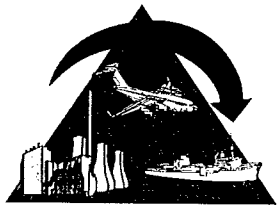


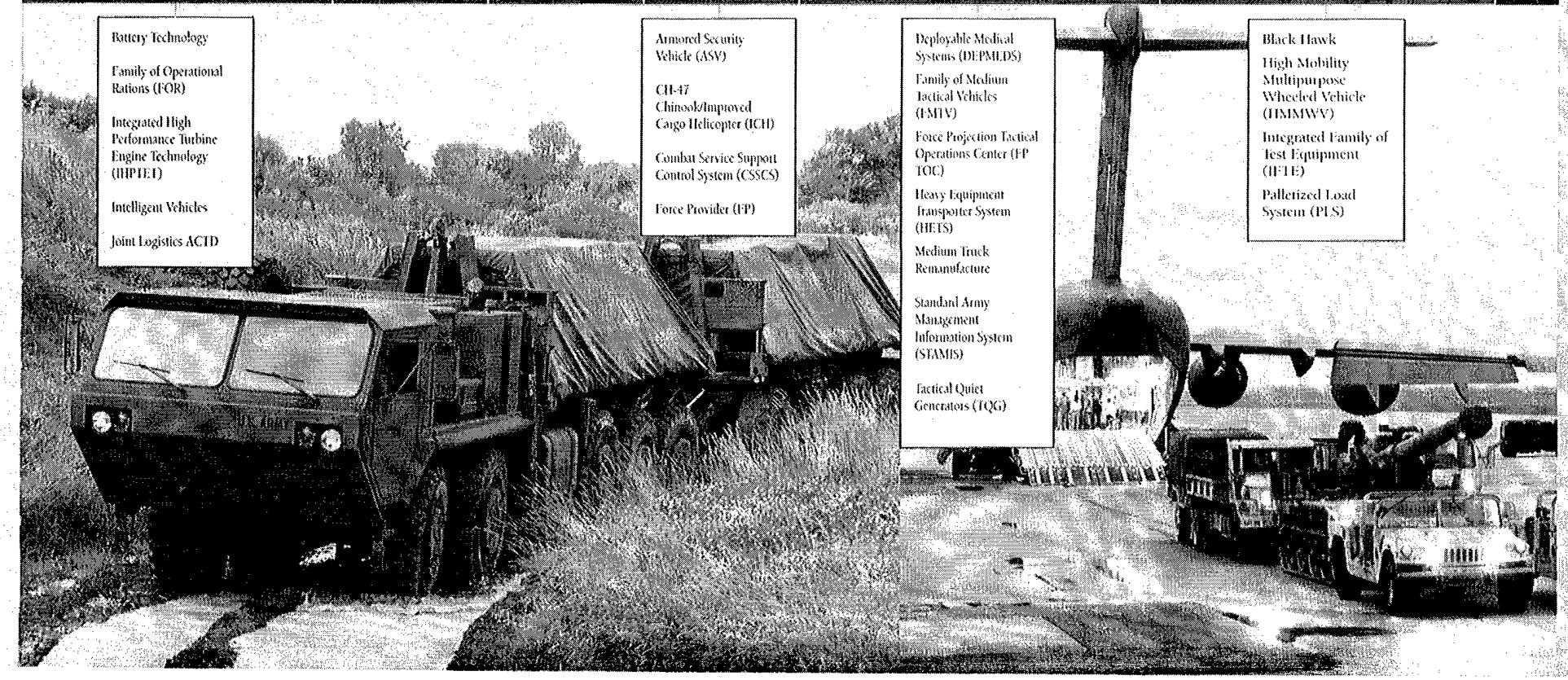
The Army of tomorrow will be a smaller, continental U.S. (CONUS) based force that will require a greater ability to project and sustain its power anywhere in the world. To realize that objective, Army systems need to be light, lethal and modular, so that it can project more capabilities with fewer resources. The Army also needs to have sufficient strategic and tactical lift assets to move its forces around the globe. Finally, the Army must project itself efficiently by taking advantage of new technologies to move only what is absolutely necessary. Improved logistical information systems and a new emphasis on split based operations will allow the Army to fully sustain its forces while projecting fewer support elements.

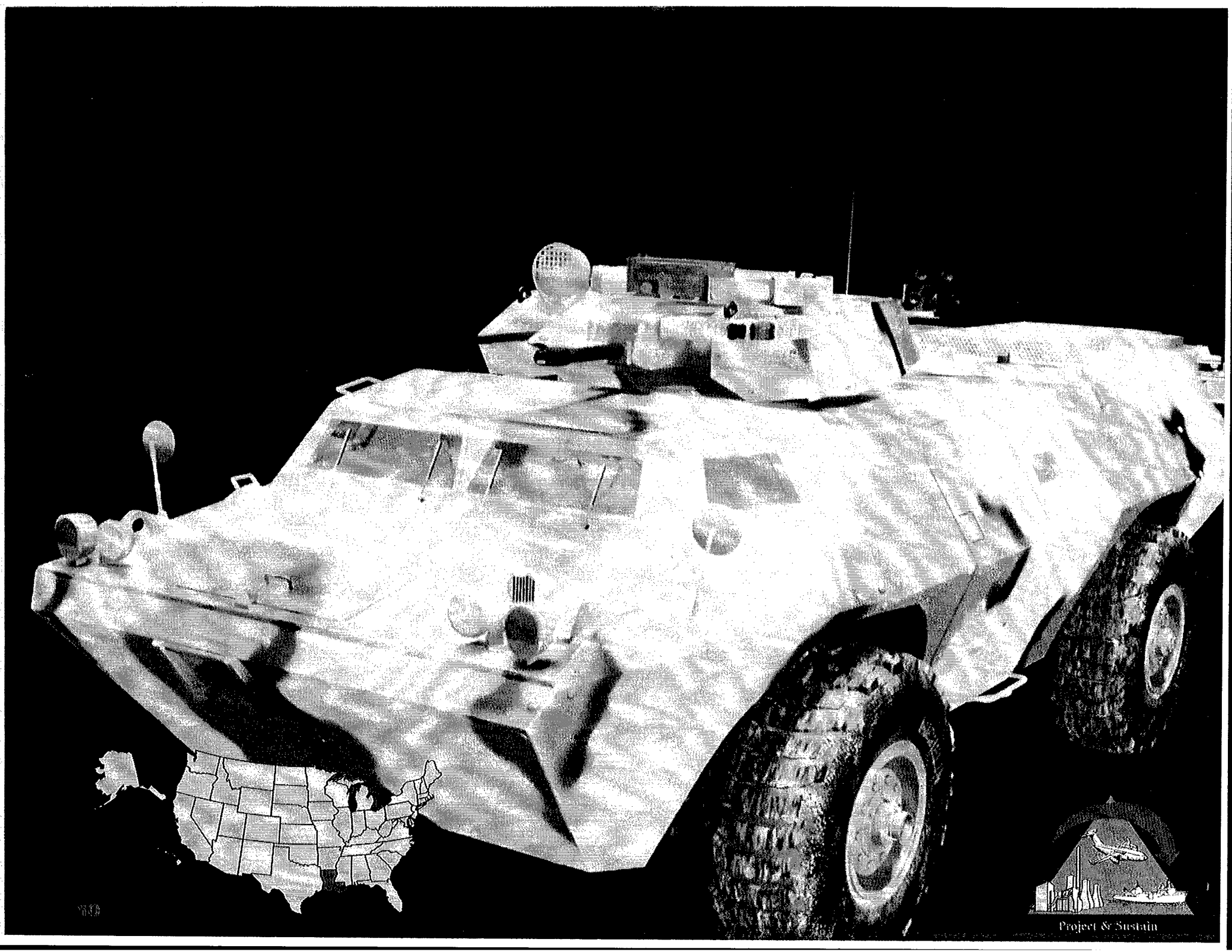
Major Regional Contingencies (MRCs) and crisis response operations are the most demanding scenarios for project and sustain, because they require rapid movement of large numbers of assets. Systems and approaches that support these intensive operations will also support other missions such as humanitarian relief and peacekeeping. In any crisis, the Army will need highly lethal early entry forces that can help secure entry points into a theater. Such forces need to be light, modular and rapidly transportable, but they also need improved defense and logistics assets that will permit them to hold the entry points. One example in this area is the Force Projection Tactical Operations Center (FP TOC), which will give the early entry commander an improved ability to manage the Theater Missile Defense (TMD) fight during the build-up phase.

Once the entry points are secure, the Army needs to be able to move heavier forces and supporting logistics forces into the theater quickly. This rapid build-up phase relies on the availability of large transport aircraft and large roll-on/roll-off ships to move the necessary equipment and supplies to the theater. The USAF C-17 and the USN Large Medium Speed Roll-On/Roll-Off (LMSR) ships are the critical programs for this capability. The build-up phase also depends on basic items like rail cars to get armored vehicles to their ships and the Family of Medium Tactical Vehicles (FMTV) to move the armored vehicles around the theater of war. There is also a role for advanced technology programs like the total distribution program, which will allow the Army to track items through every phase of transport, as commercial shippers can.

As Army forces build up in a theater, those forces require more than just a constant flow of supplies. The Army needs compact lightweight support systems that can move the supplies and meet other needs, be they medical, recreational or logistical. Systems like Force Provider and the Family of Operational Rations enhance the quality of life for soldiers in forward areas. Deployable Medical Systems (DEPMEDS) and Telemedicine will greatly improve the medical care available to soldiers in forward areas. The Improved Family of Test Equipment will improve the reliability and combat availability of systems in the theater. Project & Sustain means ensuring that the Army can get to where it has to fight with the equipment and supplies it needs to get the job done.

Science and Technology	Concept	Dem/Val	EMD	Production and Deployment	Operations and Support
Battery Technology Family of Operational Rations (FOR) Integrated High Performance Turbine Engine Technology (IHPTET) Intelligent Vehicles Joint Logistics ACTD			Armored Security Vehicle (ASV) CH-47 Chinook/Improved Cargo Helicopter (ICH) Combat Service Support Control System (CSSCS) Force Provider (FP)	Deployable Medical Systems (DEPMEDS) Family of Medium Tactical Vehicles (FMTV) Force Projection Tactical Operations Center (FP TOC) Heavy Equipment Transporter System (HETS) Medium Truck Remanufacture Standard Army Management Information System (STAMIS) Tactical Quiet Generators (TQG)	Black Hawk High Mobility Multipurpose Wheeled Vehicle (HMMWV) Integrated Family of Test Equipment (IFTE) Palletized Load System (PLS)




Project & Sustain

Armored Security Vehicle (ASV)

MISSION: The Armored Security Vehicle (ASV) supports the Military Police (MP) missions of law enforcement, area security, battlefield circulation and Enemy Prisoner of War operations over the entire continuum of war and on operations other than war. It will be fielded to Corps Support MP Companies engaged in these missions.

CHARACTERISTICS: The ASV is a turreted, armored, all-wheeled drive vehicle that provides increased ballistic and landmine protection to the MP. Its primary weapon is the MK19 Grenade Machine Gun, and it can also mount the M2 .50 caliber machine gun. The fully enclosed turret includes a day/night sight for target acquisition. The vehicle provides all around protection from 7.62 mm ball and protection from 12.7 mm armor piercing for the crew compartment, weapons station and ammunition storage areas. The ASV provides overhead protection against 60 mm mortars at 10 meters and underbody protection against 4 lb TNT mines. In addition, the armor must provide overhead blast protection from 155 mm at 15 meters and 12 lb TNT mines in the wheel wells. Other survivability enhancements include gas particulate, ventilated facepieces, a multi-salvo grenade launcher, crew/engine fire suppression system, an intercom with radio interface, transparent armor and blackout capability.

FOREIGN COUNTERPART: Germany - Theissen -Henschel; Netherlands - DAF; France - Panhard

FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: ASV is in engineering and manufacturing development.

PROJECTED ACTIVITIES: Operational and developmental testing of prototypes at Fort Hood, TX with a production award scheduled for June 1997.

PRIME CONTRACTOR: Textron (Marine and Land Systems Division) (New Orleans, LA)

* See appendix for list of subcontractors.

Dominate the Maneuver Battle

Project & Sustain

MISSION: The Black Hawk provides utility and assault helicopter capability.

CHARACTERISTICS: The Black Hawk (UH-60) is a utility, tactical, transport helicopter that performs many missions in the Army. The Black Hawk is the primary helicopter for air assault, general support, and aeromedical evacuation units. Modified Black Hawks also fulfill command and control, electronic warfare, and special operations roles. The Black Hawk has enhanced the overall mobility of the Army because of its dramatic improvements in troop capacity and cargo lift capability compared to the UH-1 "Huey" it replaces. Now, an entire 11-man, fully equipped infantry squad can be lifted in one Black Hawk, and the troops can be transported faster and in most weather conditions. The Black Hawk also is the first utility and assault helicopter that adds to the Army's Division-level mobility; for example, it can reposition a 105 mm howitzer, its crew of six, and up to 30 rounds of ammunition in a single lift. The aircraft's critical components and systems are armored or redundant to enable it to withstand multiple small arms hits, and its airframe is designed to progressively crush on impact to protect the crew and passengers in a crash. Ease of maintenance in the field was designed into the Black Hawk from the beginning.

	UH-60A	UH-60L
Max gross weight:	20,250 lbs	22,000 lbs 23,500 lbs (External Cargo)
Cruise speed:	139 kt	150 kt
Endurance:	2.3 hr	2.1 hr
Max range:	320 nm	306 nm
Crew:	2 pilots, 2 crew chief	2 pilots, 2 crew chief
Armament:	two 7.62 mm machine guns	two 7.62 mm machine guns
Payload:	2,640 lb (or 11 combat equipped troops)	2,640 lb (or 11 combat-equipped troops)
External load:	8,000 lb	9,000 lb

FOREIGN COUNTERPART: France: Puma; NH90 — United Kingdom: Lynx; EH-101 — Russia: HIP series aircraft

FOREIGN MILITARY SALES: FMS: Bahrain, Colombia, Egypt, Saudi Arabia
Commercial Sales: Australia, Brunei, China, Hong Kong, Japan, Jordan, Mexico, Morocco, Philippines, Turkey
Co-Production: Korea

PROGRAM STATUS: The Army began fielding the UH-60 in 1978. Between 1978 and 1989 the Army procured UH-60A model aircraft. In October 1989, the power train system was upgraded, resulting in a model designation change from UH-60A to UH-60L. As of the end of FY96, the Army has procured 483 UH-60L models for a total UH-60 buy of 1463 aircraft. The Army currently is in the fifth year of a five-year, multi-year procurement contract calling for the delivery of 60 Aircraft per year.

PROJECTED ACTIVITIES: Delivery of 5 aircraft per month in accordance with the multi-year procurement contract. Continued refurbishment and standardization of pre-1989 UH-60A models to bring those airframes to the most up-to-date A model configuration. UH-60Q MEDEVAC type qualification is in progress and is to be completed in FY98. Contract for delivery of 34 additional aircraft and 4 UH-60Q kits from FY97 appropriation.

PRIME CONTRACTOR: United Technologies (Sikorsky Aircraft) (Stratford, CT); General Electric (Lynn, MA)

* See appendix for list of subcontractors.

Project 25 Systems

CH-47D Chinook/Improved Cargo Helicopter (ICH)

MISSION: The only U.S. Army cargo helicopter, the mission of the CH-47D Chinook/Improved Cargo Helicopter (ICH) will be to transport weapons, ammunition, equipment, troops and other cargo in general support of combat units and operations other than war.

CHARACTERISTICS: The CH-47D Chinook/ICH will be similar to the CH-47D Chinook with the following exceptions: The cockpit will be upgraded to a new electronic architecture which will allow seamless interface with other systems on the digital battlefield; the airframe will be modified with active and passive systems to reduce vibration, and in turn, reduce fleet O&S costs. These aircraft will also have the advantage of a more powerful and reliable T55-GA-714A turboshaft engine as the result of a separate CH-47D Chinook engine upgrade program. Options to improve cargo handling and survivability may be possible based on availability of funding. The CH-47D Chinook/ICH will be a Corps asset.

Max Gross Weight:	50,000 lbs
Max Cruise Speed:	160 knots
Troop Capacity:	33
Litter Capacity:	24
Sling-load Capacity:	26,000 lbs center hook
	17,000 lbs forward/aft hook
	25,000 lbs tandem
Minimum Crew:	3

FOREIGN COUNTERPART: No known foreign counterpart.

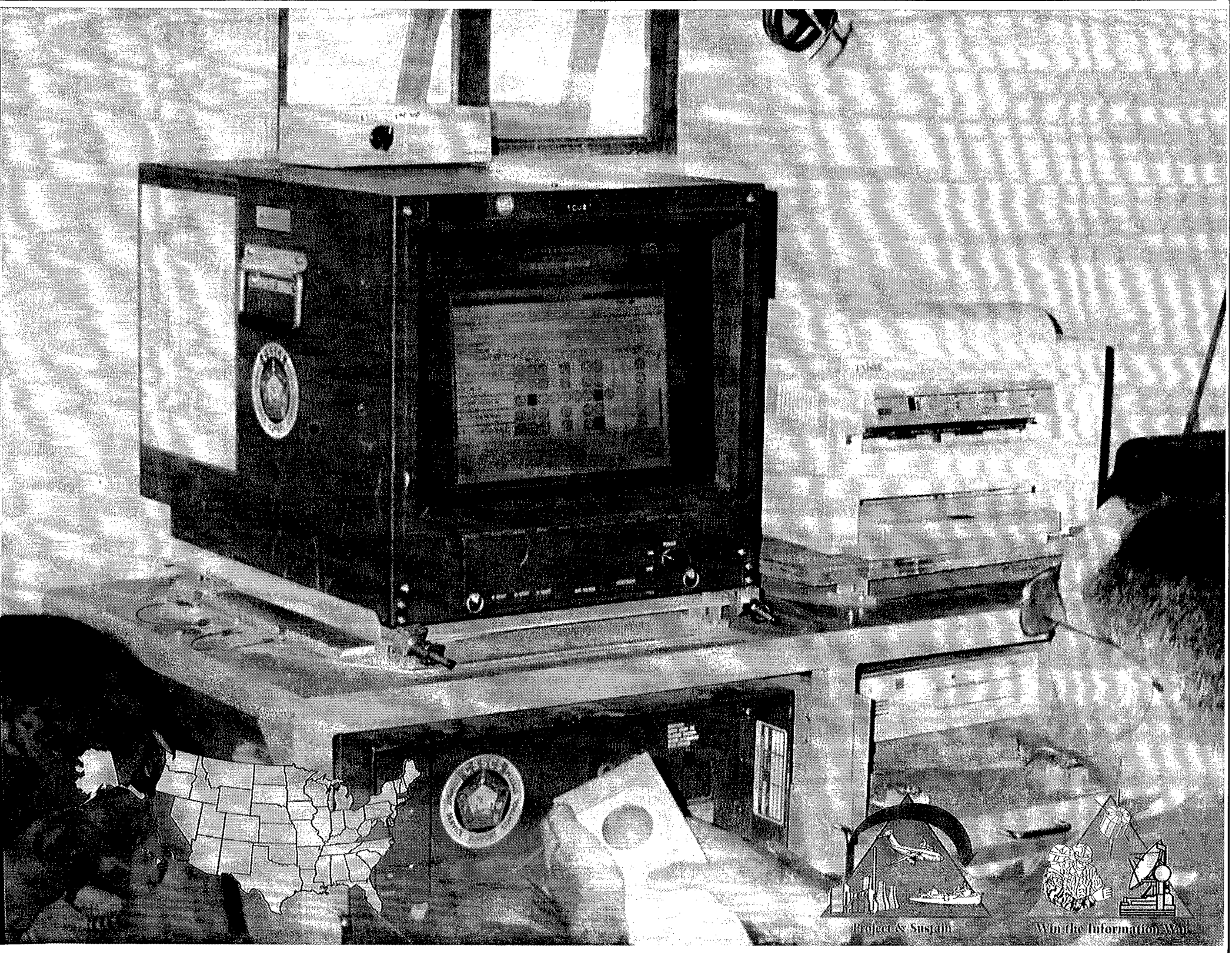
FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: The CH-47D Chinook/ICH is fully funded in the FY98-03 Program Objective Memorandum. Additional RDT&E plus-ups in FY97 will allow for program continuity and an FY97 start to achieve first delivery in FY02 and a first unit equipped in FY04.

PROJECTED ACTIVITIES: Concept formulation studies will be completed in early FY97. Risk reduction flight tests with passive vibration reduction modifications are currently ongoing. Additional flight tests with active vibration reduction systems and upgraded power-plants will begin in mid-FY97.

PRIME CONTRACTOR: Allied Signal (Phoenix, AZ)
Boeing (Philadelphia, PA)

*See appendix for list of subcontractors.


Project & Sustain
Win the Information War

Combat Service Support Control System (CSSCS)

MISSION: The Combat Service Support Control System (CSSCS) will provide timely situational awareness and force projection information to determine capability to support current operations and sustain future operations. The CSSCS will rapidly collect, store, analyze, and disseminate critical logistics, medical, financial and personnel information.

CHARACTERISTICS: The CSSCS is a computer software system designed to assist commanders and their staffs in the planning and execution of logistics operations. CSS commanders and staffs are currently participating in the force-level planning and decision making processes through a manual effort of gathering, correlating, and analyzing volumes of technical data from the existing Standard Army Management Information Systems (STAMIS). The CSSCS can extract summary information from the CSS STAMIS, accept input from other elements of the CSS community, and exchange information with other automated systems to evaluate CSS information with respect to the force-level commander's tactical courses of actions. The CSSCS is the combat service support component of the Army Battle Command System (ABCS). The CSSCS will be organic to CSS units and headquarters staffs within the maneuver brigades, separate brigades, armored cavalry regiments, Divisions, Corps, and Echelons Above Corps (EAC). The CSSCS will be comprised of computer units procured through the Project Manager [Common Hardware/Software (PM CHS)], [Common Operating Environment (COE)] Software and CSSCS-unique software. The CSSCS will be housed in the family of Standardized Integrated Command Post Systems provided by PM CHS.

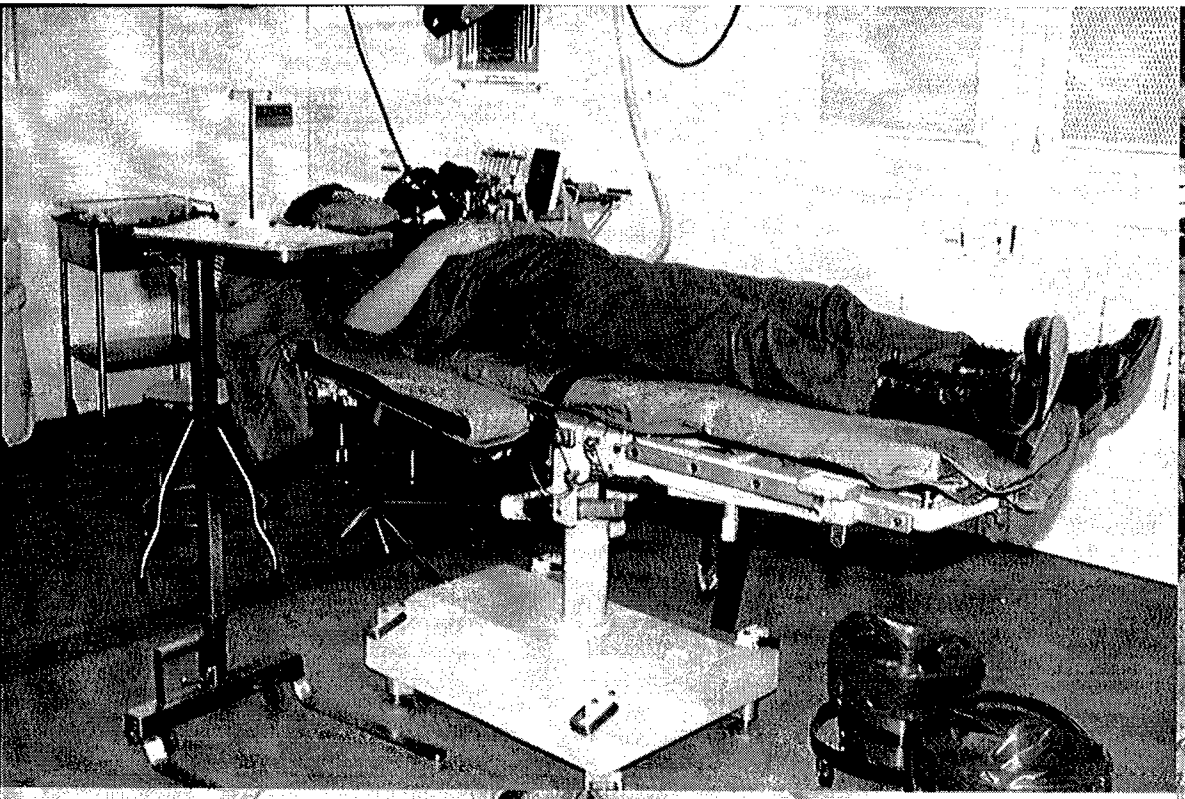
FOREIGN COUNTERPART: PM CSSCS participates actively with Germany, France and Great Britain in the Quadrilateral Army Communications Information Systems Interoperability Group. Additionally, Canada and Australia are monitoring the status of CSSCS development.

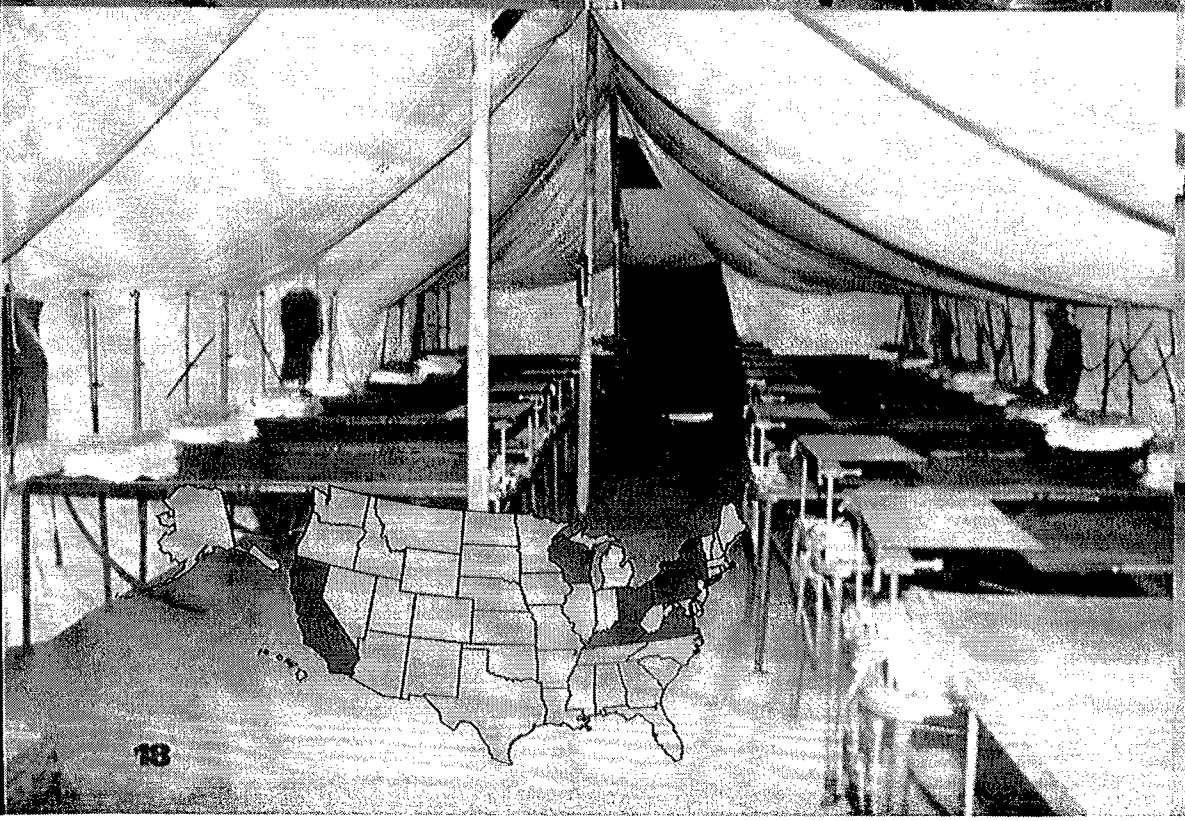
FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: The CSSCS is currently in the Engineering and Manufacturing Development, with low-rate initial production authority. Program development has been structured to evolve over five versions. Versions 1 and 2 served as proof of principle, and provided initial division level CSS functional capability on common hardware. Version 3 builds on the capabilities of the previous versions and provides an Initial Operational Capability at Division and Corps level, to include initial horizontal interoperability with ABCS systems. Version 4 will extend CSSCS to EAC, as well as provide added capabilities. Version 5, the objective CSSCS software, will extend CSSCS capabilities to joint, allied, and coalition forces.

PROJECTED ACTIVITIES: ASARC III (Full Production), 2QFY97.
First Unit Equipped, June 1997.

PRIME CONTRACTOR: LMC (Springfield, VA) Versions 4-5 1995-1999
TRW (Carson, CA) Versions 1-3 1991-1997





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Deployable Medical Systems (DEPMEDS)

MISSION: The Deployable Medical Systems (DEPMEDS) family provides deployable hospitals with standard medical care equipment.

CHARACTERISTICS: The DEPMEDS family is composed of medical equipment packaged into standardized modules for use by all Services. There are four types of deployable Army hospitals under the Army's Medical Force 2000 reorganization: forward-deployed Mobile Army Surgical Hospitals, Combat Support Hospitals, Field Hospitals, and General Hospitals. Each will comprise different configurations of standard DEPMEDS modules, such as operating rooms, laboratories, x-ray units, and wards. The DEPMEDS hospital sets standardize the use throughout the Army and DoD of the latest medical technology and equipment, expendable supplies, major nonmedical support equipment power units, Tent Extendible Modular Personnel Tents, tactical shelters, heating, and air conditioning. Standard modules improve medical operability and patient distribution. The hospital sets can be deployed under all climatic conditions. Fielding the 88 Army hospital sets will eliminate serious shortages of field medical equipment and achieve major advances in equipping the Total Army. Gaining units will receive their DEPMEDS equipment in one package under the Total Package Fielding concept. This is the largest Total Package Fielding effort ever undertaken by the Army Medical Department.

System characteristics vary by type of hospital set. All provide adequate but austere care, are maintainable and relocatable, have modular configuration and quad-service compatibility, and are transportable by strategic air.

FOREIGN COUNTERPART: No known foreign counterpart.

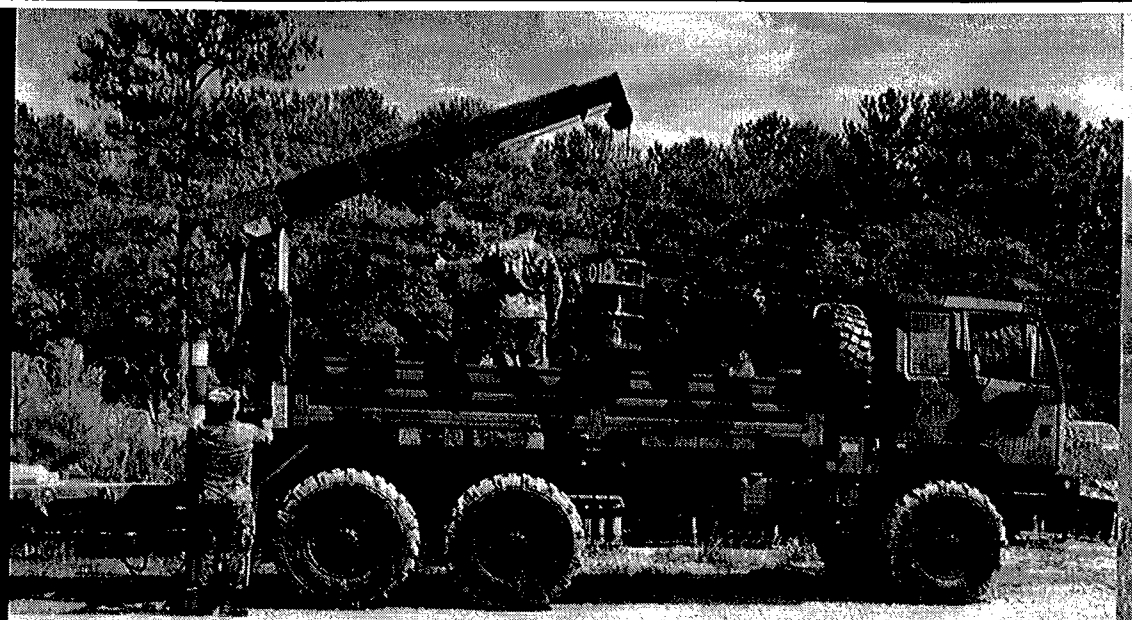
FOREIGN MILITARY SALES: Six Mobile Army Surgical Hospitals (MASH) units were sold to Saudi Arabia during Operation Desert Storm.

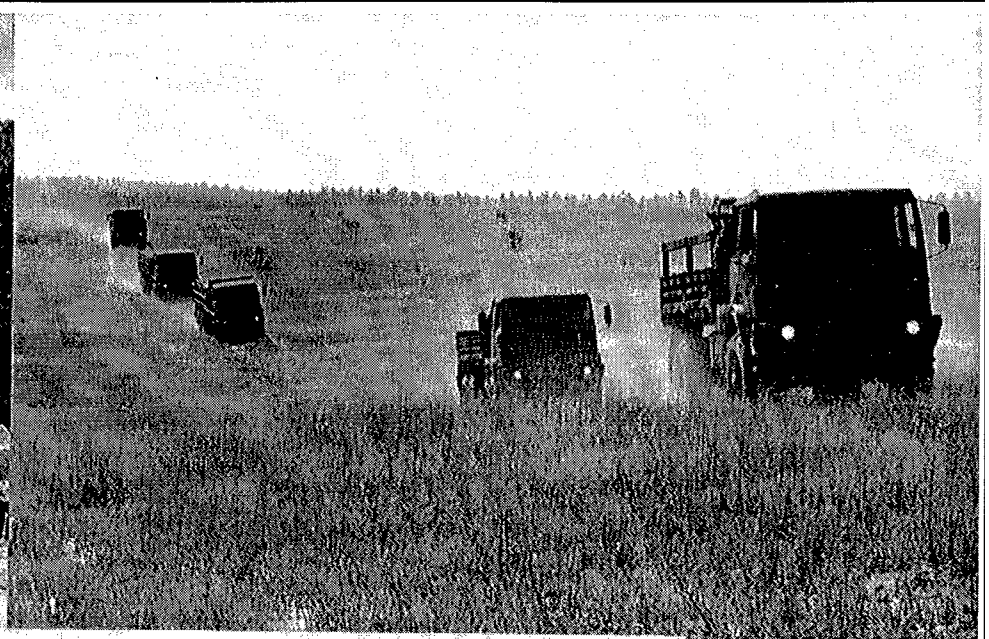
PROGRAM STATUS: The DoD Medical Standardization Board ensures compatibility among the Services. Fielding began in 4QFY87. As of September 1996, 68 hospitals had been fielded and 96 minimum essential equipment sets have been fielded.

PROJECTED ACTIVITIES: During FY97, the systems will be modernized in keeping with upgraded and changing medical technology.

PRIME CONTRACTOR: A large number of contractors are involved in providing the 3,400-plus medical and non-medical components of DEPMEDS. These components are assembled into modules and hospital sets by the Defense Logistics Agency, Defense Depot, Ogden, UT.

* See appendix for list of subcontractors.





Family of Medium Tactical Vehicles (FMTV)

MISSION: The Family of Medium Tactical Vehicles (FMTV) will fill the Army's medium tactical wheeled vehicle requirements.

CHARACTERISTICS: The FMTV consists of a common truck chassis that is used for several vehicle configuration in two payload classes. The Light Medium Tactical Vehicle (LMTV) is available in van and cargo variants and has a 2 1/2-ton payload capacity. The Medium Tactical Vehicle (MTV) has a 5-ton payload capacity and consists of the following models: cargo with and without materiel-handling equipment, tractor, wrecker, and dump truck. Van and tanker variants of the MTV will be developed concurrent with the production of other models. The FMTV will perform line haul, local haul, unit mobility, unit resupply and other missions in combat, combat support, and combat service support units. Vehicles will operate worldwide on primary and secondary roads and trails. The FMTV will replace overaged and maintenance-intensive trucks currently in the fleet.

	LMTV Cargo	MTV Cargo
Payload:	5,000 lb	10,000 lb
Towed load:	7,500 lb	21,000 lb
Engine:	Diesel	Diesel
Transmission:	Automatic	Automatic
Horsepower:	225	290
Drive:	4x4	6x6

FOREIGN COUNTERPARTS:

	LMTV	MTV
Austria:	Steyr 630M3	Steyr 1291M
France:	RVI Saviem TRM-2000	RVI Saviem TRM-4000
Germany:	Unimog U11OOL	Mercedes 1017A, MAN 5-ton
Italy:	Fiat 75PM	Fiat 6602
Russia:	ZIL-131; GAZ-66	URAL-375; 6A2 9301; KAW 4430 (same as 5-ton)
Spain:	Santana 2000	Peguso 3050

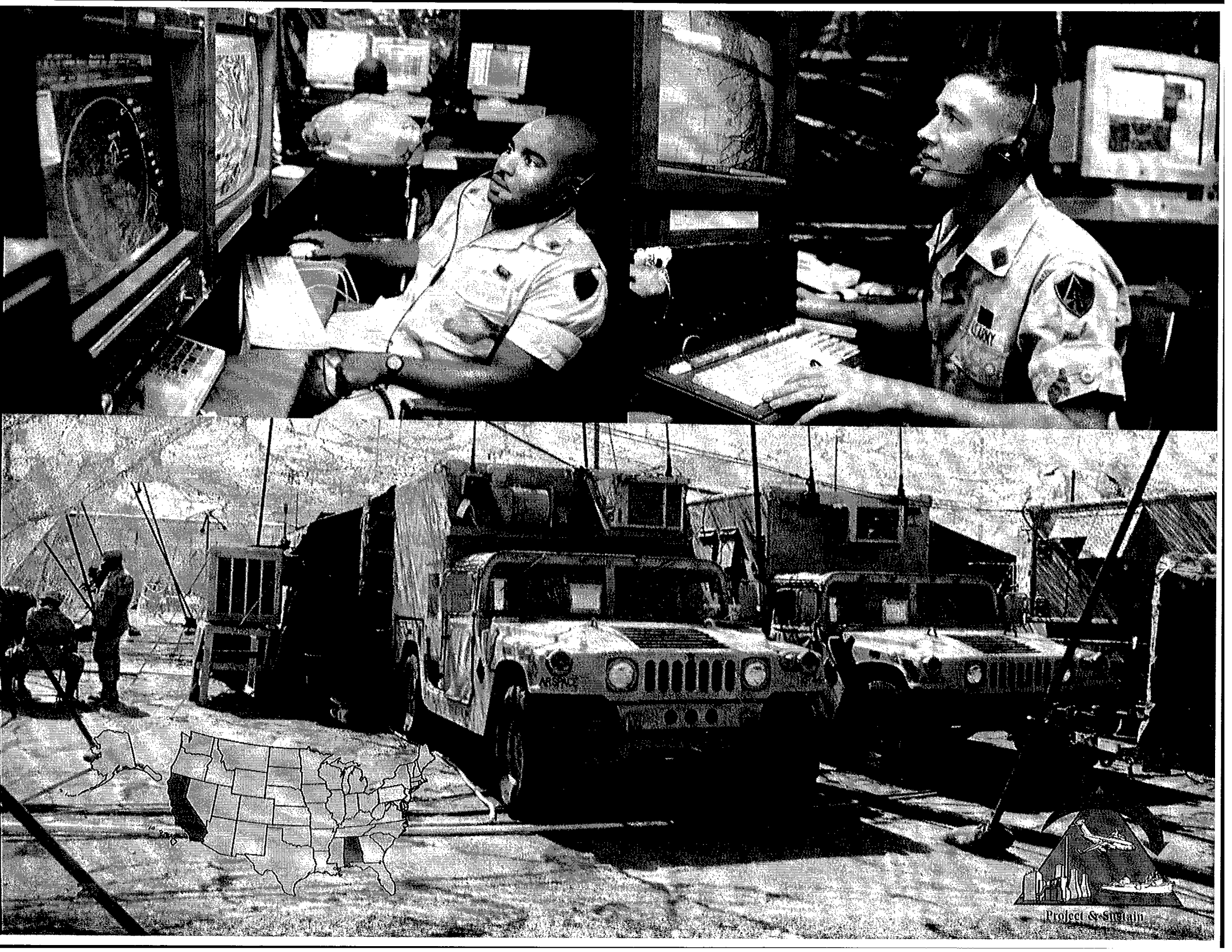
FOREIGN MILITARY SALES: Saudi Arabia and Thailand have FMS actions in progress.

PROGRAM STATUS: First unit equipped was at Ft. Bragg, NC on 30 January 1996. Units at Ft. Campbell, KY have also received the FMTV. A letter contract was awarded to Stewart and Stevenson Services on 23 August 1996 to complete the 5th program year of the original contract.

PROJECTED ACTIVITIES: Fielding continues to the Army's highest priority "first-to-fight" units.

PRIME CONTRACTOR: Stewart and Stevenson Services (Houston, TX)

* See appendix for list of subcontractors.


Project Sustain

Force Projection Tactical Operations Center (FP TOC)

MISSION: The Force Projection Tactical Operations Center (FP TOC) provides the Joint Force Land Component Commander with a digitized command and control capability to integrate and synchronize the four operational elements of Theater Missile Defense (TMD) (attack operations, active and passive defense, and Battle Management Command, Control, Communications, Computers and Intelligence) to defeat the Theater Missile threat.

CHARACTERISTICS: The FP TOC is a command and control (C2) system of systems, functionally integrating existing and evolving Army Battle Command System (ABCS), Global Command and Control System (GCCS), and TMD BMC4I specific applications. Staffed by the Army Theater Missile Defense Element (ATMDE), the FP TOC integrates and synchronizes the Joint Force Land Component Commander's (JFLCC) TMD fight. The FP TOC is a mobile digitized information and C2 center, consisting of five High Mobility Multi-Purpose Wheeled Vehicles with Standard Integrated Command Post System shelters providing the ATMDE the capability to plan, coordinate, deconflict, monitor, and execute the JFLCC's TMD operations to counter the Theater Missile threat. The FP TOC receives, filters, processes, disseminates, accesses, correlates and displays TMD information through 13 fielded and/or developmental Army and Joint command, control, and communication systems. The FP TOC is the only C2 center that is compatible with Distributive Interactive Simulation (DIS) protocols allowing the ATMDE to conduct training in a Synthetic Battlefield Environment. The FP TOC's primary functions are: Intelligence, Preparation of the Battlefield, Situational Awareness and Battlefield Visualization, Vulnerability Assessments, Localized Missile Attack Warning, Early Entry C2 for TMD capability assets, Sensor Cross-Cueing, Defense Designs and Joint Theater Communications Interfaces.

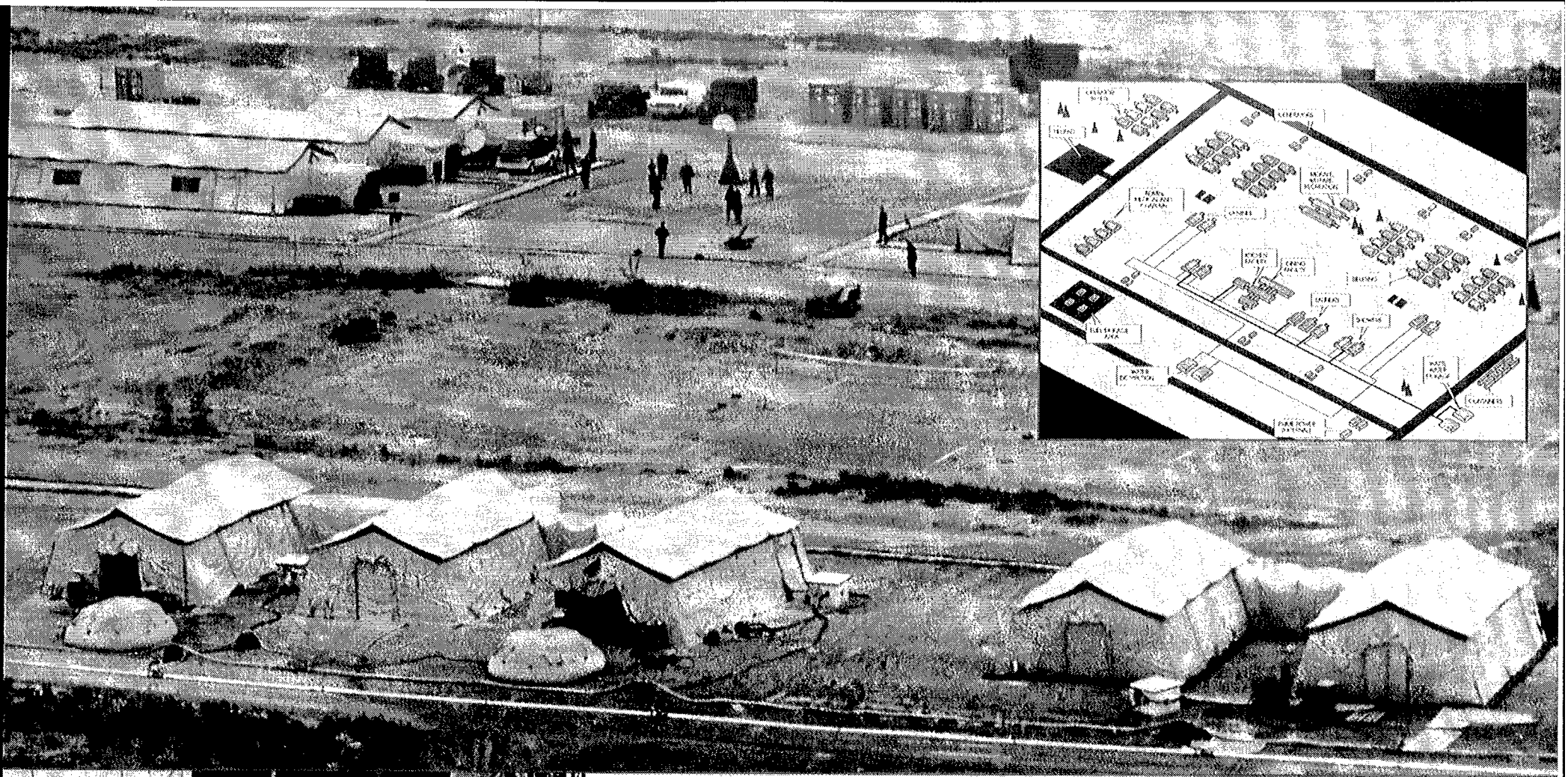
FOREIGN COUNTERPART: No known foreign counterpart.

FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: The FP TOC was fielded to the Army in February 1995. The FP TOC has demonstrated its value-added to integrate and synchronize TMD during Roving Sands 95 and 96, the TMD Army Warfighting Experiment 95, Ulchi Focus Lens 95 and 96 and numerous other CINC exercises. The FP TOC set the standard for joint interoperability during the Joint Warfighting Interoperability Demonstration 95. The FP TOC established interfaces between its various BMC4I systems and with the Air Force's Combat Integration Center to receive and disseminate time sensitive TMD intelligence and operational products. During February 1996, the FP TOC was upgraded during Phase II. The Phase II upgrades added a new communication vehicle to consolidate voice communications; added new workstations and improved existing workstations; replaced CHS I equipment with CHS II; and upgrades provided a distributed computing environment and a standardized message formatting capability.

PROJECTED ACTIVITIES: FP TOC BMC4I systems upgrades and fielding additional FP TOC. The FP TOC will participate in Roving Sands 97 and Joint Project Optic Cobra 97, and Ulchi Focus Lens 97.

PRIME CONTRACTOR: TRW Inc. (Dominguez Hills, CA)



Force Provider (FP)

MISSION: The Force Provider (FP) will provide high quality of life rest and refit facilities for combat soldiers in theater of operations with limited or no supporting infrastructure.

CHARACTERISTICS: The FP is a high quality tent-based troop support system with selected containerized components which provides climate controlled billeting, feeding, hygiene services, and morale, welfare and recreation services. It was a non-developmental item engineering and integration effort. The components consist of existing DoD equipment to the maximum extent possible. Equipment for this system includes tent-based billeting, dining facilities, showers, and containerized latrines and laundries. FP also includes power generation and distribution equipment; morale, welfare, and recreation equipment; area lighting; water and fuel storage and distribution; and waste water storage. Additionally, FP supports bare base theater of operation reception, reconstitution, humanitarian aid, and disaster relief missions. It is packaged and containerized for ease of deployability by all modes of transportation.

FOREIGN COUNTERPART: Germany: Feld Lager System—Concept Phase

FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: FP was type classified standard on 12 May 1996.
Delivery of first two modules December 1996.
Delivery of two modules December 1997.
Preplanned product improvements for containerized batch laundry and latrine systems completed September 1996.
Six interim support package modules (ISP#2) deployed to Operation Joint Endeavor and supported over 5000 troops with high quality life support.

PROJECTED ACTIVITIES: Major item contract and secondary item deliveries continuous and on schedule.
System integration and assembly ongoing for FY97/98.

PRIME CONTRACTOR: FY97/98 production assembly by Tobyhanna Army Depot with system integration by the Force Provider Program Management Office.

* See appendix for list of major subcontractors.

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U.S. ARMY
Project & Sustain
Dominate the Maneuver Battle

Heavy Equipment Transporter System (HETS)

MISSION: The Heavy Equipment Transporter System (HETS) deploys, transports, recovers, and evacuates a combat-loaded M1 series tank or other vehicles of similar weight.

CHARACTERISTICS: The HETS consists of the M1070 truck tractor and M1000 semitrailer (70 ton). They are being procured under separate acquisition programs. The new HETS transports 70-ton payloads, primarily M1 series tanks. It operates on OCONUS highways, on CONUS highways with permits, secondary roads, and cross country. The HETS has a number of features that significantly improve the mobility and overall performance of the system in a tactical environment. The M1070 tractor has front- and rear-axle steering, a central tire inflation system, and cab space for six personnel to accommodate the two HETS operators and four tank crewmen. The M1000 semitrailer has automatically steerable axles and a load-leveling hydraulic suspension.

Speed: 40-45 mph on highway (25-30 mph with 70 ton payload)
Range: 300 miles
Transport: C-5 and C-17 aircraft
Mobility: 95% on road; 5% off road
RAM: 3,000 mean miles between hardware mission failure for both tractor and trailer

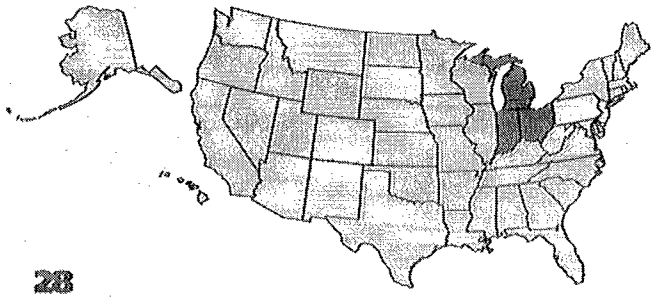
FOREIGN COUNTERPART: France: TRH 350 Russia: TATRA-813 (tractor)/ChMZAP-5212 (trailer)

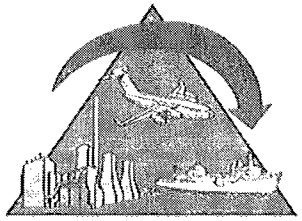
FOREIGN MILITARY SALES: Israel has a letter of requirement for the trailer only, but no sale yet.

PROGRAM STATUS: The HETS is being procured as a non-developmental item and is approved for full rate production. Oshkosh Truck Corporation is producing the tractor. The trailer is being produced by Systems & Electronics, Inc. First unit equipped occurred on 3 June 1994 with the 27th Main Support Battalion (MSB), 1st Cavalry Division at Ft. Hood, Texas. HETS fielding will continue through FY97 as currently funded and FY99 if contract options are exercised.

PROJECTED ACTIVITIES: Fielding through FY97 (FY99 if contract options are exercised). Procurement of an additional 182 systems in FY97.

PRIME CONTRACTOR: Tractor: Oshkosh Truck (Oshkosh, WI)
Trailer: Systems & Electronics, Inc. (St. Louis, MO)





High Mobility Multipurpose Wheeled Vehicle (HMMWV)

MISSION: The High Mobility Multipurpose Wheeled Vehicle (HMMWV) provides a common light tactical vehicle capability.

CHARACTERISTICS: The HMMWV is a light, highly mobile, diesel-powered, four-wheel drive vehicle that uses a common 4,400 lbs payload chassis. The HMMWV can be configured through the use of common components and kits to become a troop carrier, armament carrier, S250 shelter carrier, ambulance, TOW missile carrier and a Scout vehicle. The 4,400 lbs variant was developed as the prime mover for the light howitzer, towed VULCAN system, and heavier shelter carriers. It is a Tri-Service program that also provides vehicles to satisfy Marine and Air Force requirements. The HMMWV program is complementary to the Commercial Utility Cargo Vehicle. The HMMWV replaced the 1/4 ton Jeep, the M718A1 Ambulance, 1/2 ton Mule, 1 1/4 Gamma Goat, and M792 Ambulance.

Since its inception the HMMWV has undergone numerous design and configuration updates and changes. These changes have included technological, environmental, operational and safety improvements such as higher payload capability, radial tires, 1994 EPA emissions update, commercial bucket seats, three-point seat belts, four speed transmissions and, in some cases, turbo charged engines, air conditioning and central tire inflation systems. In response to peace keeping missions, an Up-armored HMMWV was developed that provided increased ballistic and blast protection primarily for the Military Police (MP). In addition, the Project Manager (PM) developed a Scout HMMWV which is configured with a night vision device, a global positioning system, gun mounts and SINCGARS radios.

In 1995, the PM introduced the A2 configuration and the Expanded Capacity Vehicle (ECV) HMMWV. The A2 incorporates the four speed, electronic transmission, the 6.5 liter diesel engine and improvements in transportability. The A2 serves as a platform for other Army systems such as the Ground Based Common Sensor. The ECV vehicle also went into production in 1995. The payload of this vehicle will approach 5000 lbs. Its primary mission is that of an Up-armored vehicle for the Scouts and the MP. Also, this vehicle will serve as a platform for mission payloads and systems that exceed 4,400 lbs.

FOREIGN COUNTERPART: Certain models of the HMMWV have counterparts such as the Swiss MOWAG, the French PANHARD and the German UNIMOG.

FOREIGN MILITARY SALES: The HMMWV has been sold through FMS to 29 countries.

PROGRAM STATUS: Continued production on the requirements contract.

PROJECTED ACTIVITIES: Continued fielding as a platform in support of MP, Scouts and other Army systems.

PRIME CONTRACTOR: AM General (South Bend, IN)

* See appendix for list of subcontractors.

ENTER OPERATOR MOD/SKILL LEVEL
Project & Sustain

Integrated Family of Test Equipment (IFTE)

MISSION: The Integrated Family of Test Equipment (IFTE) provides the capability to isolate electronic faults in weapon systems.

CHARACTERISTICS: The IFTE is a modular Test, Measurement, and Diagnostic Equipment (TMDE) system that consists of four interrelated systems to provide general purpose, standard automatic test equipment (ATE) capability through all levels of maintenance. It allows the isolation of weapon systems faults to the Line Replaceable Unit (LRU) at the Organizational and Direct Support (DS) levels of maintenance, both on and off system. This supports rapid return to the battlefield. At General Support (GS) and Depot levels of maintenance, IFTE further diagnoses an LRU to the Shop Replaceable Unit (SRU).

Two tactical systems, the AN/PSM-80 Contact Test Set (CTS), and the AN/TSM-191 Base Shop Test Facility (BSTF), provide on- and off-system support, respectively. The CTS is also the host for Electronic Technical Manuals (ETMs) and interactive ETMs. The CTS is man-portable and augments supported systems Built-in-Test/Built-in-Test-Equipment (BIT/BITE) to isolate weapon systems failures to the bad LRU. The BSTF consists of the AN/USM-632 Base Shop Test Station (BSTS) in an S-280 shelter mounted on a 5-ton truck. A second shelter and truck store Test Program Sets (TPSs). TPSs are the weapon systems-specific software that the ATE uses to diagnose faults in major items or components. A 60 kW generator powers the BSTF. Base Shops serve at both DS and GS levels. The Commercial Equivalent Equipment (CEE) is a non-tactical, non-ruggedized equivalent of the BSTF, designed for completion TPS development and to support requirements at depots, contractor facilities, and Special Repair Activities. The Electro-Optic Test Facility (EOTF) is under development to provide an off-system electro-optic test capability at the DS and GS levels. The EOTF will be housed in an S-280 shelter mounted on a 5 ton truck and will be powered by a 60 kW generator.

FOREIGN COUNTERPART: No known foreign counterpart.

FOREIGN MILITARY SALES: Argentina, Denmark, Egypt, Greece, Israel, Korea, Kuwait, NAMSA, Norway, Organization of African Unity, Saudi Arabia, Taiwan, Thailand.

PROGRAM STATUS: The IFTE BSTF full-scale production decision took place in March 1992. Improvements identified at initial operational test and evaluation are being retrofitted to all BSTFs. First Unit Equipped (FUE) for the BSTF occurred in December 1992. FUE for the CTS occurred in September 1994.

PROJECTED ACTIVITIES: The BSTF and the CTS (SPORT) will be procured and fielded in FY97. Development of the EOTF will continue through FY97.

PRIME CONTRACTOR: BSTF/CEE/EOTF: Northrop-Grumman (Great River, NY)
CTS: SAIC (San Diego, CA)
CTS (SPORT): Miltope Corp. (Hope Hall, AL)

* See appendix for list of subcontractors.

Medium Truck Remanufacture

MISSION: The Medium Truck Remanufacture or Extended Service Program (ESP) vehicles perform local haul, resupply, mobility and other missions for combat, combat support and combat service units. Both of these programs complement the FMTV program.

CHARACTERISTICS: After remanufacture the 2 1/2 ton ESP truck receives a new serial number and registration number. Three vehicles are provided for every two new ones produced. Old vehicles are completely disassembled and reusable parts are reworked as required. New trucks are reassembled on a new production line using a combination of the reworked parts and a significant number of new parts and components. Some of the features of the ESP vehicles are as follows: a new Caterpillar 3116 diesel engine meeting CY93 EPA emission standards, a new Allison 1545 automatic transmission, a new cooling system, reworked Rockwell axles and transfer case, new electronically controlled central tire inflation system, Michelin super single radial tires, power assist steering, an improved independent circuit air/hydraulic brake system, three point seat belts, a new ergonomically designed driver's seat, electronic windshield wipers and washer and a new, improved heater and defroster system. The Army envisions similar system improvements on the 5 ton ESP truck.

FOREIGN COUNTERPART: See the FMTV listing.

FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: The 2 1/2 ton truck is in production.
The 5 ton ESP truck is in the EMD phase jointly with the USMC's Medium Tactical Vehicle Remanufacture (MTVR) program.

PROJECTED ACTIVITIES: The 2 1/2 ton ESP truck will continue fielding.
The 5 ton ESP truck will produce and test Army and USMC prototypes.

PRIME CONTRACTOR: The 2 1/2 ton ESP truck: AM General (South Bend, IN)
The 5 ton ESP truck: TBD

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AIR RELEASE
CENTER OF BALANCE

Palletized Load System (PLS)

MISSION: The Palletized Load System (PLS) is being deployed as the primary component of the maneuver-oriented ammunition distribution system (MOADS). It will perform line haul, local haul, unit resupply and other missions in the tactical environment to support modernized and highly mobile combat units.

CHARACTERISTICS: The PLS consists of a 16 1/2-ton payload prime mover (10x10) with an integral load-handling system, which provides self-loading and unloading capability; a 16 1/2-ton payload trailer; and demountable cargo beds, referred to as flatracks. The PLS truck is equipped with the central tire inflation system, which significantly improves off-road mobility. PLS maintains interoperability with the comparable British, German, and French systems, through the use of a common flatrack, as specified in the current quadripartite agreement. On the basis of direction provided by Congress in the FY90 Defense Appropriation Bill, an intermodal flatrack (with features that enhance transportability and stacking) has completed design and is in production (5,000 M1 Flatracks). A container lift kit also will be fielded to PLS trucks assigned to transportation and ammunition units and to forward support battalions. This provides PLS the capability to pick up and transport 20 ft ISO containers without using a flatrack. The self-propelled field artillery units will receive PLS trucks equipped with a materiel-handling crane to deal with individual pallets of ammunition.

Truck payload:	16 1/2 ton
Trailer payload:	16 1/2 ton
Flatrack dimensions:	8x20 ft
Engine type:	Diesel
Transmission:	Automatic
Number of driven wheels:	10
Range, integral fuel at gross combined weight:	255 mi

FOREIGN COUNTERPART: United Kingdom: Demountable Rack Off-Loading and Pick-Up System

FOREIGN MILITARY SALES: No foreign military sales.

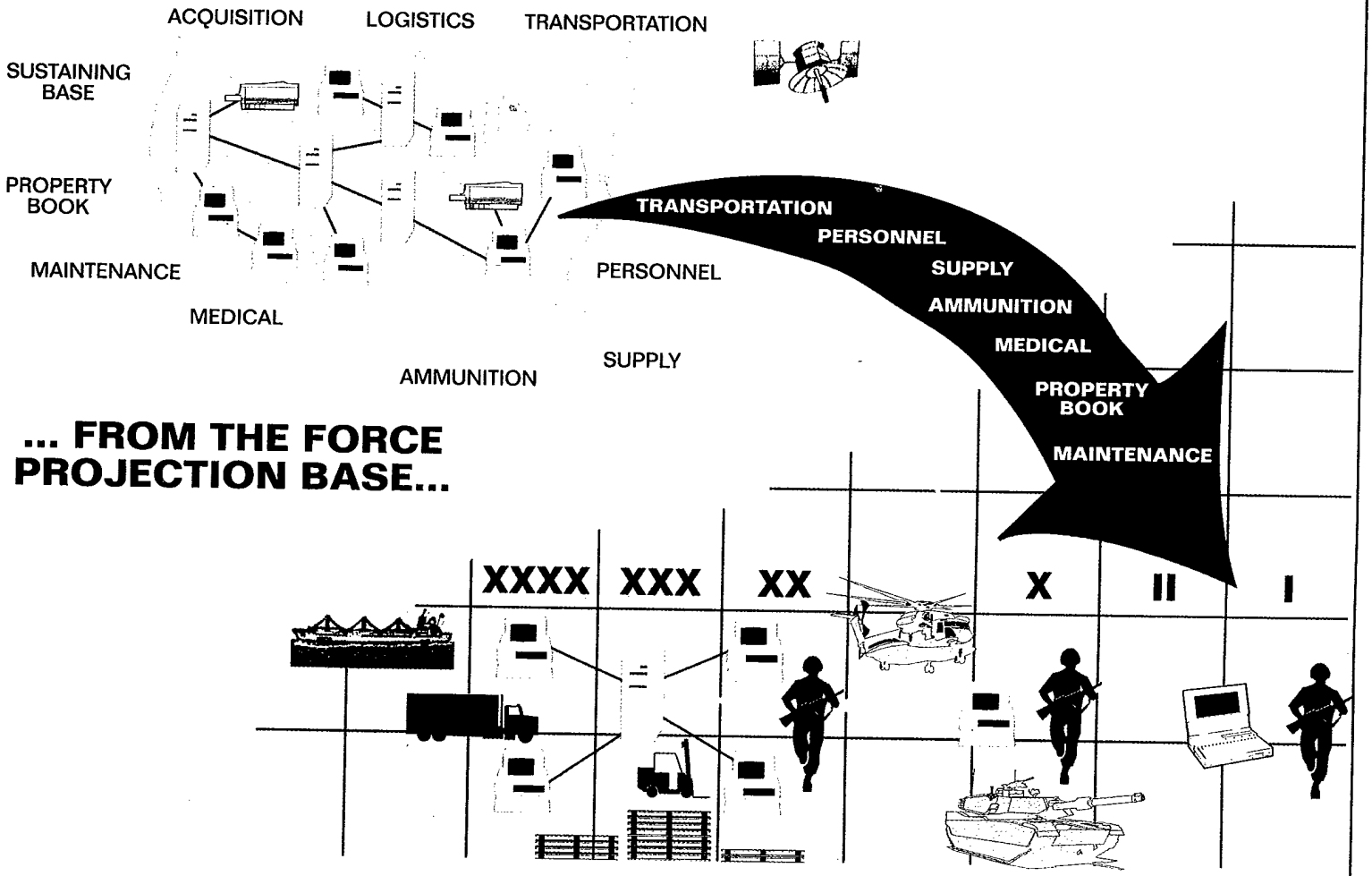
PROGRAM STATUS: The PLS is a non-developmental item program which has been executed through a five-year multi-year production contract awarded to Oshkosh Truck Corporation in September 1990. It entered low rate production in 1991 and was approved to enter full production in April 1993. The PLS first unit equipped occurred in February 1994 with units from the 1st Cavalry Division at Ft. Hood, TX. PLS fielding will continue through FY97.

PROJECTED ACTIVITIES: TRADOC is currently performing an analysis of follow-on uses for the PLS. The study explores the benefits of using PLS for the following missions: Corps distribution of other classes of supply, DEPMEDS Hospital and Medical Supplies, Aviation Intermediate Maintenance Units in Division/Corps, and Engineer Bridging. The PMO is currently developing tanker flatracks to transport water and fuel per Congressional direction and will soon begin the development of engineering application flatracks. The PLS will be used as the launcher for the Theater High Altitude Area Defense (THAAD) and as the transporter for the Heavy Dry Support Bridge (HDSB).

PRIME CONTRACTOR: Oshkosh Truck (Oshkosh, WI)

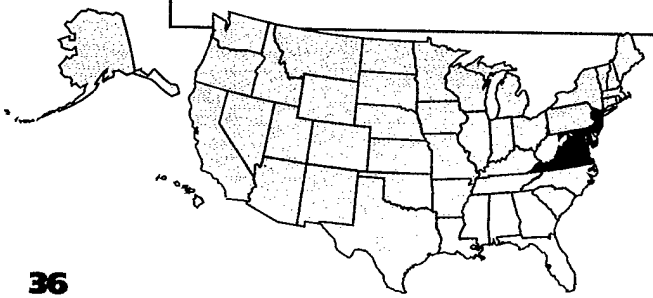
* See appendix for list of subcontractors.

WARFIGHTER SUPPORT...



... FROM THE FORCE PROJECTION BASE...

...TO THE DIGITIZED BATTLEFIELD



Standard Army Management Information Systems (STAMIS)

MISSION: To plan, design, develop, acquire, install, and maintain highly complex management information systems to support the warfighter from the force projection base to the battlefield.

CHARACTERISTICS: The Standard Army Management Information Systems (STAMIS) programs acquired by PEO STAMIS are diverse based on the size and variety of products (computer hardware and software systems) and the breadth of customers. Programs include: Standard Installation/Division Personnel System (SIDPERS); Joint Recruiting Information Support System (JRISS); Personnel Electronic Records Management Systems (PERMS); Joint Computer-aided Acquisition and Logistic Support (JCALS); Sustaining Base Information Services (SBIS); Acquisition Information Management (AIM); Department of the Army Movements Management System (DAMMS); Objective Supply Capability (OSC); Standard Army Ammunition System (SAAS); Standard Army Maintenance System (SAAS); Standard Army Maintenance System (SAMS); Standard Army Retail Supply System (SARSS); Standard Property Book System (SPBS); and Unit Level Logistics Systems (ULLS). The span of STAMIS programs is Defense-wide and world-wide to provide the warfighter a modern power projection platform to support peacetime operations, training, mobilization, force projection, split-based operations and redeployment. As an integral part of the Army enterprise Strategy, STAMIS programs acquire integrated systems using commercial technology that meets validated needs.

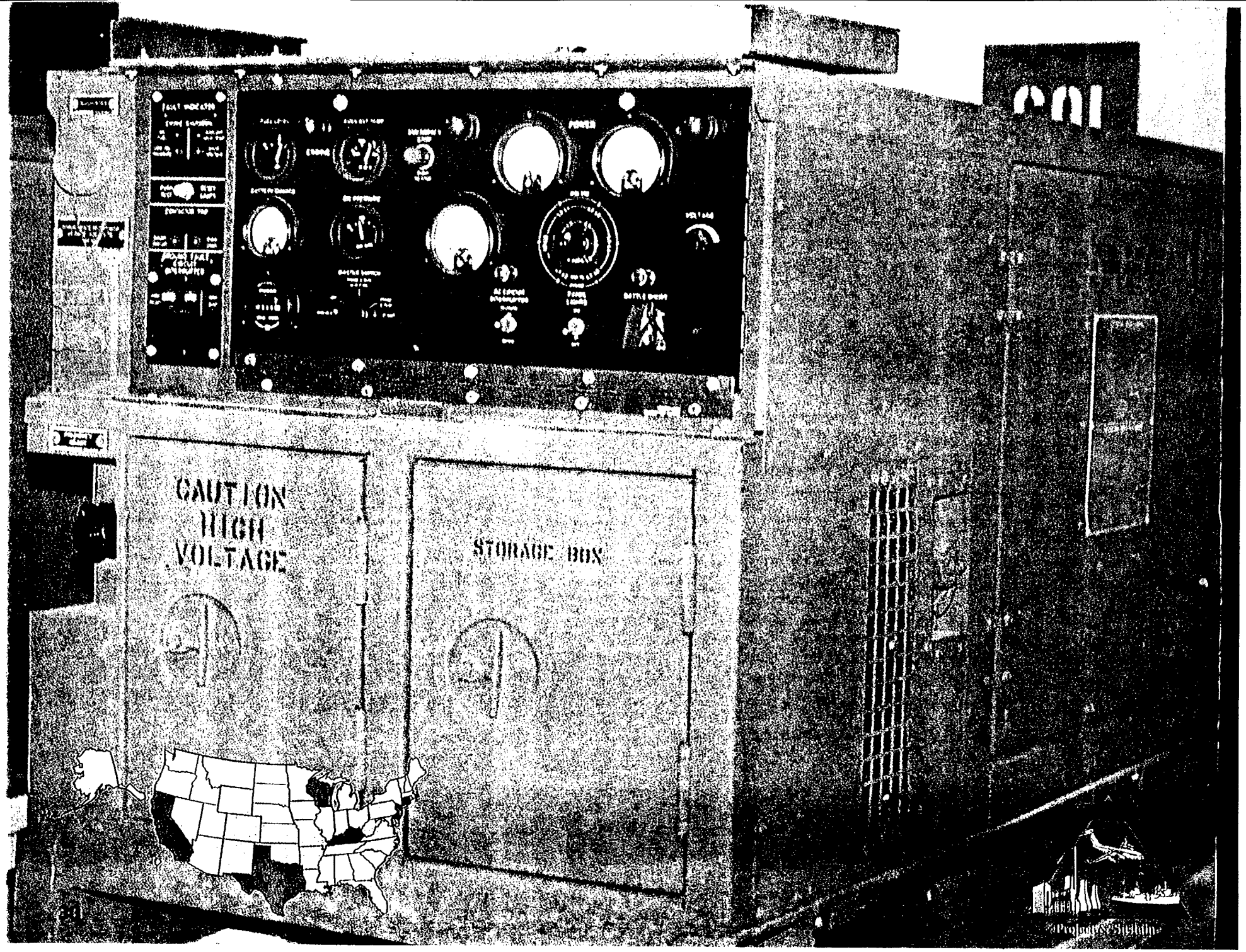
FOREIGN COUNTERPART: No known foreign counterpart.

FOREIGN MILITARY SALES: No foreign military sales.

PROGRAM STATUS: The STAMIS programs are at various states of life cycle management. JCALS competitively awarded an A-109 contract in December 1991; SBIS competitively awarded an A-109 contract in June 1993. Commercial off-the-shelf hardware and software, to the maximum extent possible, are used by STAMIS programs. Other STAMIS programs use various Indefinite Delivery/Indefinite Quantity contracts and/or government software development centers. PERMS has completed fielding of basic systems to the four Army records sites and enhance the systems.

PROJECTED ACTIVITIES: SBIS: Initial Operational Test & Evaluation and Milestone II/III in FY97 to commence fielding of the initial software increment. JCALS: Initial Operational Test & Evaluation and Milestone III in FY97 to fully deploy 269 DoD sites. SIDPERS: JRISS and AIM institute prototyping and complete a Milestone I. The logistics programs will continue to develop, test and field improved capabilities. SIDPERS-3: Testing of "fun" data at three sites. SIDPERS-3 will complete operational assessments and seek Milestone III approval.

CONTRACTOR: JCALS: Computer Sciences Corporation (Moorestown, NJ)
PERMS: PRC, Inc. (McLean, VA)
SBIS: Lockheed Martin (Bethesda, MD)


CAUTION
HIGH
VOLTAGE
STORAGE BOX

Tactical Quiet Generators (TQG)

MISSION: The Tactical Quiet Generators (TQG) provide lightweight, less detectable, and more survivable electric power to units and equipment in a field environment.

CHARACTERISTICS: The TQG are the new DoD standard family of tactical electric power sources. The 5 kW-60 kW TQG provide DoD with "single fuel" sets that are more reliable, provide improved mobility (decreased weight), reduce noise and infrared (IR) signatures, are survivable in a nuclear environment, and provide quality electric power for command posts, C3I systems, weapon systems, logistics and maintenance functions, and other battlefield support equipment. The new power generators will limit a threat force's ability to locate critical targets through reduced aural and thermal signatures.

	Current Fleet Performance	TQG Requirements
Aural signature:	79-85 dBA @25 m	70 dBA @7 m
Fuel:	GAS/DSL/JP4	JP8/DSL
Hertz:	DC 50/60/400	DC 60, 50/60, 400
HAEMP:	No	Yes
IR suppressed:	No	Yes
Reliability (MTBOMF):	140-180 hr	500-600 hr
Standard voltage connections:	Yes	Yes
Slave receptacle:	Ordnance	NATO

FOREIGN COUNTERPART: No known foreign counterpart.

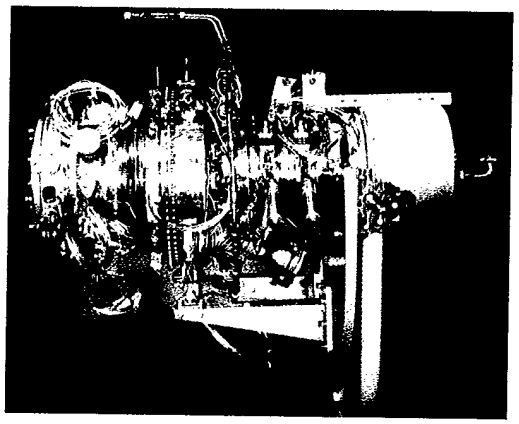
FOREIGN MILITARY SALES: Tactical Quiet Generators (TQGs- 5-60 kW) have been adopted as standard equipment by the Canadian military. Foreign military sales of TQGs in support of Air Defense systems have also increased in recent years.

PROGRAM STATUS: The first unit equipped for the 5-60 kW was Ft. Bragg in December 1993. 5-60kW generators were fielded to Ft. Drum, Ft. Campbell, Ft. Benning, Ft. Bragg, and Aberdeen Proving Ground during FY94. During FY95, 5-60kW generators were fielded to Ft. Huachuca, Ft. Gordon, Ft. Lewis, Ft. Hood, Ft. Bliss, and Ft. Knox. During FY96, 5-60kW generators were fielded to Ft. Sill, Ft. Polk, Ft. Irwin and Ft. Riley.

PROJECTED ACTIVITIES: Fielding of generators will continue through FY02.

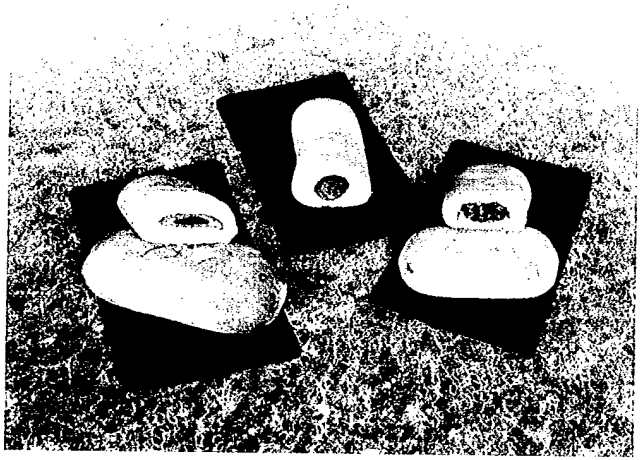
PRIME CONTRACTORS: 5-60kW and 3 kW TQGs: Fermont (Bridgeport, CT)
30 and 60 kW TQG-Re-Engine: MCII (Dallas, TX)
2 kW TQG: Dewey Electronics (Oakton, NJ)
10 kW APU: KECO Industries (Florence, KY)
5 kW APU and 3 kW TQG: Goodman Ball (Menlo Park, CA)
3 kW TQG: T and J Manufacturing (Oshkosh, WI)

Integrated High Performance Turbine Engine Technology (IHPTET) (1989-2003)



The IHPTET initiative is a DoD, NASA, and industry turbine engine technology program that embodies virtually all government-sponsored research and development efforts devoted to advancing aircraft and missile turbine engines. The goal of IHPTET is to double turbine engine propulsion capability by the turn of the century. It covers both military and commercial applications in three categories: (1) man-rated thrust (fixed wing), (2) man-rated shaft (rotorcraft), and (3) expendable engines (missiles). IHPTET advancements will result from the synergistic effect of combining advanced material developments, innovative structural designs, improved aerothermodynamics, and component integration. The Army's principal contribution is in a 6.3 technology demonstrator called the Joint Turbine Advanced Gas Generator (JTAGG). JTAGG II will reduce specific fuel consumption by 30% and improve power to weight ratio by 80% over the T700 engine baseline by FY97 with additional improvements projected out to 2003. The IHPTET initiative will guide development of new aircraft and missile turbine engine technology from component development to demonstration. In this manner, advanced components and technologies should be ready for transition to weapons systems at lower technical risk and cost, provide greatly improved engine performance, and continue the civil and military excellence of the U.S. in aircraft and missile gas turbines. Supports: RAH-66 Comanche, AH-64 Apache Improvement, Joint Transport Rotorcraft.

Family of Operational Rations (FOR)



The FOR is a scenario-driven ration development program that supports highly mobile and forward deployed troops with innovative, highly acceptable components, suitable for use in arctic, jungle, desert, mountain and urban areas under all climatic conditions. The FOR represents technologically advanced food systems that consist of mobility enhancing, eat-out-of-hand components that represent an innovation to field feeding. These unique components such as sandwiches, dessert snacks and multi-functional performance enhancing components allow for eat-on-the-move capability, while providing high quality, familiar foods. Technology demonstrations have provided extremely positive feedback from soldiers and will serve as the basis for developing future rations to meet the requirements for Army Field Ration 2000. Supports: DoD Joint Food Program.

Battery Technology

Improved lithium-ion rechargeable batteries have been designed, under a DARPA-TRP, by the CECOM-RDEC in conjunction with a contractor, and as a result there is now a domestic manufacturing capability for these batteries. In addition, the first rechargeable lithium-ion battery (BB-284/U) is now being fielded to support the Thermal Weapons Sight. These new rechargeable batteries have 2-3 times the energy density of nickel-cadmium batteries. In the field of primary batteries, prototype lithium-manganese dioxide 5590-size batteries have been designed and fabricated in conjunction with a contractor, and initial samples have 1.5-2 times the energy content of the current primary battery. Although it will take some time to work out safety and low-temperature performance issues, these have high potential for use in the future.

Intelligent Vehicles The Unmanned Ground Vehicle (UGV) technology development and demonstration program is an OSD/DARPA sponsored research and demonstration effort for which the Army Research Laboratory has been the technical manager. This program has been national in scope with the involvement of over 40 co-contractors drawn from academia, government laboratories and private industry. The continuing maturation of UGV technologies utilizing semi-autonomous vehicle navigation technologies; as well as advanced reconnaissance, surveillance, and target acquisition (RSTA); and new automated mission planning communication techniques; will provide novel tactical and support options to the future warfighter. Intelligent vehicles will give the commander the ability to multiply his force and conduct continuous combat operations. They will also generate a new capability for him to detect and target enemy forces throughout the entire battlefield. Multiple UGV-based observation platforms will provide commanders a better overview of the battlefield situation as part of the Army's Battlefield Digitization efforts. A Demo II phase of this effort was successfully concluded in June 1996 with an extensive series of field exercises coordinated with TRADOC at Fort Hood culminating in a Battle Lab Warfighting Experiment conducted by Fort Knox's Mounted Maneuver Battlespace Laboratory. Three intelligent UGVs were successfully integrated into field exercises at Fort Hood, were controlled by III Corps troops, and performed mission efforts in forward observer, maneuver on urban terrain (MOUT), reconnaissance, and security. Earlier in the program as a prelude to Demo II, a soldier controlled semi-autonomous UGV was integrated into actual Brigade-level Armored Cavalry field exercises at Fort Hood. These exercises demonstrated the potential of semi-autonomous UGVs to act as force multipliers for combat missions and their ability to extend stand-off ranges for soldiers in high risk missions. Key technologies developed during this program include: intelligent vehicle architecture, autonomous navigation, reconnaissance, surveillance, and target acquisition (RSTA), passive stereo for mobility and perception, and advanced planning tools to support tactical deployment of intelligent vehicles. The Next Generation UGV program, currently being formulated by OSD and the Army for 1997-2001, will focus on technologies providing higher speed maneuver for day/night and adverse weather operations, UGV survivability, and the effective interface of UGV derived data into the digital battlefield.

Joint Logistics ACTD (Phase I) The Joint Logistics Advanced Concept Technology Demonstration (JL-ACTD) Phase I, also known as Logistic Anchor Desk (LAD) provides operational users such as CINCs and JTF Commanders with increased capability to rapidly plan and execute more responsive and efficient logistics support to military operations. A prototype network of workstations connect operational planners and logisticians across military services and command echelons, enabling a better understanding of the impact of information technology to increase the effectiveness and efficiency of military logistics for a twenty-first century force. The focus of LAD is decision support tools with core functionalities that include advanced data distribution and visualization techniques to provide a common, relevant logistics picture. Integration of existing logistics analysis models with knowledge-based tools provide powerful decision support to leaders. This capability is a plus to the total asset visibility effort. In October 1995, senior logisticians in Europe requested LAD support for the Operation Joint Endeavor crisis action planning underway for deployment into Bosnia, Since then LAD sites have been providing increased operational capabilities to senior logisticians and their staffs over a variety of operational issues in EUCOM, USACOM, CENTCOM and supporting sites.