold storage room for batteries. The life of dry-cell batteries is greatly extended when they are refrigerated at a constant temperature. In the old warehouse, which was not refrigerated, their shelf life was reduced by half.

The additional space in the new warehouse has allowed the division to expand its fuel and electric repair section as well as its battery shop. Previously, they had occupied the same area as the direct exchange operation, producing inefficiency and congestion. Also in the new building are an expanded parts-receiving section and the excess turn-in point.

The company has its own fleet of MILVAN's (military vans), which are used to store over 75 percent of the small parts normally needed by 8th Division units. When the division deploys, the vans go along.

Before the new warehouse opened, the vans were parked outside without access to lights and heat. Workers climbed in and out of the vans using ladders, holding flashlights so they could find the steps. Once inside the van, they had to search for parts by flashlight.

The new warehouse includes an aluminum shed that protects the vans from the weather. The shed's dock is the same height as the van doors, facilitating loading. The dock includes electrical outlets for lights and heaters. The addition of heat and lights in the vans has increased worker productivity. Now that the vans are protected, the parts inside are better protected too.

The 8th Infantry Division is still adjusting to the added features of the new facility, a great improvement over the old warehouse.

ALOG

This article is based on a story by Tom Larscheid, editor of Baumholder's Champion Times.



□ An aluminum shed protects MILVAN's from inclement weather and contains outlets for heaters and lights (above). Inside the new class IX warehouse, a soldier checks an invoice for a shipment of tank tracks (left); in another area, tent poles are prepared for shipment (far left). The new shipping and receiving area is now under cover (above left).

Procuring Nondevelopmentmen



When off-the-shelf commercial items will meet the military's need, acquisition time and cost can be saved.

You have often heard the expression "time is money." In today's realm of military preparedness, both time and money are equally important in acquisitions and procurements. In providing today's Army with its materiel needs, the traditional 8- to 11-year item development cycle is too long and too costly. Today's rapid advancements in technology would mean that materiel developed under traditional methods would be nearing technological obsolescence by the time it could be fielded.

One solution to the "time and money" problem in providing materiel to the Army is the procurement of what we call *nondevelopmental items*. These are products that can be purchased off the shelf or slightly modified and that are built to commercial or military standards and will satisfy military requirements. Nondevelopmental items can be procured fairly quickly, often without incurring research and development time and costs. Many military item needs can be filled by U.S. and foreign industry.

General Richard H. Thompson, commander of

tal Items

by Theodore J. Klein, Ph.D., and Kenneth A. East

the Army Materiel Command (AMC), emphasized shortening the acquisition cycle in a recent speech. One strategy for doing this, he said, is in the increased use of nondevelopmental items. General Thompson said—

We can no longer afford to design equipment to meet the entire realm of environmental possibilities, especially if the equipment will encounter those conditions only 10 to 15 percent of the time. We must start designing for the “expected” rather than routinely designing for the “worse case.” We must question and tailor specifications that don’t make good sense in meeting product requirements.

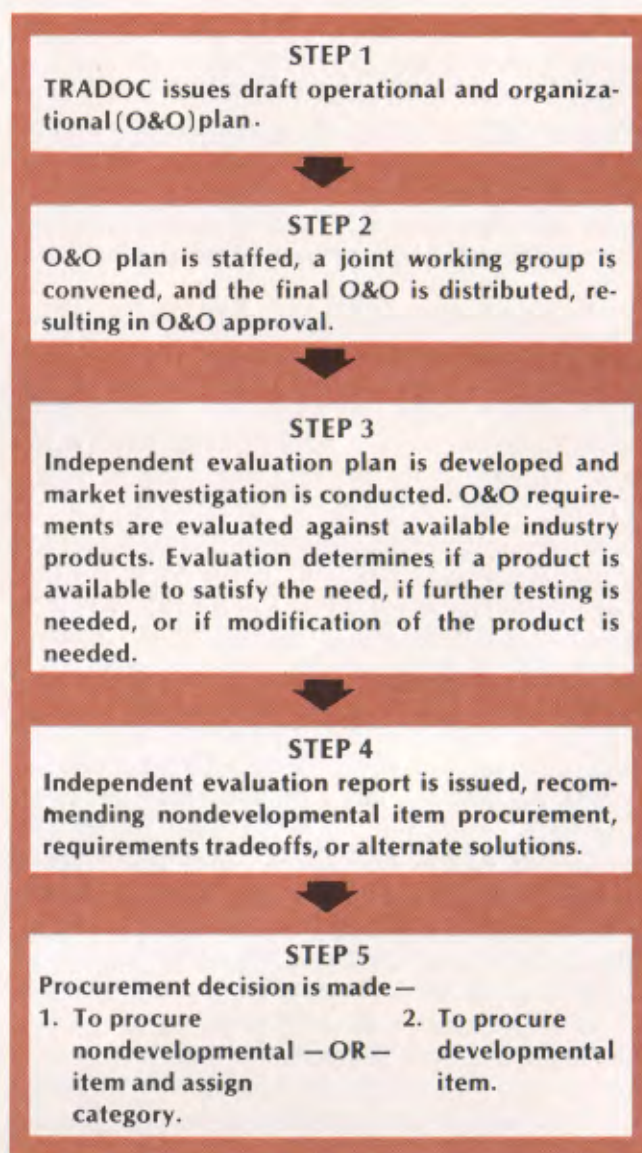
The goal of nondevelopmental item acquisition is not only to decrease the time from the identification of requirements to the fielding of the item but also to field state-of-the-art equipment with full logistics support in more affordable quantities.

The Army Communications-Electronics Command (CECOM) at Fort Monmouth, New Jersey, has adopted nondevelopmental item procurement as its first choice in providing communications and electronics equipment for the Army. A description of the methods we are using at CECOM may assist other commodity commands in furthering their use of the nondevelopmental items program.

In all new acquisitions or reprocurments at CECOM, nondevelopmental items are being considered. Nondevelopmental item acquisition will permeate all phases of the acquisition cycle, beginning with the concept exploration. The success of a nondevelopmental item procurement depends heavily on making the right decision at the end of the concept exploration phase. That right decision depends on whether or not the marketplace can offer the item in adequate quantities required and with the capabilities essential to meet the military need. A timely, comprehensive market investigation is essential. Preliminary market information is necessary in order to evaluate the Army Training and Doctrine Command’s (TRADOC’s) draft operational and organizational plan in terms of available products that would potentially meet the requirement.

The next step of the method brings together the combat developer (TRADOC), the materiel developer (AMC), the logistician, and the independent evaluator to produce an independent evalua-

tion plan that identifies all essential and critical requirements and features of the item. This plan includes logistics supportability, technical performance, and environmental requirements. This step, in conjunction with the market investigation, determines if nondevelopmental item procurement is viable, if additional item test data are needed, and whether or not modification of the item is required. Results of this determination will be documented in the acquisition strategy.



□ Steps in nondevelopmental item procurements.

Of course, nondevelopmental items are not the answer to every requirement; for example, there may be a unique military need for communications equipment with an antijamming capability that cannot be filled from the marketplace. If, however, the decision is reached that a nondevelopmental item can meet the need, then the procurement will be assigned to one of the following categories—

- Category A is an item of equipment to be used in the same environment as that for which it was designed.

- Category B is an item to be used in an environment different from that for which it was designed. Further testing and possibly some modifications may be needed.

There is a third procurement strategy that can be considered nondevelopmental. This strategy uses proven components that are integrated into the final configuration of an item. Following this strategy, a dedicated research and development effort is involved, wherein integration of the components must be thoroughly tested and proved to reliably work together to meet the total system requirements. When an end item is procured in this manner, manuals or other software to support its use must also be provided.

In pursuing nondevelopmental item procurement, CECOM established the Nondevelopmental Item Advocate Office to structure the process and to identify and assess relevant technology and products available in the marketplace. The office will maintain a comprehensive data base of off-the-shelf items through which to assist the engineering staff in evaluating operational and organizational plans and requirements documents. To supplement the data base, the office is acquiring knowledge of current research and development programs of CECOM, other commands and services, and U.S. and foreign industry.

Logistics supportability is an essential determinant in the selection of a nondevelopmental item. The acquired product must be logistically supportable when it is fielded and must meet the user's needs at a reasonable cost of ownership. Integrated logistics support managers must be innovative and resourceful in tailoring support for these items. For example, the small unit radio will be fielded in two versions: the AN/PRC 126 version is "field-hardened" for use by infantrymen and rangers; and the non-hardened small unit radio version is for use by combat support and combat service support personnel. The item manager must determine in cases like this whether Government, contractor, or a mix of Government and contractor logistics support is the most cost effective.

The recently awarded mobile subscriber equipment contract provides for a mix of logistics support. Military maintenance personnel and supply channels are used to support the equipment in the division and corps areas. Contractor-operated regional support centers provide supply and maintenance support in the rear of the corps.

The result of a shorter acquisition cycle and the earlier fielding of an item may make it necessary to rely on commercial supply and distribution systems for technical training and logistics support in initially fielding nondevelopmental items, and, in some cases, for the item's entire life cycle. In adopting the nondevelopmental-items approach to procurements, close scrutiny of the processes are essential for success. The lack of configuration control, for example, can adversely affect parts stockage and logistics supportability.

The market investigation is crucial and requires the active participation of the whole logistics community if meaningful results are to be realized. The market investigation should include the experience of other governmental and commercial users of the item or items being considered. Technical data tailored to the specific acquisition must describe the essential integrated logistics support requirements necessary to satisfy the stated needs.

In essence, all disciplines—combat developer, materiel developer, logistician, and evaluator—must work closely as a team to capitalize on the advantages of selecting and procuring nondevelopmental items.

ALOG

Theodore J. Klein, Ph.D., is with the Communications-Automatic Data Processing Center, Army Communications-Electronics Command, Fort Monmouth, New Jersey. He assisted in establishing the Nondevelopmental Item Advocate Office. He holds a B.S. degree in electrical engineering from Iowa State University, Ames, Iowa; an M.S. degree from Rutgers, the State University, New Brunswick, New Jersey; and a Ph.D. from the Polytechnic Institute of New York in Brooklyn.

Kenneth A. East is chief of the Integrated Logistics Support Office at CECOM. He holds a B.S. degree in physics from Long Island University, Brooklyn, New York, and a master's degree in operations research from the Polytechnic Institute of New York.

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- AR 600-8**, Military Personnel Operations, 1 August 1986.
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- AR 600-82**, The U.S. Army Regimental System, 1 May 1986.
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ARMY REGIMENTAL SYSTEM DESCRIBED

Recently published AR 600-82, The U.S. Army Regimental System, describes the Army regimental system and the management of soldiers under that system. Separate chapters address policies for combat arms, combat support, combat service support, and special branch personnel; and regimental enhancements such as heraldry, accoutrements, and museums.

MAINTENANCE POLICY CHANGES SET

Revised AR 750-1, Army Materiel Maintenance Policies, contains several refinements in maintenance management policy.

The revision permits any qualified persons, not just officers, to be maintenance supervisors; emphasizes design-for-discard of repair parts to reduce organizational-level maintenance; and deletes the requirement for preventive maintenance checks and services on TDA end items that are permanently disassembled for instructional purposes.

The changes are included in Maintenance Management UPDATE Number 9.

LAUNDRY OPERATION POLICIES UPDATED

The first UPDATE-format edition of AR 210-130, Laundry and Dry Cleaning Operations, incorporating change 2, has been published.

The change clarifies instructions for disposing of excess equipment and for use of laundry and dry cleaning facilities by Reserve component personnel.

ALGG

FLEX Pallets Aid Division

by Captain Glenn Geoghegan

The 1st Armored Division has found a way to improve logistics mobility from "tooth to tail." The forward logistics exchange (FLEX) pallet system holds the promise of greatly increasing the division's capability of meeting its supply requirements.

The evolving concepts of deep battle, around-the-clock fighting, and rapid deployment are radically changing the ways logisticians must resupply the combat forces. When exploiting combat successes, the combat forces require rapid delivery of sustaining supplies. The support personnel must be capable of rapidly displacing large quantities of supplies and equipment, operating under conditions of darkness or limited visibility, and quickly dispersing if threatened by nuclear or chemical attack.

These requirements encouraged the 1st Armored Division to pursue development of the FLEX pallet system. The FLEX pallets were initially viewed as replacements for some wornout shelving when development was begun in the Spring of 1984. The pallets quickly exceeded initial expectations, and their development and use became a high-priority project in the division. The pallet concept was submitted to the Department of the Army's SMART program and was registered in it in December 1984.

A purchase contract for FLEX pallets was signed

□ External dimensions of FLEX pallets are the same, but internal compartments (below) can be adjusted. FLEX pallets can easily be lifted by any materials-handling equipment (right). Supply operations are quickly reestablished when supplies are moved by FLEX pallet (far right). Special FLEX pallets are available for palletizing cans of water, fuel, or ammunition (extreme right).



in late 1985 and the division is now testing their use. Initial results indicate that FLEX pallets provide solutions to some vexing supply problems. The FLEX pallets initially purchased were used during Reforger '86 and found to provide the capability for supporting mobile forces.

FLEX pallets are a series of uniformly sized, relatively lightweight metal storage containers that can be moved by forklifts, wreckers, helicopters, cargo aircraft, or other battlefield materials-handling equipment. The pallets are about the size of a double-pedestal desk. All FLEX pallets are mounted on built-in skids that permit easy movement by forklift, and each has built-in shackles on top for easy lifting. The lifting shackles also lock onto the skids of a pallet stacked above it, so several pallets can be stacked in building-block fashion and lifted together. Thus, supplies become quite mobile. Special FLEX pallets that will accommodate oversized loads are also available.

FLEX pallets increase the efficiency of storage facilities and transportation assets. Vertical storage space can be fully used when supplies on the bottom are protected inside the stacked pallets. Trucks can be quickly loaded and off-loaded for faster turn-around times.

Logistics Mobility

When division maneuver units use the FLEX pallets, fewer organic trucks are needed, releasing these critical assets for other missions. Each company in the 1st Armored Division was issued 12 FLEX pallets in which to store tools and its prescribed load list (PLL) items. Twelve FLEX pallets fit on a 5-ton cargo truck with enough extra room for an aisle down the middle of the truck bed. While in garrison or at a field site for an extended period, the pallets can be quickly offloaded, freeing the truck for other mission use. The “hooches” that most motor sergeants use to store and transport the PLL do not offer this flexibility.

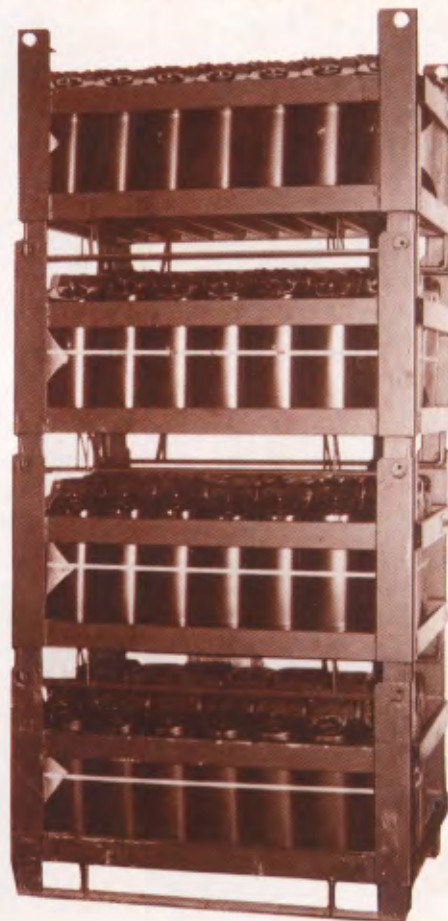
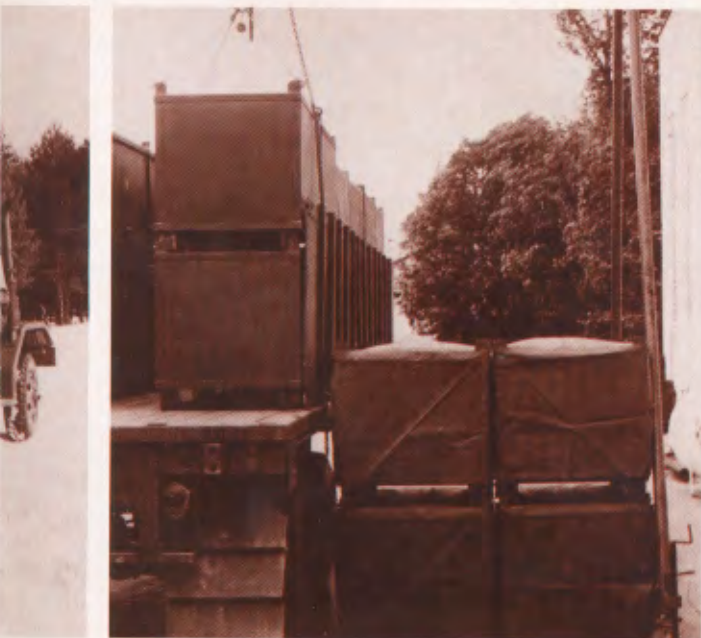
When the division’s supply units use FLEX pallets, available trucks can be completely filled. Load planning is simplified because the pallets are like building blocks. For example, knowing that 28 FLEX pallets fit on a 30-foot M871 trailer allows the unit to calculate the exact number of trailers needed to move its supplies. The converse is also true: if only 5 trailers are available, the unit knows that only 140 FLEX pallets can be moved in one lift and can prioritize the supplies to be moved.

An important feature of FLEX pallets is their compatibility with so many modes of transportation. Since divisions don’t have enough vehicles to move

all their combat supplies in one lift, they have to plan to use other means of transportation. The length and width of FLEX pallets match the dimensions of European commercial pallets for efficient use of host nation transport.

FLEX pallets quickly link into packages that are ideal for rapid resupply by air. Experimenting with aerial resupply, the 1st Armored Division had Black Hawk helicopters fly several missions with sling-loaded FLEX pallets. FLEX pallets are also compatible with the Air Force’s 463L pallets, which will hold 10 FLEX pallets. During Reforger ’86, FLEX pallets were used to deliver supplies by low altitude parachute extraction from a C-130 aircraft.

One of the main concerns with the tactical mobility of supplies is finding what you want after you’ve moved the supplies. Supplies in FLEX pallets were not lost when moved during Reforger. The pallets don’t require any reconfiguration for movement: just close the lid and load them on a truck. A row





□ FLEX pallets are ideal for aerially resupplying remote areas of the battlefield.

of FLEX pallets in a warehouse can be transferred to a truck, moved to their destination, and set up in their original configuration. Efficient operations are quickly reestablished. If necessary, supplies can be retrieved from the truck while in transit. FLEX pallets provide an ideal means of arranging supplies into preconfigured "push" packages, too.

Ammunition storage and handling problems can be reduced by using ammo FLEX pallets. In cramped bunkers, FLEX pallets of ammo help make full use of vertical storage space. They greatly reduce the time and effort required to move the ammunition loaded on them. Using a pallet jack, ammo pallets can be rolled from the bunker to a wrecker that lifts the stacked pallets onto a waiting truck. Our artillery units must now form a human chain and manhandle ammunition from the bunkers onto trucks.

Another special FLEX pallet with great promise is the petroleum, oils, and lubricants (POL) pallet that holds fourteen 5-gallon gas cans. With more equipment now using diesel fuel, scarce fuel pods must be converted to storing diesel. Using FLEX POL pallets filled with cans of MOGAS can help

meet the division's reduced requirements for gasoline. These POL pallets can also be delivered by air.

The distribution of field rations can also be improved by using FLEX pallets. Rations can be shipped forward from field-ration breakdown points and units can exchange empty pallets for full ones.

The introduction of FLEX pallets into the 1st Armored Division significantly improved the productivity of our logistics units. When supplies are stored and moved more efficiently, rapid deployment and displacement is assured. The division's logistics "tail" becomes the combat multiplier that our fighting forces require.

ALOG

Captain Glenn Geoghegan is commander of E Company (Missile Maintenance), 4th Support Battalion, 1st Armored Division, in Germany. While assigned to the Division Materiel Management Office, he was one of the action officers for FLEX pallets. He holds a chemical engineering degree from Drexel University, Philadelphia, Pennsylvania.

ARMY INCREASES CONTRACT COMPETITION

In fiscal year 1985, the Army awarded \$14.9 billion of its \$31.7-billion procurement budget, nearly 62 percent of all its contract actions, through contract competition. The amount exceeded the Army's goal of competitively contracting 46 percent of its procurement budget.

The Army's progress in reducing sole-source contracting was among the topics addressed at the second annual Competition-in-Contracting Conference, held this Summer at Fort Belvoir, Virginia. Other topics included industry views on competition in contracting and the reorganization of installation contracting offices into directorates of contracting under the standard installation organization.

The Army's goal for fiscal year 1986 was to award 50 percent of the dollar value of its procurement budget through competitive contracting.

NATO DEVELOPING COMMON TEST PROCEDURES FOR EQUIPMENT

A NATO working group is developing a standardization agreement (STANAG) on automotive testing of wheeled and tracked vehicles. The STANAG will incorporate 14 international test procedures for tracked vehicles, worked out by the United States, the United Kingdom, West Germany, and France.

The procedures are the first results of a memorandum of understanding on international test standardization signed by the four nations in December 1983. The international test standardization program is intended to develop test procedures that will be used by two or more nations so that those nations can procure the same equipment without conducting redundant testing.

Besides the four-nation procedures on automotive testing, the United States and West Germany have developed approximately 70 test procedures on a bilateral basis. These procedures govern the testing of tracked vehicle automotive systems; main battle tank fire control systems; missiles; large-caliber weapons and ammunition; analog and digital communications systems; radar; nuclear, biological, and

chemical defense; and intrusion detection systems. The United States and the United Kingdom have also developed two draft STANAG's on safety testing of artillery and mortar ammunition. These bilateral agreements will probably form the basis for future four-nation test procedures and NATO STANAG's on test standardization.

READINESS OFFENSIVE FOR SUPPORT VEHICLES BEGUN

The Army Tank-Automotive Command (TACOM) has established a "Readiness Offensive" to improve the operational readiness of the armored vehicle launched bridge (AVLB) and the combat engineer vehicle (CEV).

A TACOM spokesman said that both vehicles are important combat multipliers which enhance mobility on the battlefield, and that both must continue to perform their support roles until they are replaced, perhaps in 10 to 15 years.

As part of this effort, the project manager for M60 tanks has published a guide for improving the operational readiness of the AVLB and CEV. The guide contains maintenance tips, employment concepts, technical assistance phone numbers, and advance information on product improvements for both vehicles. It may be obtained through local logistics assistance offices or by writing—Commander, U.S. Army Tank-Automotive Command, ATTN: AMCPM-M60, Warren MI 48397-5000, or calling AUTOVON 786-6856.

LOGISTICS CENTER TEAM HELPS RESERVE COMPONENTS

The Army Logistics Center, Fort Lee, Virginia, has established a team to visit Reserve component units and assess the effectiveness of logistics training, doctrine, organization, and systems. Known as the integration and standardization team, Reserve components (IST-RC), it will visit and assist logistics units at the integrating level, including theater army area commands, corps support commands, division support commands, and area and corps support groups. The Center's associated schools—the Quartermaster, Ordnance, Transportation, Ordnance Missile and Munitions, and Aviation Logistics Schools—already have branch training teams (BTT's) that visit units at and below brigade level. The IST-RC will complement the Center's existing integration and standardization program for the Active Army.

During its visits, the IST-RC will assess the courses, doctrine, organizational structures, and systems developed by the Army Training and Doctrine Command; assist in solving specific problems; and gather ideas for better ways of performing logistics missions. Visits are not unit evaluations but are a means of determining if training and doctrine are adequate to prepare units to accomplish their wartime missions.

Information collected by IST-RC will be added to the logistics-lessons-learned data base. This automated compilation will enable the Center to track logistics problems from identification to solution and will provide a basis for implementing changes. Planners at the Center expect that issues surfaced by IST-RC will lead to improvements in training and doctrine.

For more information on the IST-RC, write—Commander, U.S. Army Logistics Center, ATTN: ATCL-TE, Fort Lee, VA 23801-6000, or call AUTOVON 687-1043 or commercial (804) 734-1043.

MORE OFFICER LOGISTICIANS NEEDED

The number of officer positions coded for skill identification 7Z, logistician, has increased as a result of a recent Army-wide review of authorization documents. Currently, approximately 850 lieutenant colonel and colonel positions in all components are coded 7Z, meaning they require officers with experience in more than one logistics function. Such positions include division G4, assistant chief of staff for materiel, director of logistics, selected logistics command positions, and key staff positions in depots and wholesale logistics agencies.

Officers awarded skill identification 7Z are part of the logistician development program. Eligibility is limited to majors, lieutenant colonels, or colonels who are graduates of an officer advanced course and have 12 months' experience in each of two or more logistics functions, including supply, maintenance, transportation, services, or procurement. Members of the program should complete the Logistics Executive Development Course at the Army Logistics Management Center at Fort Lee, Virginia. (In some cases, an academic degree or experience in the field may substitute for the course.)

Over 1,800 officers have joined the logistician development program since it was created in 1983. To apply, write—Commander, U.S. Army Military Personnel Center, ATTN: DAPC-OPG-D, 200 Stovall Street, Alexandria, VA 22332-0400, or call AUTOVON 221-5248 or -5210.



□ The Army Natick Research, Development, and Engineering Center has developed a device (shown above) that the individual soldier can use to purify contaminated fresh water in a nuclear, biological, and chemical environment. The soldier uses a small hand pump to pump water through a carbon filtering cartridge housed in a disposable plastic container. From this container, potable water flows directly into the soldier's canteen. Prototypes should be available by the end of fiscal year 1987.

ARMY PLANS CLOSER WATCH ON REUSED MATERIEL

In an effort to better control the reuse of excess materiel, Army officials are developing procedures for quarterly sampling of items withdrawn from Defense reutilization and marketing offices (DRMO's).

Currently, items are sometimes authorized for withdrawal from a DRMO for a specific purpose and are then used for another purpose. This practice

complicates materiel management and increases maintenance workload and operating costs. Quarterly sampling will enable commanders to monitor withdrawals from DRMO's to ensure that an item is used only for the purpose for which it is drawn.

When finalized, the policy for quarterly sampling will be included in a future revision of AR 710-2, Supply Policy Below the Wholesale Level. Procedures will be included in a revision of DA Pamphlet 710-4, Management of Excess Materiel and Materiel Returns, scheduled for publication later this year. In the meantime, commanders are encouraged to begin quarterly sampling as a normal part of their management routines.

'DRIVE' CHECKS VEHICLE READINESS

A recently developed testing program is helping to ensure that vehicles will perform reliably during deployment.

The program, called the deployability, reliability, integrity of vehicle estimate (DRIVE), places fully loaded vehicles under the stress of a tough road test. Captain Robert Stump and Chief Warrant Officer Jessie James of the 57th Transportation Company, 240th Quartermaster Battalion, Fort Lee, Virginia, developed the DRIVE program to augment preventive maintenance checks and services (PMCS) and the battalion's predeployment maintenance inspection.

Under the DRIVE program, vehicles to be tested must first achieve a 100-percent PMCS standard. Unit personnel then load the vehicle with cargo and make a brake safety test; take a special Army oil analysis program sample; steam-clean the engines to make it easier to detect and track problems; and top off, measure, and record all fluid levels. They then subject the loaded vehicles to a 250-mile road test, with scheduled checks for mechanical problems that might develop. (Maintenance and recovery support vehicles and personnel accompany the test vehicles to handle any maintenance problems.) At the end of the road test, personnel record fuel and oil consumption; engine power; oil pressure; engine, tire, transmission, and exhaust temperatures; and overall vehicle performance data and assign a reliability estimate. A vehicle must receive a 95-percent reliability estimate to pass the test.

The 57th has DRIVE-tested 30 vehicles to date and validated the reliability estimates in exercise Bold Eagle '86 (with a 2,000-mile round-trip convoy) and the Southwest Asia petroleum distribution system

operational project test. For additional information on the DRIVE program and procedures, call AUTOVON 687-3434 or commercial (804) 734-3434.

CAMOUFLAGE GOES MOBILE

The realistic combat conditions simulated at the National Training Center, Fort Irwin, California, demand that vehicles be ready to move on short notice. Rapidly removing camouflage netting is an important element in keeping a vehicle ready to roll, but desert heat, wind, and dust frequently make this a time-consuming struggle.

These conditions inspired Curtis G. Moore, first sergeant in B Company, 1st Forward Support Battalion, 24th Infantry Division (Mech), to devise a camouflage system that does not need to be removed when a vehicle is repositioned. Under his system, metal rods and brackets are welded to a vehicle's sides and back. Camouflage poles that support the netting fit over the rods. The netting is draped over the poles and anchored to the ground with pegs. When the vehicle must be relocated, the pegs are removed and the netting is rolled up and placed in the side and back brackets with a forked pole. The vehicle is ready to move in 8 to 10 minutes.

This system has been approved for use in the 24th Infantry Division and is being considered for Army-wide use under the supply and maintenance assessment and review team (SMART) program.



□ Camouflage netting resting in welded brackets makes this vehicle ready to be moved or concealed.

ALGG EMPHASIS

(Continued from page 1)

COMBAT VEHICLE SAFETY SOUGHT

The Army Tank-Automotive Command and the Mainz Army Depot are developing safety kits for armored vehicles in Europe. The kits will bring all Army combat vehicles in Europe closer to meeting West German safety standards. Eventually, the kits will be installed on all combat vehicles worldwide.

MRO TIME CUT

A new software system recently adopted by the Army's three area-oriented depots has reduced the time needed to produce materiel release orders (MRO's) by 25 percent. Materiel release orders are the documents that depot employees use to pull, pack, and ship stock. Cutting the time for producing the orders results in reduced shipping times and thus better support for customers. The new system was designed by the Logistic System Support Activity at Chambersburg, Pennsylvania, and replaces an outmoded system developed in the late 1960's.

LAST DLOGS REPLACED

The Army has replaced the last operational division logistics system (DLOGS) with the direct support unit standard supply system (DS4) and the standard property book system (SPBS). The decentralized automated service support system (DAS3) also replaced the DLOGS hardware, the Sperry-Univac 1005. The last DLOGS supported the 47th Infantry Division, Minnesota Army National Guard.

NEW LANDING CRAFT BOUGHT

The Army has contracted for a new utility landing craft (LCU) that is the first major Army watercraft designed according to Army specifications. In the past, the Army has bought vessels designed for the Navy. The new 2000-class LCU is wide enough to accommodate the Army's largest rolling stock and will be used for logistics-over-the-shore operations. Under the contract with Lockheed Shipbuilding Company of Seattle, the Army will receive 25 vessels over 5 years, with an option to purchase 15 more.

LOG COLONELS GET STARS

Eight of 57 colonels recently nominated for promotion to brigadier general are from logistics branches. They are Colonels Larry R. Capps, Frank Cunningham III, and Joseph Raffiani, Jr., of the Ordnance Corps; Thomas W. Robison, John M. Thomson, and Paul J. Vanderploog of the Quartermaster Corps; and Joseph T. Ellis and James D. Starling of the Transportation Corps.

**LIF USERS
GET HELP**

The Army Logistic Control Activity, at the Presidio of San Francisco, has created a "Help Menu" to assist remote terminal users in obtaining data from the Logistics Intelligence File (LIF). The "Help Menu" lists the LIF data files and provides the formats and instructions for the user to follow in making use of those files. Users may obtain this assistance by entering their password, a space, and the word "HELP."

**TOOL DISPOSAL
MADE EASY**

Army procedures for disposing of damaged handtools will be clarified in an upcoming revision of AR 735-5, Accounting for Lost, Damaged, and Destroyed Property. Damaged handtools coded nonreparable (Z) and expendable (X) and priced at \$5 or less may be disposed of as scrap at the discretion of the unit commander. The tools do not have to be turned in as separate items or as a condition for replacement. The unit only has to submit DA Form 2765-1 when turning in its collected scrap metal to the supply support activity. However, commanders have authority to impose more stringent local controls.

**UNIT DISPLAY
SOP AVAILABLE**

The Army Quartermaster School has developed a standing operating procedure (SOP), including sample layouts, for displaying a combat service support unit's authorized equipment. Such displays are valuable for making an inventory of a unit's equipment and assessing the unit's readiness and mobility requirements. For a copy of the SOP, write—Commandant, U.S. Army Quartermaster School, ATTN: ATSM-DTO-ET, Fort Lee, VA 23801-5036.

**TPS COURSE
OFFERED**

During fiscal year 1987, the program manager for test program sets (TPS) plans to offer a version of the introductory TPS course tailored for logisticians. The course, which will cover the life cycle management of TPS, will be offered at Fort Monmouth, New Jersey, or onsite as demand dictates. For additional information, write—Commander, U.S. Army Communications-Electronics Command, ATTN: AMCPM-TMDE-T, Fort Monmouth, NJ 07703, or call AUTOVON 992-1442 or -1494.

NDI STUDIES

A bibliography of studies titled "Acquisition of Non-Developmental Items (NDI)" is available to authorized persons. Write to—DLSIE, ALMC, Fort Lee, VA 23801-6043, or call AUTOVON 687-4655 or commercial (804) 734-4655.

**SOLE SEEKS
TECH PAPERS**

The Society of Logistics Engineers (SOLE) is soliciting technical papers on the theme of "Improved Logistics Systems" for presentation at its 22d International Logistics Symposium in 1987. Abstracts of proposed papers, not to exceed 500 words, must be submitted to the Presentation Committee Chairman, P.O. Box 70, Florissant, MO 63032, by 14 November. For additional information, call commercial (314) 872-6129.

Coming in Future Issues—

- **Looking Ahead to Automated Logistics Systems**
- **Flight Safety Parts Program**
- **Refueling on the Move**
- **Getting a Move On**
- **Logistics Support for the Airborne Combat Team**
- **Stationing POMCUS in the Netherlands**
- **Sample Data Collection**
- **LOGMARS Today**
- **Management Information—A Leadership Tool**
- **Son of ULLS**
- **Centrally Maintaining Discrepancy Data**
- **Improving Productivity Management**
- **Transportation for Mobilization**
- **Automating Logistics Support Planning**
- **USAREUR Ammo Management Plan**
- **Assuming Production Risks**
- **Hands-on Supply Training**
- **Shrinking USAREUR Support**
- **Improving Inventory Management**