

ATP 4-45 (FM 4-20.07)

Force Provider Operations

November 2014

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Headquarters Department of the Army

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FORCE PROVIDER OPERATIONS

Contents

	Page
PREFACE	iii
INTRODUCTION	iv
Chapter 1	
FORCE PROVIDER OVERVIEW	1-1
Force Provider Module and the Quartermaster Force Provider Company	1-1
Capabilities	1-3
Limitations.....	1-3
Dependencies.....	1-4
Summary	1-5
Chapter 2	
QM FORCE PROVIDER COMPANY	2-1
Quartermaster Force Provider Company	2-1
Service And Support Platoon.....	2-2
Force Provider Platoon (Heavy)	2-3
Force Provider Platoon (Light).....	2-6
Administrative, Chaplain, Medical, and MWR	2-7
Chemical, Biological, Radiological, and Nuclear Operations.....	2-7
Attached Units	2-7
Prime Power Team	2-8
Summary	2-8
Chapter 3	
FORCE PROVIDER MODULE	3-1
Force Provider Equipment	3-1
Conditions Affecting System Performance	3-3
Summary	3-4
Chapter 4	
DEPLOYING FORCE PROVIDER	4-1
Requesting Force Provider Module Support.....	4-1
Deployment of Force Provider Module	4-1

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***This publication supersedes FM 4-20.07 dated 29 August 2008.**

Contents

	Site Planning And Site Selection Considerations	4-2
	Site Preparation.....	4-5
	Subsystem Special Preparation	4-8
	Nonmilitary Resources and Support	4-9
	Module Setup	4-9
	Redeployment	4-10
	Site Restoration.....	4-11
	Summary.....	4-11
Chapter 5	FORCE PROVIDER ENVIRONMENTAL GUIDANCE AND SAFETY TECHNIQUES	5-1
	Operational Energy	5-1
	Waste management considerations	5-2
	Environmental Responsibilities	5-3
	Environmental Protection Stewardship Goals and Requirements	5-3
	Environmental Protection Considerations	5-3
	Promoting Safety Awareness	5-5
	Summary.....	5-7
Appendix A	FORCE PROVIDER MAJOR COMPONENTS.....	A-1
Appendix B	FORCE PROVIDER COLD WEATHER KIT.....	B-1
Appendix C	FORCE PROVIDER PRIME POWER KIT	C-1
Appendix D	FORCE PROVIDER EMERGING CAPABILITIES	D-1
Appendix E	FORCE PROVIDER ENVIRONMENTAL GUIDANCE AND SAFETY TECHNIQUES	E-1
	GLOSSARY	Glossary-1
	REFERENCES.....	References-1
	INDEX	Index-1

Figures

Figure 2-1. Organization of Quartermaster Force Provider Company	2-1
Figure 4-1. Ground elevation relationships of subsystems	4-7
Figure 4-2. Force Provider module notional layout (150-person).....	4-10

Tables

Table 4-1. Shipping estimates for air, rail, and linehaul modes	4-1
Table 4-2. Existing conditions	4-6
Table 4-4. Minimum distances between facilities.....	4-7
Table 5-1. Headspace for containers	5-5
Table A-1. Force Provider major components.	A-1
Table B-1. Force Provider cold weather kit.	B-1
Table C-1. Force Provider prime power kit.	C-1

Preface

Army Techniques Publication (ATP) 4-45 supersedes field manual (FM) 4-20.07 and provides insight, general data and operational information for commanders, supervisors, and other personnel, including contractors, concerned with Force Provider Operations. It addresses the key life support aspects of performing the Army sustainment mission of base camp sustainment. The focus is on Force Provider company operations, Force Provider modules, responsibilities, equipment, deployment, and redeployment. Doctrine is not intended to cover garrison operations, but should serve as a guide for training and operations in garrison to prepare for combat.

The principal audience for ATP 4-45 is all members of the profession of arms. Commanders and staffs of Army headquarters serving as joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases, host-nation laws and regulations. Commanders at all levels ensure that their Soldiers operate IAW the law of war and the rules of engagement. (See FM 27-10).

ATP 4-45 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which this ATP 4-45 is the proponent publication (the authority) are italicized in the text and marked with an asterisk (*) in the glossary. Terms and definitions for which ATP 4-45 is the proponent publication are boldfaced in the text. For other definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition.

ATP 4-45 applies to the Active Army, Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent of ATP 4-45 is the U.S. Army Quartermaster School. The preparing agency is the G-3 Doctrine Division, USACASCOM. Send comments and recommendations on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*), to Commander, United States Army Combined Arms Support Command, ATTN: ATCL-TS (ATP 4-45), 2221 Adams Avenue, Building 5020, Fort Lee, VA 23801-1809; or submit an electronic DA Form 2028 by email to usarmy.lee.tradoc.mbx.lee-cascom-doctrine@mail.mil.

Introduction

Commanders must bear in mind the stressful effects of combat as they plan and conduct operations. The pressures that battlefield chaos and destruction place on Soldiers have always been great. Unit discipline, realistic field training, deliberately fostered unit cohesion, and solid bonding between leaders and subordinates can reduce the effects of this stress in part, but nothing can eliminate it. The commander who understands this and protects his Soldiers through strong, positive, and caring leadership, proper mental, physical and training preparation, and simple decisive plans will win. The purpose of the Force Provider program is to improve the quality of life for deployed Soldiers.

Force Provider operations provide life support capabilities for Soldier sustainment; humanitarian and civic assistance; disaster relief; and non-combatant evacuation operations. Force Provider operators are expected to be an essential component of joint, multinational, and expeditionary operations, fully capable of responding to requirements along the entire operational mission continuum.

ATP 4-45, Force Provider Operations, is the revision of FM 4-20.07, Force Provider Company. ATP 4-45 provides logisticians an understanding of the Force Provider's mission, concept and operations. ATP 4-45 makes numerous changes from FM 4-20.07. The most significant change is the implementation of a more modular/scalable base camp system that is completely self-contained, lightweight, and rapidly deployable. The Force Provider was previously a 600 person base camp life support capability. It has been updated and reconfigured into 150 person modules which are completely self-contained, lightweight and rapidly deployable and employable. These modifications allow Force Provider to provide base camp life support in scalable 150 increments. Additionally, there are a limited number of 50/75 person modules. The 50/75 person modules are intended to be a stand-alone capability and do not include all the capabilities found in a 150 person module nor most of the Force Provider add-on capabilities which are intended for use at 600 person and larger sites.

Chapter 1 provides an overview of the Quartermaster Force Provider Company and Force Provider module. The chapter focuses on the concept, capabilities, limitations, and dependencies.

Chapter 2 focuses on the unique composition of the Quartermaster Force Provider Company, its function, operational procedures, and attached units.

Chapter 3 covers the Force Provider module major subsystems, capabilities, add-on kits, and conditions that effect the performance of the module.

Chapter 4 focuses on the deployment planning considerations and redeployment of Force Provider Company and Force Provider module.

Chapter 5 discusses Force Provider Operational Energy, environmental guidance, and safety procedures.

ATP 4-45 does not introduce, rescind, or modify any terms.

Chapter 1

Force Provider Overview

Force Provider provides Soldier support during deployments by enhancing Soldier living conditions on base camps. It brings a wide array of field services to support theater operations throughout all sustainment phases. Force Provider operations consists of two elements; the Force Provider module and the personnel required to assemble and operate the modules. This chapter provides an overview of the Force Provider module and the Quartermaster Force Provider Company. It also discusses the capabilities, limitations, and dependencies of the Quartermaster Force Provider Company and Force Provider modules.

FORCE PROVIDER MODULE AND THE QUARTERMASTER FORCE PROVIDER COMPANY

1-1. Force Provider is the Army's life support system for base camps. Force Provider was created as a result of the challenging living conditions experienced by our Soldiers during Operation Desert Shield/Storm. Force Provider is a modular system consisting of military and commercial equipment such as climate-controlled billeting, quality food preparation and dining facilities, hygiene services, and morale, welfare and recreation facilities.

1-2. The Quartermaster (QM) Force Provider Company Table of Organization and Equipment (TOE) 42420R000 and the Force Provider system, itself, are separate entities which are linked up in the theater of operations or another specifically designated area. The Force Provider modules are not organic to the QM Force Provider Company until requested and are maintained as part of the United States Army Materiel Command (USAMC) Army pre-positioned stocks. Commands desiring the QM Force Provider Company support will forward requests through the command channels to the Theater Sustainment Command (TSC), which will be responsible for tasking the Force Provider Company. Force Provider support to civil authorities (disaster relief, humanitarian assistance) will be accomplished IAW procedures outlined in ADRP 3-28, *Defense Support of Civil Authorities*.

FORCE PROVIDER MISSION

1-3. The Force Provider provides the front line Soldiers a brief respite from the rigors of combat, supports a task force during theater reception, rest and refit, redeployment, and provides life support capabilities (billeting, feeding, laundry, shower, and latrines) at base camps. The Force Provider modules may be used in support of major combat or stability operations such as foreign humanitarian assistance, noncombatant evacuation, disaster relief, peace keeping or peace enforcement operations.

QM FORCE PROVIDER COMPANY EMPLOYMENT

1-4. The QM Force Provider Company may be employed to meet any of the missions stated above. When used for its primary mission, the company will normally be organized IAW its current Table of Organization and Equipment. The unit will be issued Force Provider modules from Army pre-positioned stocks and normally attached to an appropriate element of the Army Service Component Command's (ASCC) TSC. In some instances, Force Provider modules or platoons may be attached to a joint task force, a sustainment brigade, a combat sustainment support battalion, or can be a stand-alone system located as far forward as a Brigade Combat Team.

1-5. QM Force Provider elements may be employed serving Soldiers in a geographical area; or may be employed in support of a brigade-sized unit. In either case, the Force Provider Company will remain under the control of the command to which it is attached. Theater command structure and the Force Provider mission for each deployment will determine its exact assignment.

FORCE PROVIDER OPERATORS

1-6. The Force Provider modules may be deployed by military, civilian/contractor or by a combination of military and/or civilian/contractor personnel who have the proper military occupational skills and training. Below are three options for deployment operations:

- All Military. A military unit may operate the module, or modules, depending on the number in use for the operation. These personnel would come from the QM Force Provider Company or may be other unit Soldiers who have the appropriate military occupational specialties and are properly trained.
- Combination of Military and Nonmilitary. The modules may be operated by any combination of military personnel, Logistics Civil Augmentation Program (LOGCAP) performance contract employees, other Department of Defense contract employees, and/or host-nation support personnel. Contracted personnel are not within the chain of command and are governed by the terms and conditions of a contract. Commanders have direct authority only for matters of administrative procedures and requirements, force protection, and safety of the force. Commanders will appoint a properly trained and qualified individual for appointment as a contract officer representative by the contracting officer. The contract officer representative will provide the operational commander with a primary oversight point of contact to ensure that the contracted support is being executed IAW the terms and conditions of the contract. A translator or interpreter may be required for this type of scenario. The contract may allow civilian augmentees to reside within and receive subsistence from the Force Provider support operations in use.
- All Contractor Personnel. Modules may be operated entirely by LOGCAP contractors independent of military control. The contractor will operate the Force Provider modules under the general control of the applicable ASCC. All TOE equipment, with the exception of weapons, will be required for normal operation. If not supplied by the contractor, additional items must be provided as government-furnished equipment. The contractor must accept complete accountability for all government-furnished equipment and perform operator and unit level maintenance IAW appropriate technical manuals (TM). The contractor will require the same dependencies as a military unit, unless otherwise specified in the performance work statement, and defense against Level I threats will require augmentation.
 - LOGCAP is uniquely suited to conduct Force Provider operations. The LOGCAP service contract was designed to seamlessly integrate into current and future operations and provide a complete service package with Force Provider that is responsive to the command's needs in a dynamic and changing operational environment.
 - Agile change management provisions in the LOGCAP contract allow for adapting to changing conditions and integrating service add-ons to the Force Provider module. It cannot, however, provide defensive capability in any threat environment and must be provided force protection by the supported activity. All other provisions and preparations identified for the QM Force Provider Company and platoon apply to the LOGCAP contractor.

AVAILABILITY OF FORCE PROVIDER MODULES

1-7. Force Provider modules are available to support contingencies throughout the world. They are completely containerized or trailer mounted to facilitate movement by any combination of land, air, and sea transportation modes. Modules are maintained as Army pre-positioned stocks, and are stored in depots or aboard ships.

1-8. USAMC maintains storage responsibility of the Force Provider modules. Requests for Force Provider modules follow command channels to Headquarters, Department of the Army (HQDA). Once a module has

been approved for deployment by HQDA, USAMC arranges transportation for the module and maintains ownership until it is hand receipted to the Force Provider Company commander, unit commander on ground, or supervisory contractor at the approved operating site. These individuals are then responsible for the module and accountable for all of its equipment. All Force Provider modules and add-on kits will be accounted for IAW Army Regulation (AR) 735-5, *Property Accountability Policies*, and AR 710-2, *Supply Policy Below the National Level*. System setup is accomplished by the Force Provider company personnel, tenant unit personnel, Product Manager Force Sustainment Technical Assistance Team personnel and/or contractor personnel depending on availability in theater.

CAPABILITIES

1-9. The QM Force Provider company is capable of operating one to 24 independent Force Provider modules. Each module supports up to 150 Soldiers/customers, including the company's operator staff. When all 24 modules are employed with a QM Force Provider Company, it is capable of supporting up to 3,600 Soldiers/customers including the required operator staff. The modules are scalable in 150 person increments. When multiple modules are collocated they will be operated and maintained as a single entity. The limited number of 50/75 person modules is considered stand-alone entities. However, the operation of each module will typically remain distinct.

1-10. Support capabilities of a single 150-person module are:

- Climate-controlled billeting for 150 tenant personnel including Force Provider operators.
- Sanitary climate-controlled showers sufficient for one 10-minute shower per person/per day.
- Sanitary, climate-controlled latrines.
- Food service, to include up to three cook-prepared meals daily.
- Laundry services.

1-11. Lessons learned from recent operations led to the development of improved packaging of the 150-person modules which enables each increment to operate independently. Specific characteristics of this enhanced capability include:

- Improved modularity and scale-ability to support any Joint land operation, large or small.
- Improved adaptability to support small forward operating bases for combat operations.
- Improved deployability through the increased use of triple container (TRICON) packaging.
- Reduced operational manpower and transportation requirements.
- Reduced set-up and tear-down time requirements (one to two days with eight trained personnel and materiel handling equipment) for one 150 person module.
- Improved billeting/shelters through the use of state-of-the-art Tent, Extendable, Modular, Personnel (TEMPER) air structure support tents.
- Improved field feeding, hygiene and laundry sub-systems.
- Improved reliability of Environmental Control Units (ECU).
- Improved environmental stewardship through the adoption of water re-use technology.

LIMITATIONS

1-12. Employment of the Force Provider module demands a well thought-out, deliberate effort. While the module offers attractive amenities for the deployed Soldier, the following limitations of the module and QM Force Provider Company should be considered:

- **Size.** A single Force Provider 150 person module requires approximately 1 acre of land space and site preparation. The packaged module is comprised of TRICONS, skid-mounted generators, and other assorted self-storing items. Set-up time for each module is one to two days, from the time of breaking the seal of the containers to operational status. The module requires eight trained personnel with materiel handling equipment for set up operations. Four collocated 150 person modules, with the add-on All-Electric Kitchen and MWR kit, will require three to six acres of land space and site preparation. It is packaged like the 150 person module but on a

larger scale. Set-up time is approximately eight to fourteen days, depending on site preparation required, to acquire a complete operational status. These hours and days are driven by the expertise, quantity and quality of personnel designated to set-up operations, in addition to other variables such as manpower, material, terrain and operating tempo.

- **Mobility.** Although not originally designed for redeployment within theater, current and future versions can be used in that fashion, as long as proper care is rendered to the equipment. Force Provider is, however, intended to be set up/in place from 45 days to two years.
- **Defensibility.** The QM Force Provider Company is only able to defend itself against a Level I threat. It must depend on external support for threats higher than Level I.

DEPENDENCIES

1-13. The Force Provider Company is dependent upon other units for essential support throughout all stages of its deployment and employment. Engineering and maintenance support above the field level is required from supporting units in the area of operations (AO). Force Provider's reliance on external unit capabilities makes it essential that the mix and match of units and their distribution and location on the battlefield promotes the ability to support Force Provider requirements.

TRANSPORTATION

1-14. The Force Provider system is heavily dependent on strategic and theater level transportation assets for movement from the pre-positioned location to the AO. The QM Force Provider Company does not own the module, nor does it have the organic equipment required to transport it. USAMC has storage responsibility of the modules and is responsible for the transport of the modules to the operating site. See paragraph 4-3 for more information.

REAL ESTATE ACQUISITION

1-15. Real estate acquisition is a key task in support of site selection. The combatant commander's staff is responsible for the coordination of real estate requirements within their area of responsibility. The United States Army Corps of Engineers (USACE) contingency real estate support teams, naval facility real estate personnel, and the Air Force Real Property Agency have experts who can deploy or provide reachback in support of these requirements. The contingency real estate support team is a deployable team which can support any echelon, but it will typically be tailored to support an Army component headquarters configuration with support missions requiring real estate management. This team operates as augmentation to the supported force engineer staff or supporting engineer headquarters.

1-16. The site may be acquired either through host-nation support or via lease. In some cases, real estate acquisition may determine the site selection. In a favorable location, approximately 48 hours is required to prepare the site before setup can begin. Seventy-two hours should be allowed to prepare a site in a fair location (uneven terrain, excess brush/trees, partially stable soil, and poor drainage). For a poor location (rough/hilly terrain, dense vegetation, unstable soil and poor drainage), approximately 96 hours should be allowed to prepare the site.

ENGINEERING ASSETS

1-17. Appropriate engineering units will be required for site survey, layout, and site preparation. Once Force Provider is set up, engineering support will be required for real property maintenance activities, which may include prime power, utilities maintenance, firefighting and dust abatement services. Actions of this nature should be coordinated with the TSC or ASCC. Four 150 person Force Provider modules, co-located, may generate 20,000 gallons of grey water and 3,000 gallons of black water per day. Solid waste disposal must be coordinated IAW the civil engineering support plan, or the ASCC operations plan. See FM 3-34.5, *Environmental Considerations* for more guidance and compliance information on solid waste disposal.

SUPPLY AND MAINTENANCE SUPPORT

1-18. Support for Force Provider above unit level will be required to provide classes I, II, III, IV, VI, VII and IX supply support, as well as communications/communications security field maintenance and recovery operations. The unit depends on line haul or local water production/purification units for potable water supply if commercial sources are not available. Bulk water resupply requirements have been reduced through the incorporation of the shower water reuse system (SWRS) and efforts are underway to include laundry water recycling as well.

ARMY HEALTH SYSTEM SUPPORT

1-19. The unit depends on supporting medical units for Army Health System support. For more information on the Army Health System support required, refer to FM 4-02, *Army Health System*.

CHAPLAIN

1-20. The unit depends on a local unit ministry team for religious support. For more information on religious support see ATP 1-05.03, *Religious Support and External Advisement*.

UNIT DEFENSE

1-21. The Force Provider Company will fall under the general force protection plan for the area in which it is operating. The unit's force protection plan is generally submitted to and coordinated with the combat sustainment support battalion or higher headquarters operations staff officer. The Force Provider unit is able to protect itself against a Level I enemy incursion.

MORALE, WELFARE, AND RECREATION (MWR) AND AAFES SUPPORT

1-22. Morale, Welfare, and Recreation operations are supported by personnel provided by the Community and Family Support Center or from the pool of volunteer MWR specialists. Army and Air Force Exchange Service (AAFES) operations require external coordination and could include military clothing sales, food court, barber shop and other forms of support depending on availability in the AO. This capability is typically available when multiple Force Provider modules are co-located supporting 600 or more personnel.

SUMMARY

1-23. The Force Provider is the Army's premier base camp life support capability, which provides Soldiers improved quality of life. Its modular design has allowed the warfighter to be supported with a better means of living as far forward as a brigade combat team's AO.

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Chapter 2

QM Force Provider Company

The Force Provider Company exercises overall mission command and provides training, administration, and logistical support required to conduct operational support. This chapter describes the organization of the Force Provider Company and its functional sections. The composition of the Force Provider Company, its attached units, defense considerations requirements and chemical, biological, radiological and nuclear operations will also be addressed within the discussion. Figure 2-1, below, shows the Quartermaster Force Provider Company basic unit organizations.

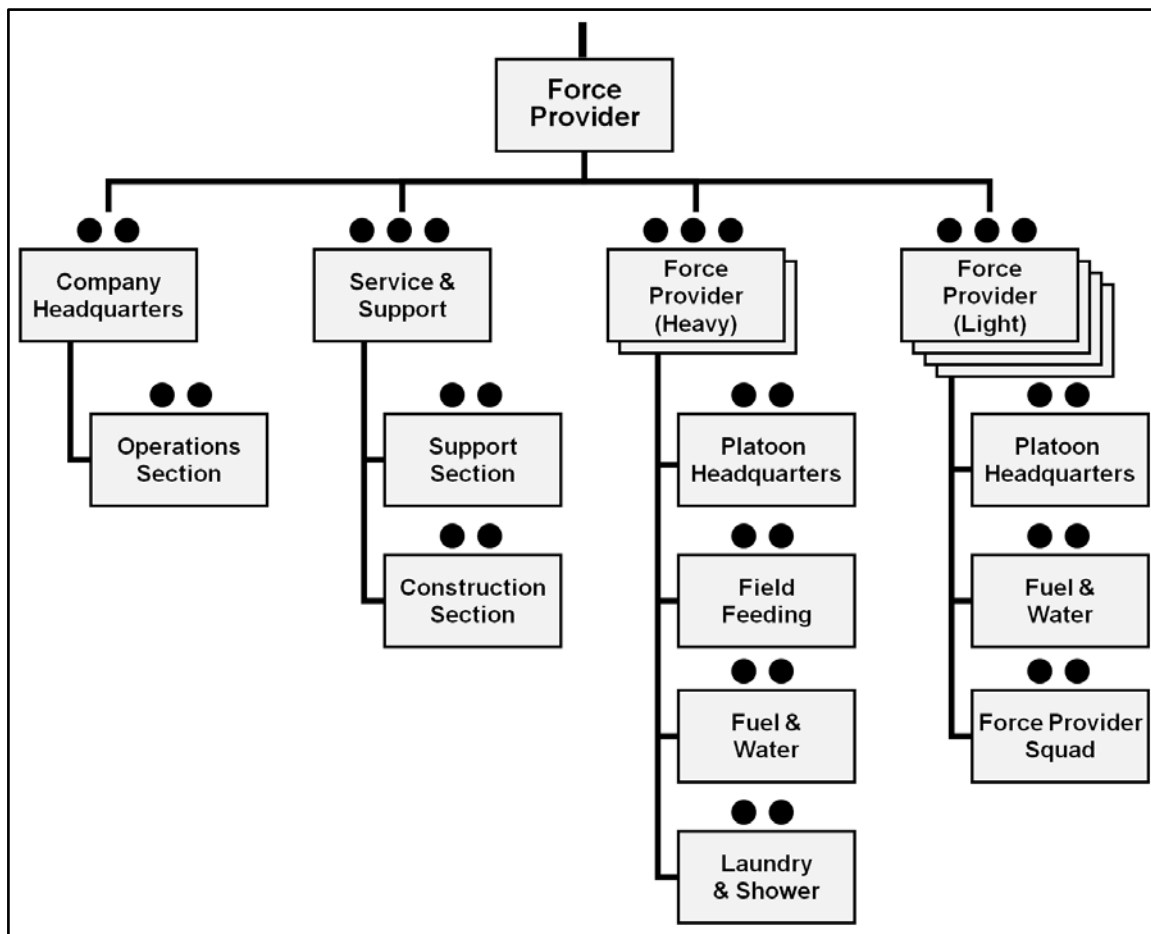


Figure 2-1. Organization of Quartermaster Force Provider Company

QUARTERMASTER FORCE PROVIDER COMPANY

2-1. The Force Provider Company (as a structure company) will be employed in direct support of a 3,600 personnel element or a base. The Force Provider Company is modular and can be employed in direct support of a 600 personnel element (broken into four 150 personnel elements), incrementing up to

approximately 3,600 personnel. It may also be employed to provide support for reception, staging, onward movement and integration, redeployment or stability operations such as humanitarian aid, noncombatant evacuation, disaster relief, peace keeping/peace enforcement operations.

COMPANY HEADQUARTERS

2-2. The company headquarters staff provides mission control, training, administration, and logistical support, and Chemical, Biological, Radiological and Nuclear (CBRN) defense support required to conduct operations of one Service and Support Platoon and from one to six Force Provider Platoons (Heavy and Light).

2-3. The company headquarters also plan and coordinate operations and provide technical expertise. It receives operational orders and/or guidance from the Combat Sustainment Support Battalion or a higher headquarters. The company headquarters is normally employed above brigade level and to civil authorities during exigencies such as disaster relief.

OPERATIONS SECTION

2-4. The operations noncommissioned officer monitors and supervises section operations and advises the company headquarters on tasks involving Force Provider operations and procedures. The laundry noncommissioned officer coordinates all laundry and shower functions including administrative actions. He reports to and advises the operations noncommissioned officer.

2-5. The mortuary affairs specialist performs duties relating to deceased personnel to include recovery, collection, evacuation, establishment of tentative identification. Additionally, the mortuary affairs specialists plan and supervise search and recovery operations of deceased personnel, personal effects, and identification media.

SERVICE AND SUPPORT PLATOON

2-6. The Service and Support platoon provides engineer capability to support site preparation, maintenance, and facilities maintenance. It also provides for the receipt, storage, and issue of CL III (B) in support of the Force Provider Company. Additionally, the Supply and Services platoon provides maintenance capability for the Force Provider Company.

2-7. The support section personnel operate and maintain power generation equipment when organic generators are used. When in use, the generators will be clustered in groups of three. Operations within each cluster will be rotated every seven hours on a two-on and one-off schedule. This rotation will allow preventive and corrective maintenance to be performed without interruption of power to subsystems. A simple switching network is designed into each generator cluster to facilitate this rotation. If commercial or prime power is used, organic generators should be arranged to provide backup power support if an outage, overload, attack, or sabotage occurs.

2-8. The support section and the six platoon maintenance teams (organic to the six platoon headquarters) provide field level maintenance to 10-30 level technical manual standards IAW AR 735-5, *Property Accountability Policies*, for all organic equipment except communications security, communications-electronics equipment, and recovery operations. Organic equipment includes wheeled vehicles, forklifts, generators, tents, ECUs (heaters/air conditioners), refrigerators, laundry and bath units, fuel and water systems, lighting units, and plumbing fixtures. The current Sustainment Information System of record will be used for maintenance operations, maintaining equipment, and requisitioning repair parts. Other critical areas of responsibility for the maintenance personnel include: equipment operator qualification and testing; equipment dispatch control; vehicle recovery operations; equipment damage assessments; scheduling, conducting and recording of preventive maintenance checks and services; equipment fault records; materiel readiness matters and Army Materiel Status System (AMSS) updates; tool and test equipment control and maintenance; safety, environmental and security matter compliance; and the maintenance of technical publication reference material.

PLATOON HEADQUARTERS AND SUPPORT SECTION

2-9. The platoon headquarters provides supervision, coordination, and scheduling for operating elements for the platoon. Moreover, the support section provides retail fuel support and maintenance personnel to provide field level maintenance and recovery for the Force Provider Company.

CONSTRUCTION SECTION

2-10. The construction section provides engineer functional area expertise and capabilities for site preparation and facilities maintenance for the Force Provider modules. The construction section provides supervisory capabilities in areas of interior electrician, plumber, and horizontal construction engineering.

2-11. The construction personnel also maintain electrical subsystems and equipment, pipes, plumbing fixtures, and other equipment. All preventive maintenance will be performed IAW the appropriate TM. A schedule will be maintained by the section leader for performing all applicable preventive maintenance checks and all equipment services will be documented using the approved Sustainment Information System.

2-12. Section personnel conduct routine inspections and preventive maintenance checks and services of assigned equipment. They work with other sections to assist in keeping subsystems fully operational. All malfunctions or problems are documented using the approved Sustainment Information System so that a detailed equipment history can be maintained for each item. This will aid future engineering improvements and provide valuable lessons learned which ultimately will reduce repair time. A representative of the section will be on duty at all times to respond to malfunctions or problems which may occur.

FORCE PROVIDER PLATOON (HEAVY)

2-13. The Force Provider heavy platoon provides full service support for personnel residing in Force Provider facilities. It is capable of supporting a task force during theater reception, rest and refit, and redeployment. The platoon may also be used in support of major combat or stability operations such as humanitarian assistance, noncombatant evacuation, disaster relief, peace keeping or peace enforcement operations.

2-14. The heavy platoon provides support to approximately 600 personnel residing in the Force Provider facilities. Support includes food service, laundry and shower, water distribution, and shelters for billeting and MWR. The heavy platoons may be combined to support larger populations in increments of 600 per platoon.

PLATOON HEADQUARTERS

2-15. The platoon headquarters provides supervision over those activities such as billeting, supply functions, and climate control and provide facility space for basic MWR services. The platoon headquarters also provides maintenance capability for unit equipment and maintenance personnel may augment a supporting maintenance facility. When co-located with the Force Provider company headquarters, maintenance personnel are consolidated.

2-16. The Force Provider platoon headquarters provides basic mission control, training, administration, and logistical support for the operations of one Force Provider module. The platoon headquarters will also supervise billeting and tenant unit in-processing and out-processing functions. Once operations have begun, it will be necessary to make arrangements within the theater for maintenance of equipment and for subsequent resupply of operator and unit level repair parts and material.

2-17. The day-to-day operation of Force Provider will depend on mission, enemy, terrain and weather, troops and support available, time available, civil considerations. The tenant units and Force Provider platoon will communicate daily regarding plans and routines. Force Provider personnel should be made aware of any special activities planned by the tenant units. Likewise, the tenant unit should be made aware of the daily schedule of services and equipment available in the module.

2-18. Soldiers arriving at Force Provider will maintain unit integrity. A representative from the Force Provider platoon headquarters will meet with incoming tenant unit representatives to conduct a briefing concerning camp operations, camp policies, and tenant unit responsibilities.

2-19. Prior to tenant unit occupation of billeting facilities, representatives from both the incoming tenant unit and the Force Provider platoon conduct a walkthrough inspection to determine the condition of the billeting tents and other areas that the tenant will occupy. All discrepancies will be documented and kept on file. The commander or delegated personnel of the tenant unit will make billeting assignments. Tenant unit Soldiers will clean and maintain their billeting area and designated areas of the Force Provider camp. Force Provider personnel will ensure that each billeting tent remains stocked with the requisite cleaning supplies and that a copy of the camp rules, service schedule, and no smoking notices are posted inside each facility. At least one Force Provider Soldier should be assigned to assist tenant units in the resolution of billeting-related issues and that any necessary repairs are accomplished as soon as possible.

2-20. Prior to departure, the tenant unit will police the billeting tents and their other designated areas. A representative of the tenant unit and the Force Provider platoon will conduct a walk-through inspection and record all discrepancies. Any discrepancies not already recorded on the in-processing walk-through inspection document will be assessed. The tenant unit commander will be held accountable for damages. Excessive damage caused by negligence or a lack of discipline will be investigated and punitive action taken as required. A representative of the tenant unit will also check out with the MWR and laundry sections. A tenant unit will not be cleared for departure until all MWR equipment checked out by unit personnel has been accounted for and until all unit personnel laundry has been returned. Platoon headquarters should develop inspection documents and check out forms to facilitate unit out-processing.

FIELD FEEDING SECTION

2-21. The field feeding section of the Force Provider Heavy Platoon provides the capability to prepare and serve up to three cook prepared meals daily, which includes up to the maximum supported personnel capacity of the 600 personnel.

2-22. Food service personnel will maintain sanitary conditions at all times. Field feeding operations are conducted IAW AR 30-22, *Army Food Program*, and technical publications. The food service section leader and designated leaders will perform routine inspections to ensure all food service personnel and kitchen patrol personnel are maintaining proper sanitary conditions.

2-23. The grey water collection system for the food service subsystem contains an in-line grease trap. Grease collected in the trap is contaminated with grey water and is considered hazardous waste. Food service personnel will routinely monitor the grease trap. Grease must be regularly removed and disposed of as hazardous waste by food service personnel. Care should be taken when cleaning the grease trap to prevent personal injury or damage to the environment. Appropriate personal protective equipment will be used. Spills or leaks will be contained and cleaned up. Grease awaiting proper disposal will be stored in approved containers and labeled as hazardous waste.

FUEL AND WATER SECTION

2-24. The Fuel and Water section can store and distribute 4,000 gallons of potable water using Load Handling System Compatible Water Tank Racks (commonly known as the Hippo). Four 150 person modules co-located will also come with an additional 72,000 gallons of storage capability in 3,000 gallon tank. The section provides petroleum storage and distribution using a tank and pump unit to refuel platoon equipment. The section will also have the capability for storage and disposal of grey water and collection of black water.

2-25. The Fuel and Water section can store and distribute 1,200 gallons of petroleum using a tank and pump unit to refuel platoon equipment. Force Provider bulk fuel resupply support is provided through military support units or via certified host-nation sources. All host-nation source fuel to be consumed by the Force Provider system must be tested and certified, meeting established standards.

2-26. Two petroleum distribution section personnel will be available for duty at all times while conducting bulk fuel storage and distribution operations for platoon resupply missions. The primary responsibilities of these personnel are to: monitor bulk fuel usage; receive bulk fuel deliveries from certified sources; issue fuel to vehicles, other equipment and into approved storage containers; perform preventive maintenance on equipment; and complete fuel reports, logs, and forms.

2-27. Petroleum distribution section personnel will ensure that the bulk fuel distribution and storage system and all vehicles and containers are properly grounded during fuel issue or delivery. All bulk fuel distribution and storage sites will be designated as no smoking areas and appropriate signs will be clearly posted in English and the host-nation language. Firefighting equipment will be conveniently available to the site and a fire extinguisher will always be placed within easy access during issue and delivery operations. Petroleum products are also considered hazardous waste and a hazard to the environment and to personnel. All leaks will be contained and cleaned up immediately. Personnel will use appropriate personal protective equipment and avoid direct contact with petroleum products.

2-28. Security of the petroleum storage and distribution sites will be maintained to prevent tampering or sabotage. These sites will be routinely checked by security patrol personnel.

2-29. Electric power generators, when in use, will consume the largest amount of Force Provider operational bulk fuel. Each generator cluster will employ a 1,000-gallon collapsible fabric fuel tank to supplement the generator internal fuel tanks. During normal operations, these fuel drums will require replenishment approximately every three days. Refueling of these tanks is usually accomplished by tanker delivery via the camp's perimeter roadway. When filling a collapsible fuel tank, use a pressure regulator to prevent overfill. Petroleum distribution personnel are also responsible for the setup, operation, preventive maintenance, and dismantlement of these fuel drums. Section personnel will perform routine inspections of these drums to ensure proper operation and environmental protection.

2-30. Potable water distribution and storage for Force Provider is performed using current water doctrine publications. The water source for Force Provider can be from a QM Water Purification and Distribution Company, an approved host-nation commercial water system, by contractor delivery from an approved water source, or from on-site wells constructed by an engineering detachment. All potable water to be used as a source for the Force Provider water distribution and storage system must be tested and certified by preventive medicine personnel.

2-31. Two water distribution section personnel will be available for duty at all times while the potable water storage and distribution operations are being conducted. The primary responsibilities of these personnel are to: maintain proper chlorination levels within each water storage and distribution system; monitor water usage; receive water deliveries; conduct water quality analysis testing; perform preventive maintenance on the equipment; and complete applicable reports, logs and forms. Section personnel will also operate water supply points to dispense water into water tank trailers or other approved containers.

2-32. Security of the water storage and distribution sites will be maintained to prevent water source tampering or sabotage. These sites will be routinely checked by security patrol personnel.

LAUNDRY AND SHOWER SECTION

2-33. The laundry and shower section plans and coordinates internal logistics requirements to include the ability to provide shower support on the basis of one shower per Soldier per day. The laundry system has the capability to provide for each Soldier to wash up to 17 pounds of laundry every three days. The Force Provider modules also include Shower Water Reuse Systems, which gives unit the capability to recycle 75% of grey water from the showers for reuse.

2-34. One expeditionary batch laundry subsystem is used in each Force Provider module. Routine preventive maintenance and services are critical and their thorough performance will prevent complex maintenance problems in the future. In order to enable the smooth operation of the containerized batch laundry, a schedule for turn in, processing, and return of laundry is developed, briefed during in-processing, and posted inside each billeting tent

2-35. Each Soldier is authorized one shower per day. Designated laundry and shower section personnel will attend to each shower system to ensure that the facilities are safe, sanitary, and in good working order. Section personnel will clean and sanitize each shower facility daily and as required otherwise, preferably without interfering with scheduled operations. The Force Provider expeditionary shower system is designed with private environments with separate sections for males and females which enables both genders to use the shower simultaneously.

2-36. The shower subsystem produces grey water which is considered hazardous waste. Personnel must wear appropriate personal protective equipment when working with items contaminated with grey water. The Force Provider module is equipped with a Shower Water Reuse System which process 12,000 gallons of grey water from showers and recycles 75% of it for reuse in the showers. Spills or leaks will be contained and cleaned up, and grey water awaiting proper disposal will be stored in approved containers and labeled as hazardous waste.

2-37. Laundry and shower section personnel will ensure that the latrines are in good sanitary conditions, safe, and free of insects. The level of waste in the black water holding tank is routinely monitored. The laundry and shower section leader is notified to evacuate the tank once the tank is no more than $\frac{3}{4}$ full. The Force Provider module uses 3,000 gallon tanks to store black water from the Containerized latrine system.

2-38. The Force provider Expeditionary latrines system has private environments with separate sections for males and females, which enables both genders to utilize the latrine simultaneously. Gender designation of latrines will be included in the in-processing brief and signs showing gender designation will be clearly posted on the outside of each latrine. If host-nation personnel will be using the latrines, signs should be posted in the host-nation language.

2-39. Feminine hygiene products may not be disposed of in latrines toilets. Signs prohibiting this practice will be posted in latrines designated for female use. Appropriate waste receptacles will be provided for disposal of these items. The final disposal of these items must be made as appropriate for the area of operation(s) (AO).

2-40. The Force Provider Expeditionary latrine system produces black water which is considered hazardous waste. Personnel must wear appropriate personal protective equipment when working with items contaminated with black water. Spills or leaks will be contained and cleaned up, and black water awaiting proper disposal will be stored in approved containers and labeled as hazardous waste.

FORCE PROVIDER PLATOON (LIGHT)

2-41. The Force Provider light platoon provides the capability to operate Force Provider modules in four independent 150 person locations or one consolidated 600 person site when augmented by personnel from the occupying unit to support base camp operations. The Force Provider (Light) platoon is capable of functioning independently for long term support of customers in remote locations with augmentation from customer units. It is employed to support a task force during theater reception, rest and refit, redeployment and at base camps for life support. It may also be used in support of major combat or stability operations such as humanitarian assistance, noncombatant evacuation, disaster relief, peace keeping, or peace enforcement operations.

2-42. The Force provider light platoon provides food service, laundry and shower, and water distribution with augmentation from customer unit. The Force Provider modules also provide shelters for billeting and MWR. The platoon does not perform field level maintenance on organic equipment, except for communications equipment.

PLATOON HEADQUARTERS

2-43. The Force Provider's light platoon headquarters section has the same responsibilities as the heavy platoon headquarters section. The maintenance personnel will also be consolidated when the platoon is co-located with the Force Provider Company headquarters. The platoon headquarters provides basic mission control, training, administration, and logistical support for the operations of one Force Provider module in the same manner as the heavy platoon headquarters.

FUEL AND WATER SECTION

2-44. The Fuel and Water section of the Force Provider light platoon will be able to provide the same capabilities, duties and responsibilities as the heavy platoon with augmentation from customer units. See paragraphs 2-24 thru 2-32 for detailed description of responsibilities for the fuel and water section.

FORCE PROVIDER SQUAD

2-45. Each Force Provider (Light) Platoon consists of four Force Provider squads. Each squad operates one 150 person Force Provider module. Squads may work independently or combined to support larger populations in increments of 150 personnel. The Force Provider squads provide personnel to train and assist customer unit personnel in the operation of the Force Provider modules, to include field feeding, laundry and showers and facilities and equipment maintenance. The Force Provider modules also include shower reuse systems, providing the unit with the capability to recycle 75% of grey water from the showers for reuse.

ADMINISTRATIVE, CHAPLAIN, MEDICAL, AND MWR

2-46. Administrative, chaplain, medical, and MWR services will be provided by supporting units in the AO using the Force Provider systems. Specific administrative and MWR equipment is provided with four or more 150-person modules co-located and must be requested as it is an add-on capability. In order to provide effective overall service to tenant units, the following should be considered when setting up these facilities:

- Make every effort to provide private spaces within the administrative tents for the discussion of personnel/legal/finance matters, religious counseling and medical treatment.
- Consider the mission, local weather trends, and the needs of tenant units when planning the setup of MWR fields and the types and quantities of MWR equipment to make available.
- Set up a secure area for the storage of AAFES items. If AAFES provides telephone and/or automated teller machine equipment, they should be located in a visible and well-lighted area to increase personnel privacy, safety and security.

2-47. Availability of these services will be included in the in-processing brief provided to each tenant unit. Signs will be posted inside each billeting tent providing schedules for all available services.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR OPERATIONS

2-48. The enemy may possess chemical, biological, radiological, and nuclear (CBRN) threats and hazards, and may decide to employ them on the battlefield. The company must be prepared to protect itself during an attack and be able to decontaminate equipment and personnel and continue its mission. The commander should make sure all Soldiers within his company are trained on CBRN defensive tasks. These tasks include detection, identification, and monitoring of CBRN hazards and decontamination of personnel and equipment. The Force Provider modules cannot be decontaminated unless it is in a closed transportation configuration.

ATTACHED UNITS

2-49. Dependent upon the mission and configuration, detachments from other units may be required to support Force Provider operations. The QM Force Provider Company is dependent upon supporting units in the AO for MWR, medical, engineering, preventive medicine, and religious support. If organic tactical generators are not used to provide primary power, a prime power team will also be attached to support operations. Attached support unit personnel will normally be afforded access to all Force Provider life support functions with the exception of billeting. Living quarters and/or shelter will be the responsibility of the organization detailing the attached unit. However, if excess billeting space is available, the Force Provider Company may accommodate attached unit billeting requirements. Force Provider personnel will

then maintain those billeting facilities as well; however, attached unit personnel will maintain the cleanliness and appearance of all assigned areas.

PRIME POWER TEAM

2-50. When the Force Provider is operated using commercial or prime power, a utilities team or an engineer prime power battalion unit will be attached to the Force Provider Company. The construction section personnel will work closely with the attached element. They will coordinate to maintain uninterrupted electrical service to each module.

SUMMARY

2-51. This chapter's focus was on the organization and composition of the Force Provider Company and its operations. It has identified the uniqueness of the company's composition and the critical elements required to provide the customer unit with exceptional logistical support.

Chapter 3

Force Provider Module

FORCE PROVIDER EQUIPMENT

3-1. The Force Provider system is the Army's premier base camp life support capability. The Force Provider 150-person module is the basic building block for larger Force Provider system operations. The 150 person module can be dispersed to individual sites or configured to support larger sites in 150 person increments. When four each 150 person modules are collocated additional add-on capabilities are available. Currently these are limited to the All Electric Kitchen, and the MWR and Administrative shelters. A site using Force Provider modules can continue to expand beyond 600 personnel in 150 person increments. Force Provider also has a limited number of 50/75 person modules which are based on the 150 person module. The 50/75 person module does not include the Shower Water Reuse System; the site will not produce enough grey water to make it efficient to operate. The current major subsystems are arranged to adapt to terrain, mission, local utility support, and area constraints. Environmentally controlled billeting, feeding, and hygiene systems are central to the operation of the Force Provider Expeditionary capability.

3-2. Aside from efficiency, a major factor in the design of the module was storage and ease of transportation. The system is packaged in TRICONS. Each TRICON's outside dimensions are 8 by 8 by 6½ feet (ft), and weigh less than 10,000 pounds fully loaded. Modules are classified as Army pre-positioned stock, available for deployment/placement by air, land or sea, from either depots or pre-positioned ships.

3-3. The Force Provider module supports major functional areas which coincide with the module subsystems. In some cases, a subsystem may be located at more than one site, such as the latrine and shower systems. Organic power generation consists of six generators, distribution panels and cables (See Appendix A, Table A-1 for a listing of the Force Provider module major components). Each subsystem is equipped with approximately thirty days of repair parts for initial operation. Once operations have begun, it will be necessary to make arrangements within the theater for maintenance of equipment and for subsequent resupply of operator and unit level repair parts and material. The major subsystems of the Force Provider module are:

- Climate-controlled tent billeting with ECUs for heating and cooling
- Administrative shelter systems
- MWR subsystem (optional add-on when four or more 150 person modules are co-located)
- Expeditionary Shower System
- Expeditionary Batch Laundry System
- Expeditionary Latrine System
- Food Service Subsystems (Expeditionary TRICON kitchen (one per 150 person module)
- SWRS
- Optional cold weather kit
- Optional Prime Power connection kit
- Optional All-Electric Kitchen (one per four or more 150 person module)
- Optional Containerized Chapel

TENT, EXTENDABLE, MODULAR, AND PERSONNEL (TEMPER) (AIR STRUCTURE)

3-4. The TEMPER (Air Structure) is a 32 ft X 20 ft coated fabric tent with integrated floor, standard ECU ducts and a vestibule. The climate controlled TEMPER can adapt to support various missions such as base camp operations, billeting, field feeding, MWR and medical facilities. Set-up requires less than 20 minutes

using a compressor to inflate the air support structure. Each billet TEMPER is equipped with lighting, bunk beds, footlockers, and 52 convenience outlets.

MWR AND ADMINISTRATIVE SYSTEM

3-5. The MWR subsystem is an optional add-on kit that can be called forward in support of Force Provider operations when four or more modules are co-located. The MWR kit is designed to support personnel with MWR activities in a deployed environment with fitness, sports, television, video and board game equipment. The Administrative subsystem is provided with each 150 person module and provides areas for administrative, finance and retail merchandising facilities.

EXPEDITIONARY SHOWER SYSTEM

3-6. The expeditionary shower system provides four shower stalls and two sinks per system/TRICON container. Two systems and clothing changing tents are provided with each 150-person module for climate-controlled showering and shaving purposes. Up to 24 Soldiers per hour can be accommodated with 10-minute showers. Set-up time is 30 minutes with two personnel. Available publications on the expeditionary shower system are listed in the reference section located near the rear of this field manual.

EXPEDITIONARY BATCH LAUNDRY SYSTEM

3-7. The expeditionary batch laundry system is a TRICON-based self-contained batch laundry system capable of washing and drying 100 pounds of laundry per hour. It consists of one 50-pound capacity washer and one 75 pound capacity dryer which are both rated at industrial commercial grade. Set-up time is 15 minutes with two personnel. Available publications on the expeditionary laundry system are listed in the reference section located near the rear of this field manual.

EXPEDITIONARY LATRINE SYSTEM

3-8. The expeditionary latrine system is a TRICON-based self-contained system which provides latrine and hand washing services. It consists of four low water use toilets with privacy stalls. Set-up time is 30 minutes with two personnel. Available publications on this system are listed in the reference section located near the rear of this field manual.

FOOD SERVICE SYSTEMS

3-9. The expeditionary TRICON kitchen subsystem comes with each 150 person module and is a TRICON-based, environmentally controlled, all-electric kitchen which can support the feeding of up to three cook prepared meals per day for 150 personnel. It can provide unitized group ration or limited "A" ration meals. It has an on-board sanitation capability and can be set up in 30 minutes by two personnel. This subsystem includes a TRICON Refrigerated Container System and dining tent with a small ice maker.

3-10. The all-electric kitchen is an add-on capability which can be employed forward when four or more 150 person modules are co-located. The all-electric kitchen has the capability to support 600 personnel with three hot meals per day. It is housed in two expandable international organization for standardization containers and requires four personnel for assembly.

SHOWER WATER REUSE SYSTEM

3-11. The SWRS is TRICON-based and uses the same micro-filtration, reverse osmosis and chlorine injection components as the Army standard tactical water purification system. This reverse osmosis water purification technology enables processing of grey water from showers and the recycling of 75% of the water for reuse.

LOAD DEMAND START STOP MICROGRID

3-12. The Load Demand Start Stop microgrid saves fuel and maintenance on the Force Provider power generation assets by connecting all six Tactical Quiet Generators from a 150 person module together on a common power distribution ring buss. Controllers mounted on each Tactical Quiet Generator then turn generators on and off automatically in response to power demand in the camp. Underutilized generators are thus turned off saving approximately 30% on fuel compared to stand alone operations. The microgrid system also provides a limited, prioritized, load shedding capability to protect the grid from crashing and to assure power to critical camp loads.

OPTIONAL COLD WEATHER KIT

3-13. The cold weather kit is an add-on capability that allows the system to operate at temperatures down to -15 degrees Fahrenheit. It consists of a Military Tactical Heater rated at 150,000 British thermal units and tools and equipment to assist in cold weather deployment. It provides for storage of water, waste water bladders and heat-traced hoses. See Appendix B, Table B-1 for contents of cold weather kit.

OPTIONAL PRIME POWER CONNECTION KIT

3-14. The Prime Power connection kit is an add-on capability which is designed to provide the link between the Force Provider expeditionary system secondary power distribution system and Prime Power generator sets or commercial 4160V Delta power. Other commercial power requires additional transformers. The components are all commercial off the shelf. See Appendix C; Table C-1 for contents of the prime power kit.

CONDITIONS AFFECTING SYSTEM PERFORMANCE

3-15. Force Provider planners and operators must consider conditions that may affect the operation of the Force Provider system. Extreme temperatures, rain, snow, wind or high elevation can affect the construction efforts and the efficiency and effectiveness of the equipment and operation of the equipment and overall mission of the Force Provider.

WET WEATHER CONDITIONS

3-16. Extended periods of wet weather or torrential rains may create conditions that negatively affect Force Provider operations. Extended periods of rain may cause the earth to become muddy and make moving in and around the camp difficult for equipment and personnel. In these conditions, walkways need to be constructed in areas that receive significant personnel traffic. Tracking of mud into facilities may also cause sanitary issues which will require additional attention.

3-17. Wet conditions may cause tents to sag and guy ropes and stakes to become loosened. Routine inspections of structural integrity for tents must therefore be increased to ensure facilities remain structurally sound and undamaged. Wet conditions can also cause grounding rods for electrical systems to become loosened and grounding to become less effective. Routine inspection of grounding rods must therefore be increased to ensure proper grounding and prevent electrical shock.

COLD WEATHER CONDITIONS

3-18. The Force Provider module is not intended for extended use in freezing conditions unless the optional Cold Weather Kit is used. Brief drops into temperatures below freezing can be tolerated, but sustained operations in these conditions require the addition of the add-on Cold Weather Kit. The cold weather kit is issued with its TM, which contains all of the instructions necessary for its setup, operation, maintenance and dismantlement.

3-19. Snow must be removed from tent flies promptly to prevent damage or catastrophic failure of the tent. A long-handled snow rake is provided for this task. Snowdrifts against tents should be removed. When planning setup and cold weather is anticipated, the tents should be rearranged to reduce inaccessible dead

space between them and/or their vestibules. Snow may need to be removed from walkways and roadways. To prevent damage to positioned equipment, locations must be marked with tall stakes or flags. All electrical cables, grey water hoses, and black water hoses must be buried or otherwise protected from damage by snow removal equipment. The Skid Steer Loader, which is provided with the 150 person module, makes this task significantly easier during site set-up.

EXTREME HEAT OR DESERT CONDITIONS

3-20. Every effort must be made to reduce the effects of the heat and sand on equipment, especially the ECUs, power distribution, illumination system-electrical, and fuel and water supplies. When feasible, empty TRICONS should be used to keep equipment out of the sun and sand. Camouflage or solar shades are used wherever possible to reduce the solar heating of water and fuel tanks. Fuel tanks must not be filled to 100 percent capacity to allow for expansion and to reduce the possibility of heat deterioration, infrared deterioration, and rupture. Electric pumps and equipment powered by small air-cooled internal combustion engines should be shaded to prevent overheating. Preventive maintenance on these modules will be performed more frequently.

3-21. Extreme heat also affects the physiology of personnel and increases the likelihood of heat stroke, exhaustion, and dehydration. Tasks and workloads will be scheduled to take these conditions into account. In extreme conditions, Soldiers must take frequent breaks, use sunscreen, and drink plenty of water to prevent dehydration.

HIGH ELEVATION

3-22. Fuel burning equipment, including internal combustion engines, is limited to the altitude at which it may be effectively and efficiently operated. The equipment TM should be checked to determine the procedure for making necessary adjustments for high altitude operations.

3-23. At high elevations, personnel may experience difficulty at increased levels of exertion. Consider the effects of elevation on physiology when scheduling personnel tasks and workloads.

SUMMARY

3-24. This chapter focused on the Army's Force Provider modules and its capabilities. The Force Provider 150-person module is the basic building block for larger system operations. The employment of all 24 modules (150-person module) provides support capability to 3,600 personnel or a brigade size element. Based on emerging requirements, the Force Provider modules have evolved over time, via engineering change proposals, into an expeditionary and rapidly deployable capability that has a smaller deployment footprint. See Appendix D for Force Provider emerging capabilities.

Chapter 4

Deploying Force Provider

A theater or task force requesting Force Provider support must first know exactly what its requirements will be. It must also know how the system will be used; for example, base camp operations, forward operating base, intermediate staging base, evacuation, humanitarian assistance, or rest and refit. This chapter will discuss Force Provider support requests, Force Provider preparations, employment, and redeployment.

REQUESTING FORCE PROVIDER MODULE SUPPORT

4-1. The Force Provider’s modular design allows the system and company to be employed based on the mission assigned. Units desiring Force Provider support must forward requests through command channels to the TSC which will be responsible for tasking the Force Provider Company. Additionally, units must submit requests for the Force Provider modules, via memorandum, through command channels to HQDA. HQDA will determine the appropriateness of the request. If approved, HQDA makes the necessary arrangements to release Force Provider module(s) from Army Pre-positioned Stocks. USAMC will arrange transport of the modules to the theater sea port of debarkation. At the same time, the requesting organization must perform an analysis to determine the appropriate mode of operation. If full or partial operation by military personnel is deemed the best method, the requesting organization must submit a request for forces, via memorandum, to deploy the QM Force Provider Company personnel through the appropriate channels.

4-2. Most of the procedures outlined in this chapter also apply to in-theater or within area of operation, relatively short-distance relocations (for example, the system relocates to better support customer operations, or redeploys to an in-theater re-fit/repair facility).

DEPLOYMENT OF FORCE PROVIDER MODULE

4-3. A Force Provider module consists of containerized material which will require movement from a seaport and/or airport of debarkation to the AO. Transportation of the module(s) to the operating site will be arranged by USAMC and is not a responsibility of the QM Force Provider Company. USAMC will maintain ownership of the module(s) until the commander of the Quartermaster Force Provider Company, unit commander on ground, or supervisory contractor takes hand receipt responsibility at the operating site. It is also recommended that a minimum of one 10,000 pound forklift capability is coordinated for in support of site preparation. The module(s) may be transported from the port(s) of debarkation to the AO by means of air, rail, or line-haul. Table 4-1 outlines the general shipping requirements for a standard 150-person Force Provider module, four 150 person modules that will be co-located, and the 50/75 person module. Additional transportation requirements are needed for add-on kits.

Table 4-1. Shipping estimates for air, rail, and linehaul modes

<i>Mode</i>	<i>Equipment</i>	<i>Quantity</i>		
		<i>50/75 person module</i>	<i>150 person Module</i>	<i>Four 150 person Module co-located</i>
Air	C-5A	1	1	3
	C-130	2	5	17
	C-17	1	3	6

Table 4-1. Shipping estimates for air, rail, and linehaul modes (continued)

<i>Mode</i>	<i>Equipment</i>	<i>Quantity</i>	<i>Mode</i>	<i>Equipment</i>
		<i>50/75 person module</i>	<i>150 person Module</i>	<i>Four 150 person Module co-located</i>
Rail	Gondola Cars (68 ft) Flat Cars (89 ft)	2 2	3 2	9 7
Linehaul	M-872/ M-915 (40 ft) Commercial (48/53 ft)	3 2	5 4	15 15

4-4. Cold weather kits and camouflage materials are not part of the standard supplies included with a module and must be requested separately. Every effort should be made to identify the required configuration of each module to reduce delays, transportation burdens and costs.

SITE PLANNING AND SITE SELECTION CONSIDERATIONS

4-5. During the site selection process the security, mission, political considerations, and availability of appropriate resources must always be considered. Host-nation representation should be included in the process. Force Provider deployment requires many tons of equipment to be transported in and thousands of hours of setup labor, making it crucial that the operating site be secure, safe, accessible, environmentally viable, and suitable for providing effective support. The site selection process is a joint effort typically consisting of the following team members:

- The task force or ASCC of the receiving theater, represented by the plans officer of the rear command post element.
- USACE contingency real estate Acquisition team, or equivalent assurance of site acquisition either through host-nation support (HNS) or leasing.
- The geospatial engineer team of a BCT, engineer brigade, or other supporting headquarters for terrain analysis.
- USACE force protection specialist or equivalent.
- A representative of the general engineering unit (military or civilian) selected to perform site analysis and preparation.
- Force Provider Company, represented by the operations officer, the operations noncommissioned officer, and the horizontal construction supervisor.

MISSION

4-6. Consider the mission and types of units or groups that Force Provider will be supporting and consider the total operational area that will be required. It is imperative for the Force Provider Company to understand and know the supported unit's mission to organize the Force Provider module in order to provide effective and efficient logistical support.

SECURITY

4-7. The QM Force Provider Company defends against a Level I threat and requires assistance from tenant and/or theater assets for Level II/III threats. In determining the security level of the Force Provider module(s), mission, enemy, terrain and weather, troops and support available, time available, civil considerations and the units and organizations to be supported, must be considered. Commanders and supervisors must be cognizant of security concerns associated with using host-nation workers. Third country nationals and host-nation employees contracted to work on United States installations must be vetted by using biometrics or other approved methods. After the vetting process has been accomplished and they are allowed access, close supervision is required to prevent pilferage and theft, and to maintain overall security. The security of supply routes and heavily traveled roadways in the AO must also be considered in the security assessment.

SAFETY

4-8. Safety hazards such as flooding, landslides, or avalanches may exist. Consider previous land uses and slope, such as landfills or other contaminated sites. Since Force Provider consists mainly of tent structures, high wind areas should be avoided. Consideration is given to whether current or previous occupants may have mined the area. Satellite imagery should be (when available) used, along with ground inspection, and local area knowledge to ensure the operational area is free of mines and unexploded ordnance.

GEOGRAPHICAL TERRAIN AND GEOLOGICAL CONSIDERATIONS

4-9. Careful selection reduces overall site work, climate control efforts, and drainage requirements. In most cases, flat, gently sloping (7 percent maximum grade), featureless terrain is preferred. However, security or prevailing climate may favor a wooded area. Selecting a site with some vegetation will lessen erosion in a rainy or windy environment and reduce dust in a dry climate. Low elevation points of valleys or other depressed areas where water may collect should be avoided. The total hydrology of the area including the water table throughout the time of the mission should be considered. Soil stabilization requirements should also be kept to a minimum to reduce the overall earthwork required.

- Terrain and soil analysis should be performed in two distinct phases. First - maps, aerial photos, climate records, and other available data should be used to extract and analyze basic terrain, weather, and climate factors. Secondly - these factors should be synthesized to predict their influence on site layout, installation of facilities, utilities, camouflage, and the operation and maintenance of the module(s).
- A thorough ground reconnaissance should be accomplished to verify all information collected. It is also required to obtain data which would not otherwise be available. A site that appears suitable based on aerial mapping may be not suitable for use due to ground or water table conditions.

POLITICAL CONSIDERATIONS

4-10. Political factors, including national sentiment and visibility may also influence which sites are available. In some cases, use of an ideal site may be denied. Consider the impact that the system and the presence of U.S. Soldiers will have on the community. When engaged in low intensity operations, consider whether the site selected appears to benefit a particular group or faction more than another.

LOGISTICAL SUPPORTABILITY

4-11. Sustained Force Provider operations require large amounts of consumable resources such as electrical power, fuel, and potable water. These may be made available through theater resources or through HNS.

- Electrical Power. The preferred source of electrical support is existing commercial power. To determine the compatibility of existing commercial power with the demands of the operation, the following information must be researched:
 - Voltage, phase, and frequency of existing commercial power
 - Ability of the existing electrical utility to consistently meet the electrical power demands of operations over the projected timeframe
 - Predicted reliability and stability of the power source (potential outages and voltage fluctuations)
 - Cost of power lines and step-down transformers. The Force Provider system requires direct high voltage lines from substations with step-down transformers. Simply tapping into low voltage service lines will not provide adequate power. If commercial power is appropriate to support Force Provider operations, plan for tactical-powered generators to serve as emergency backup power for critical subsystems.
- Fuel Resources. Consider supplies of fuel which may be obtained, and the convenience and appropriateness of receiving them from available alternatives. Supplies of jet propulsion fuel, type 8 (also known as JP8) and motor gas will be required to meet Army fuel standards. Consider

also that fuel consumption will be considerably higher if diesel-powered generators are to be used as the main source of electrical power generation.

- Potable Water. The average consumption of potable water per person can range from 20 to 35 gallons per day dependent on conditions. The preferred source of potable water to support operations is existing commercial water. If an appropriate source of commercial water is not conveniently available, general military water support may be utilized or engineering assets may be requested to evaluate the feasibility of drilling wells to extract ground water.

ACCESSIBILITY

4-12. Effective lines of communications will be required. Existing lines of communications may be used, if available and adequate, to provide uninterrupted communications services to and from key elements. In the case of loss of space-based communications due to enemy activity there remains concern for Force Provider units supporting deployed forces. Whether the interruption of the communications is caused by enemy action against satellites or through the use of intermittent jamming/spoofing, the resulting “black-out” will require the Force Provider Company to adapt and adjust until the capability is restored.

4-13. Adequate roads to and from the Force Provider AO will be required to deliver materials and allow access to the site by tenant units. These roads should be adequate for travel by a variety of military and civilian vehicles. Consider the types of vehicles which will use the roads in and around the AO. The weights, heights, and turning radii of: the wastewater evacuation trailer; the water delivery trucks; the fuel delivery trucks, the tank and pump units; the 10,000 pound forklifts; customer unit (tactical) vehicles; and fire-fighting and emergency vehicles must be considered.

ENVIRONMENTAL IMPACT

4-14. Environmental impact, short term and long term, must be considered before erecting a Force Provider site. Therefore, an environmental baseline survey must be completed before site construction begins. Leaders must also ensure that the site meets all applicable local environmental laws and regulations, even if the local population routinely does not. Environmental compliance program guidance will be sought through the chain of command to ensure that local environmental concerns are properly satisfied.

4-15. Approximately 70 percent of the potable water consumed will be returned as grey water or black water when using the SWRS. Grey water and black water are hazardous wastes and potential effects to personnel and the environment must be considered. Grey water will be stored using the grey water collection subsystem supplied as part of the system. Black water from the latrines will be stored in the holding tanks of the containerized latrines. It will be collected for disposal using the waste water evacuation tank/trailer. Disposal of grey water and black water will be considered in the Civil Engineering Support Plan for the theater in which the system is operating. Disposal options include the use of a host-nation sewer system (first choice), local contractor haul to a commercial facility, government haul to a commercial facility, or lagoon/field-expedient methods.

4-16. If the host-nation sewer system or a local contractor is selected, the persons responsible for the source of the waste water must ensure it is safely and properly disposed of. Force Provider personnel must verify the integrity of the sewer system before allowing a contractor to dispose of wastewater. Periodic inspections will be done to ensure that wastewater disposal is IAW the environmental provisions of the disposal contract and other provisions. If a host-nation sewer system is not available, other options must be found. Hauling wastewater to existing facilities is one option, although its potential logistical impact is normally high. On-site collection, treatment, and release of wastewater are engineering issues which will be accomplished IAW local directives, and host-nation laws and regulations on waste disposal.

4-17. Engineers will advise where and how to dispose of solid refuse waste prior to base camp establishment. The chain of command must be consulted to determine specific requirements, and ensure that they are incorporated into the unit environmental program.

RECONNAISSANCE AND INFORMATION COLLECTION

4-18. In order to gather information about potential sites, many sources should be consulted. No one source of information should be relied upon exclusively, especially in parts of the world where topographic and climate data are not extensive. The main source of site selection information should be collected reconnaissance.

RECONNAISSANCE SURVEY

4-19. The main purpose of a reconnaissance survey is to locate a site best suited to meet requirements of the general company layout and work required. Reconnaissance operations vary with the operational environment, assigned mission, and the size, type, and composition of the reconnaissance element. An aerial, map, or ground reconnaissance is required to determine potential Force Provider sites.

ROUTE RECONNAISSANCE

4-20. Route reconnaissance should be performed to determine the suitability of specific routes, limited to critical terrain data. It should be adequately recorded on a map overlay or sketch and be supplemented by reports about various aspects of the terrain.

ROAD RECONNAISSANCE

4-21. Road reconnaissance is performed to determine the traffic capabilities of existing roads. It is also used to provide more detailed information than is given by the route reconnaissance. It may include enough information to develop work estimates for improving the road. DA Form 1248 (Road Reconnaissance Report) should be used to record this information. Maps and sketches should be used as necessary.

SITE PREPARATION

4-22. Site preparation is the process of changing a prospective site into a workable layout for a Force Provider module. Preparing a site will likely involve many personnel from several military and/or contract agencies. In order to avoid confusion and expedite the collective effort, tasks assigned to each organization must be well defined in terms of scope, standards of work, timelines and duration. Task completion progress must be monitored. Corrective actions must be completed in a timely fashion. See ATTP 3.34.23, *Engineer Operations: Echelons Above Brigade Combat Team*, for more information.

ENVIRONMENTAL BASELINE SURVEY

4-23. The first step in the preparation process should be an environmental baseline survey. This survey will determine and document the existing conditions of the site. The purpose of the survey is two-fold. First, it assesses the site's environmental state before Force Provider use. This may then be used as evidence of the Army's compliance with environmental protection program. Secondly, it may be used to restore the site after it is no longer required for Force Provider operations. FM 3-34.5, *Environmental Considerations*, provides guidance, information, and procedures on conducting a proper environmental baseline survey (EBS).

SITE SURVEY AND STAKING

4-24. The site must be surveyed and staked out prior to the set up of any module subsystems. Once surveyed, the control points for each subsystem will be marked with a stake and flag (or spray paint on hardstand) IAW the site layout. Within each subsystem, the operators will stake the location of tents and equipment IAW the Force Provider technical manual using the control points as reference. Setup of each subsystem should adhere strictly to the marked staking plan.

EARTHWORK

4-25. The supporting engineer battalion, U.S. Air Force Red Horse Squadron, navy mobile construction battalions (Sea Bees), contractor, or the theater of operations contract construction agent, are capable of preparing the site. During site preparation, potential environmental impacts and site restoration requirements must be considered. Every effort will be made to not disturb the site any more than is absolutely necessary. In order to gauge whether a site is “good,” “fair,” or “poor,” use Table 4-2 to determine a baseline assessment. If the site does not fall entirely into one category, best judgment and experience are required to estimate site preparation time. If possible, cut and fill materials should be available on site to facilitate site restoration. Depending on local conditions, dust abatement may be required during setup. Engineers have this capability and should be consulted as required. Attempts should be made to minimize removal of existing grass and vegetation to reduce dust and erosion. This information should be used only as estimates for a standard Force Provider module. If the current mission involves additional equipment, space, or services, site preparation times will increase or decrease accordingly.

Table 4-2. Existing conditions

Site Condition	Definition		
	Good	Fair	Poor
Terrain	Relatively Flat	Uneven	Rough, hilly
Brush/trees	Few	Many	Dense
Soil	Stable	Loose, partially stable	Massive stabilization required
Roads	Existing throughout	Some	None
Drainage	Sufficient as is	Some work required	Massive work required

ROAD CONSTRUCTION

4-26. Roads in the Force Provider compound must be able to support heavy vehicles such as rough-terrain forklifts, heavy equipment transporters, and the tracked vehicles of tenant units. If not constructed correctly, roads will require additional maintenance to keep them serviceable under heavy traffic conditions. General road maintenance will always be required.

DRAINAGE

4-27. Since the majority of Force Provider subsystems are tent-based, drainage is a top concern. Subsystems should be positioned to allow proper drainage of the site itself and to avoid drainage of nearby land into the area. Runoff due to heavy rain must be channeled away from key subsystems. The latrines must always be positioned downhill from the kitchen to prevent runoff from reaching the cooking area. Local regulations and climate will affect the actions which must be taken for positive drainage control. When laying out the site, the desired ground elevation relationships of the subsystems must be kept in mind. Note that in order to prevent contamination from spills that could be caused by natural drainage flow, the bulk fuel storage area must be positioned lower in elevation than all of the other Force Provider functional areas except the grey water storage and hazardous waste (HW) sites. Use figure 4-1 as a guideline for determining ground elevation relationships of subsystems.

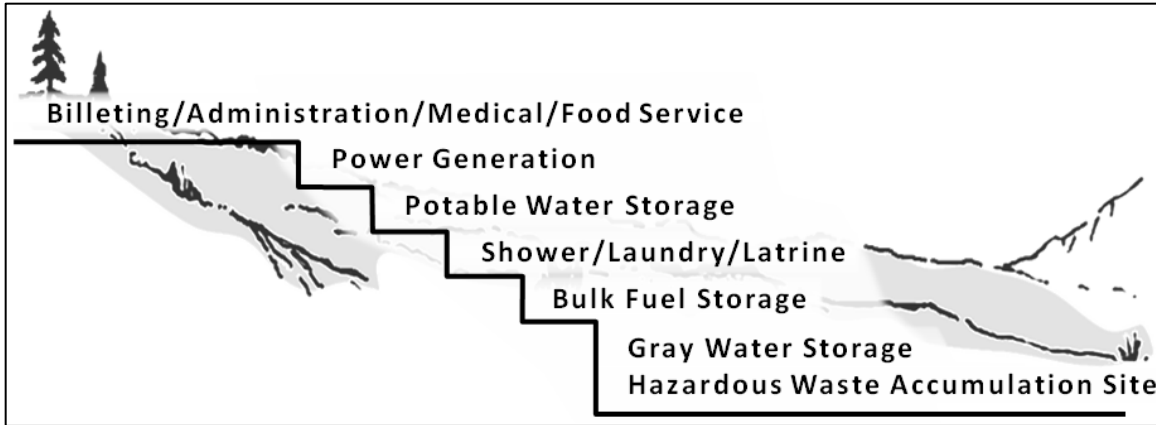


Figure 4-1. Ground elevation relationships of subsystems

LAYOUT

4-28. Other resources, such as additional tents and other equipment that the site may need must be considered and adjustments to the layout plan are made where required. These may include issues involving billets and space for firefighters, utility teams, MWR personnel, and the hazardous waste accumulation areas. Layout deviations may be necessary to fit the system to a particular site or mission. Minimum spacing and elevation relationships between subsystems must be maintained within all layout variations. See table 4-4 on page 4-8 for minimum spacing requirements between subsystems. Engineer units have the necessary knowledge to develop alternate plans.

Table 4-4. Minimum distances between facilities

	Minimum Spacing (Feet)														
	Solid Waste	Ammunition	Helipad	Maintenance	Parking Lot	Roads	Billets	60kW TQG	Bulk Fuel	Potable Water	Wastewater	Shower	Laundry	Food Service	Latrine
Latrine	300	300	500	200	200	15	200	50	300	100	200	0	50	300	
Food Service	300	300	500	300	300	15	200	50	300	50	200	300	300		
Laundry	300	300	500	200	200	15	200	50	300	50	200	50			
Shower	300	300	500	200	200	15	200	50	300	50	300				
Waste water	300	200	300	200	200	15	200	50	200	300					
Potable Water	300	200	300	300	300	15	200	50	200						
Bulk Fuel	300	500	300	200	200	15	200	200							
60kW TQG	50	300	300	50	200	15	50								
Billets	300	200	500	200	200	15									
Roads	15	15	300	15	15										
Parking Lot	200	200	300	50											
Maintenance	300	300	300												
Helipad	300	300													
Ammunition	300														
Solid Waste															

Legend: 60kW TQG- 60kilowatt Tactical Generator

SUBSYSTEM SPECIAL PREPARATION

4-29. There are several subsystems that require special preparation considerations. These subsystems are listed below and must be considered during the planning process.

BERMS

4-30. All collapsible 1,000-gallon fabric fuel tanks will be emplaced in a berm with raised sides to contain possible fuel leaks or spills. Berms protect the tanks from enemy fire and retain the contents if the tanks rupture or catch on fire. Berms should be constructed so that they hold a minimum of 100 percent of the product with one foot of free board. Engineer support is required for construction of the berms. .

CULVERTS

4-31. Electrical cables, potable water hoses and grey water hoses should be buried under roads or pathways to prevent damage. Culvert sections should be used to protect cables and hoses from being crushed or separated. Where potable water hoses cross over or parallel grey water hoses, the potable water hoses must be given 24 inches of vertical and horizontal separation to prevent potential potable water contamination. The non-potable hose must either be buried or sandbagged to raise the potable line 24 inches. The couplings of potable and grey water hoses must be separated by at least 36 inches to ensure that grey water leaks do not contaminate potable water. When burying fuel lines, culverts must be accessible, for inspection, for signs of leakage and precautions must be taken to prevent spills from entering surrounding soil.

HARDSTANDS

4-32. Several surface areas must be hardened to provide stable footing for heavy equipment and high traffic facilities. The areas for the Expeditionary Latrine System, Expeditionary Batch Laundry, tactical power generators, TRICON refrigerator or Multi-Temperature Refrigerated Container System, and the food service subsystem dining facility all require hardstand 1403 emplacements. The Force Provider and subsystems TMs provide specific information concerning the weight and size of these facilities and equipment.

HELIPAD

4-33. It is likely there will be a helipad wherever there is an established Force Provider module. The primary use of the helipad will be for medical evacuations. The helipad must be located as close as possible to the medical treatment facility. Materials required for construction of the helipad, such as matting and lighting, are not provided with the module. The helipad should be located near the compound but far enough away so that rotor wash does not cause damage to tents or general hazards to personnel.

PARKING FACILITIES

4-34. A parking area for tenant unit vehicles and equipment must be provided. The area must be large enough to contain all of the unit's vehicles and provide sufficient space for the unit to conduct maintenance operations during their stay. Parking areas should be constructed using well-graded, compacted rock and soils with an engineered slope and drainage to minimize weather effects, and improve the safety and longevity of the parking area.

AMMUNITION HOLDING AREA

4-35. Tenant units may require the use of an ammunition holding area at a safe distance from the site. The type and size of the ammunition holding area will be determined by the overall needs of the tenant units.

WASTE ACCUMULATION SITES

4-36. Storage sites for solid and hazardous wastes must be constructed. These sites must be constructed IAW environmental protection program and the appropriate laws and regulations governing waste storage in the host-nation.

NONMILITARY RESOURCES AND SUPPORT

4-37. The Force Provider Company depends on many assets, especially during deployment. In-theater support assets must be determined as early as possible, with additional requirements coordinated well in advance of deployment. Communications channels with the logistics, transportation, and engineering elements must be set up early. This will greatly improve the chances of a successful deployment.

4-38. Force Provider personnel are not directly responsible for real estate acquisition. However, they eventually may have to deal with problems caused by poorly written contracts and support agreements. Force Provider personnel should ensure all agreements, leases, and contracts are fully reviewed by engineer and legal experts within the USACE district.

4-39. Purchase or lease agreements should be made final prior to the start of site preparation. The earlier a site is selected and prepared, the more efficiently the Force Provider camp will be constructed. Leases or purchases should be completed before the start of any site preparation activities. HNS agreements already exist in many nations throughout the world, if applicable; any such agreement should be available through the local Office to the Staff Judge Advocate. An accurate and thorough survey of capabilities in the receiving theater will aid a successful deployment. HNS requirements will be directed by the ASCC.

MODULE SETUP

4-40. Upon arrival of the company main body, the Force Provider module(s) may or may not have reached the AO. Preparations will immediately begin to occupy the operational area and plan a reinforced defense. After the QM Force Provider Company has occupied the area, they will set up the company command post and erect operator billeting. This will give the company a central area for mission command and a place to live and stow personal gear. Remaining module subsystems will be erected in a logical sequence based on use of manpower and equipment. Subsystems such as power distribution, water distribution and storage, and grey water collection are required for the proper operation of other subsystems. The importance of these subsystems will be considered when determining the use of available resources in the set-up process. TMs for the subsystems and components provide setup information and procedures.

4-41. To ensure appropriate accountability for module equipment, the Force Provider Company commander, unit commander on ground or supervisory contractor inventories and inspects the serviceability of all equipment during setup of the module. The Army's approved property accountability system is used to report and account for module equipment. Missing, damaged, or unserviceable equipment will be documented and kept on file awaiting Financial Liability Investigation of Property Loss and eventual redeployment of the module to USAMC for refurbishment. As equipment becomes damaged or unserviceable during operations, it will be reported and documented, and replacement equipment and or parts are ordered. An up-to-date status of all module equipment will be maintained. AR 735-5, *Property Accountability Policies*, and AR 710-2, *Supply Policy Below the National Level*, give guidance for maintaining property accountability. Missing items require a Report of Discrepancy. Equipment damaged in shipping requires a Supply Discrepancy Report. If received equipment is intact but is not functioning, a Quality Deficiency Report must be submitted.

4-42. Setup of a standard module requires approximately 72 to 96 man-hours. Setup time will vary based on site conditions, weather conditions, available resources and module configuration. If available, additional personnel may be used to expedite the set-up process. These personnel may be military or civilian and will not normally possess expertise in module setup. These individuals may be best utilized by conducting repetitive, labor intensive tasks such as erecting billeting TEMPERS. If host-nation civilians, or third country nationals, are used, they must first be vetted and close supervision will be necessary to prevent pilferage and theft and to maintain overall security.

4-43. Availability of critical resources such as 10,000 pound forklifts will affect set-up time. These resources must be used to set up priority subsystems first. The staking plan must be followed. This will also help to minimize setup time by preventing the need to later relocate subsystem components. During setup, the contents of all TRICONS and international organization for standardization containers will be inventoried using the packing list located inside each container. Items and equipment will also be checked

for serviceability. Unserviceable items will be tagged. Shortages or damage will be reported to company headquarters so replacements can be procured as quickly as possible. All packing material and dunnage will be saved and stored in unused TRICONS for redeployment.

4-44. The appropriate defensive posture will be maintained throughout the set-up process. During setup, the commander and other leaders will set up the previously planned unit defense, employ physical security and operations security measures, plan for and maintain preparations for operating in a CBRN contaminated environment, and plan damage control operations. These preparations and measures should take all available resources into consideration including those of tenant units. A notional layout of the 150 person module is shown in figure 4-2.

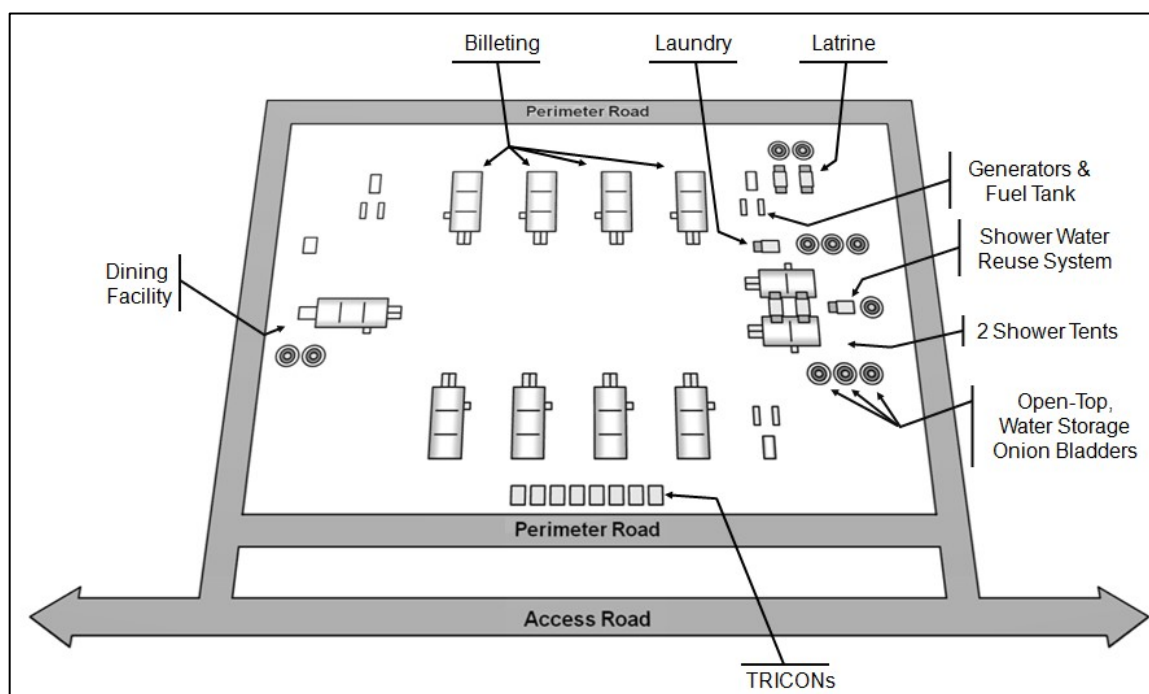


Figure 4-2. Force Provider module notional layout (150-person)

REDEPLOYMENT

4-45. Redeployment of the Force Provider Company and Force Provider module is conducted as separate entities. The Force Provider Company conducts redeployment activities based on guidelines set by the responsible command. The Force Provider will redeploy based on operational needs.

FORCE PROVIDER COMPANY

4-46. When the order is received to redeploy, the QM Force Provider Company commander will initiate redeployment activities. Redeployment personnel and administration activities will be performed and redeployment training activities undertaken. Company supply activities will turn in excess items and resupply the company for movement to the home station. Maintenance actions will start to prepare the company's organic vehicles and equipment for movement to home station. At the same time, the company begins preparing to dismantle and redeploy the Force Provider subsystems.

FORCE PROVIDER MODULE

4-47. A critical aspect of the redeployment process is that the hand receipt holder must clear the hand receipt of all module equipment being returned to USAMC. USAMC will arrange transportation for the module from the operating site to a continental United States depot or in-theater element for refurbishment.

To clear a hand receipt with property shortages, a Financial Liability Investigation of Property Loss will be completed. The commander will be held responsible for equipment which cannot be properly accounted for. To facilitate clearing of a hand receipt, the commander will ensure that all module equipment is inspected for serviceability and thoroughly cleaned before it is packed. Unserviceable items will be tagged with a description of the damage or malfunction before they are packed. All module equipment will be inventoried and returned to the original container using the packing list and instructions in the panel of each container's door. All missing, damaged, or unserviceable equipment will be reported and documented. This documentation will then be used to simplify the reconciliation of the property records and to facilitate the clearing of the hand receipt.

4-48. A Force Provider module may normally be relocated in theater or redeployed to its home storage station. However, when rebuild/reset procedures are required it will be returned to a continental United States depot or an in-theater facility for refurbishment. For reset procedures visit the Natick Integrated Logistics Support Center (ILSC) website. The company commander must clear the hand receipt of the module with USAMC, so it is important that care be taken to redeploy all module components in the best possible condition. Before each subsystem is dismantled, it must be free of excess dirt and debris to facilitate later packing. Subsystems with potable water, grey water, or black water systems must be flushed with highly chlorinated water and then flushed with potable water to sanitize the systems. Before disassembly, all components will be checked for serviceability. Unserviceable components will be tagged for easy identification during refurbishment. Tagged equipment will be documented and turned in to company headquarters to facilitate the clearing of the hand receipt. On occasion, administrative storage may be all that is required for the module.

4-49. During dismantling, components containing water will be drained and air-dried to prevent corrosion or possible freezing. Fuel will be drained from all components containing fuel and all components will be allowed to air-dry to prevent potential fire hazards. Once dismantled, the components of each subsystem will be thoroughly cleaned before packing. Each item will be returned to its original TRICON or international organization for standardization container IAW the packing list inside each container. Shortages or missing items will be documented and passed to company headquarters to facilitate clearing of the hand receipt. TMs for these subsystems and components also provide dismantling information.

4-50. Coordination will be made with USAMC as soon as possible to facilitate handover and the clearing of hand receipt for the module(s). Hand-off of the module(s) to USAMC will occur at the site and USAMC will arrange transportation to its ultimate destination. This relieves the unit of the responsibility of tracking the equipment back through the transportation system.

SITE RESTORATION

4-51. Restoration of the original site is critical, and every effort will be made to restore it to its original condition. Returning the site to its previous condition is the main goal of restoration. The environmental baseline survey will be used along with the conventional survey to determine the exact condition of the site and the landscape before its use. Locally constructed items such as floors and sidewalks will be dismantled and properly disposed of in theater. If required, some of these materials may be used as bracing or dunnage inside shipping containers. Damaged or removed vegetation cannot be restored to its original state; however some re-vegetation activities may be feasible. Hazardous waste such as fuel, lubricants, grey water, or black water will be removed IAW current directives, host-nation environmental requirements, and storage sites inspected for potential contamination.

SUMMARY

4-52. This chapter has discussed the importance of requesting Force Provider support and all that is required in determining the Force Provider configuration based on the unit's mission. The Force Provider relies heavily on external support due to its limited organic equipment and capabilities.

4-53. Proper planning and advance coordination is essential to the employment of the Force Provider. Political considerations, logistical supportability along with terrain and geological considerations play a major role in establishing the efficiency of a functional base camp.

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Chapter 5

Force Provider Environmental Guidance and Safety Techniques

The Army vision includes the goal to be a national leader in environmental and natural resource stewardship for present and future generations. This chapter discusses operational energy, environmental responsibilities, environmental protection stewardship goals and requirements, spill response, and safety awareness promotion. Force Provider modules undergo continuous improvement through reduction of fuel consumption, resupply, and reduction/back-haul of waste.

OPERATIONAL ENERGY

5-1. Force Provider companies are constantly improving their capabilities through the better use of energy. In order to reduce fuel consumption, the unit must implement an operational energy policy. Operational energy (OE) is the energy and associated systems, information and processes required to train, move and sustain forces and systems for military operations. Operational energy incorporates elements of Soldier, basing, and vehicle/platform power. It is a key enabler for operations essential for combined arms maneuver and required for Soldier sustainment. Providing energy alternative capabilities and interoperability builds flexibility and resilience through an increased ability to respond to changes in operational demands, and a greater ability to adapt to changes in the operational environment. Leaders will integrate operational energy considerations into planning, and operations, and reporting and management programs.

5-2. Leaders at all levels must emphasize behaviors and employ common sense solutions that decrease the amount of energy waste and make more effective use of energy consumed. Through energy conservation, leaders can reduce resupply operations, increase vehicle and equipment efficiency, and reduce environmental damage. A successful approach to implementing operational energy is through a unit designated operational energy manager. The energy manager plays a critical role in energy conservation, creating an energy-informed culture and providing critical information for energy informed operations.

5-3. The energy manager or camp mayor can reduce fuel, power, and water requirements by addressing methods and means to reduce energy consumption through a holistic approach. Though mission and camp duration-dependant, significant energy savings is readily achievable by employing two kinds of technologies:

- Technologies to reduce the energy demand (for example; insulated shelters and building controls)
- Technologies to improve the efficiency of electricity generation (for example, microgrids and renewable energy)

5-4. A combination of energy conservation measures can reduce base camp energy consumption by 50% or more depending on camp size and location. These energy conservation measures include:

- Smart microgrids with energy storage systems supply power with improved voltage and frequency stability, increased grid reliability and longer life of end-use equipment. If microgrids are not possible, right-sizing of existing spot generation has the potential to save significant amounts of fuel annually.
- Renewable energy systems (for example, photovoltaic arrays, solar collectors for power and hot water) that can be reliably integrated into smart base camp microgrids without harming grid

stability or degrading the output of the renewable source. A combination of spot generation with renewable energy sources is generally not recommended.

- A properly sized solar hot water heating system that can supply a significant amount of a base camp's water heating requirements using solar energy, thereby saving fuel over standard water heating configurations
- A base camp energy management system, equipped with real-time monitoring and control of base parameters, enables central and informed decision making without overburdening the operator with information
- Configurable automatic load shedding provides potential for reducing camp energy consumption for normal operations and for unplanned events

WASTE MANAGEMENT CONSIDERATIONS

5-5. Energy security and waste management are challenges for military bases, particularly in austere environments. Reducing deployed forces' current dependence on liquid fuels is a priority for the Army and other Services. Management of the waste continuously generated at austere bases is also a challenge. Alternative methods of waste disposal including open-air burn pits, burn boxes, and other field-expedient waste handling practices are of significant general interest. Waste-to-energy and other advanced waste treatment technologies may be an effective solution to both of these challenges by converting wastes into useful energy while reducing emissions and other impacts on contingency bases.

5-6. There are many waste management options for a variety of purposes, including waste disposal (elimination), volume reduction, and resource or energy recovery. A recent Army study estimates solid waste generated is approximately 19 lbs per Soldier per day. Removing just the paper and plastic trash at meals accounts for almost 13% of the total solid waste generated per Soldier. The goal is to reduce at least 50% of the trash from a base thereby reducing a significant portion of the materiel that would otherwise be disposed of or transported out – resulting in more convoys and potential casualties

5-7. Deployed forces can generate significant amounts of wastewater (grey water and black water). Roughly 80 percent of all water used on base camps for purposes other than human consumption ends up as wastewater and will require treatment and disposal. Wastewater produced by the Force Provider system will be disposed of according to base camp policies.

GREY WATER COLLECTION AND DISPOSAL

5-8. The Force Provider module is equipped with a Shower Water Reuse System which processes 12,000 gallons of grey water from showers and recycles 75% of it for reuse. Remaining grey water disposal will be performed using an approved host-nation sewage system if available. When host-nation assets are not available, each Force Provider module is supplied with a grey water collection system that is capable of storing 40,000 gallons of wastewater. Once collected, wastewater will be hauled to an approved disposal site, or as a last resort, disposed of via field expedient methods. Grey water is considered hazardous waste and it will be disposed of IAW appropriate environmental regulations and directives. Grey water disposal procedures are outlined in FM 3-34.5, *Environment Considerations*.

BLACK WATER DISPOSAL

5-9. Wastewater collected in the holding tanks of the expeditionary latrine systems is called black water. It is considered hazardous waste, and is therefore a danger to the environment and to personnel. Care must be taken when disposing of black water. Black water may be collected from the latrines and disposed of through an approved host-nation sewage system, may be hauled to an approved disposal site by military personnel or civilian contractor, or as a last resort, disposed of via field expedient methods. A wastewater evacuation tank/trailer is provided as part of each module and will be used to collect and properly dispose of black water. FM 3-34.5, *Environmental Considerations*, provides guidance and compliance information on hazardous waste storage and disposal.

ENVIRONMENTAL RESPONSIBILITIES

5-10. QM Force Provider Company personnel embrace their role in environmental responsibilities and endeavor to exemplify their care and concern for the environment throughout all facets of system operations. Operations must be planned to be carried out without harming the local environment. Future plans call for adapting Force Provider sub-systems to conserve additional resources and move toward the ultimate objective of a nearly self-sustaining system. Sound environmental stewardship enables Force Provider leaders to better take care of Soldiers and also conserve resources vital to combat readiness. The purpose of the environmental protection stewardship program is to standardize environmental protection compliance with federal, state, local, and host-nation laws and regulations. FM 3-34.5, *Environmental Considerations*, provides guidance and information on basic environmental protection stewardship. Noncompliance with the program may result in:

- Damage to the environment and to natural resources
- Endangerment of personnel health and safety
- Severe civil or military penalties

ENVIRONMENTAL PROTECTION STEWARDSHIP GOALS AND REQUIREMENTS

5-11. Stewardship is the careful and responsible management of resources entrusted to the government in order to execute responsible governance. The Army no longer merely complies with the laws and regulations of environmental protection stewardship. It leads in environmental protection matters by setting goals and requirements for its leaders. The goals of the Army's environmental stewardship protection program are:

- Compliance. Ensure that all Army sites and operations attain and sustain 100 percent compliance with environmental laws and regulations in a climate of changing requirements. Army sites or operations could be subject to a notice of violation or a fine for not following host-nation, local, state, or federal environmental directives.
- Prevention. Adopt and use integrated management approaches in all Army mission areas to prevent and reduce the volume and toxicity of all categories of environmental pollution.
- Conservation. Conserve, protect, and enhance environmental and cultural resources entrusted to the Army's stewardship of future generations using all practical and available means consistent with the Army mission.

5-12. The requirements of the Army's environmental stewardship protection program are:

- Appraisal. Require an appraisal to determine potential environmental impacts.
- Training. Require all key Army decision-makers and planners to attend National Environmental Policy Act training.
- Restoration. Ensure strict compliance with all spill and release reporting, timely resource requests and allocations, and clean-up requirements of all Army contaminated sites, as quickly as resources are made available to protect human health and the environment.
- Environmental Considerations. Ensure environmental considerations and cultural resources protections are integrated into the conduct of operations at all levels of command. Commanders and staffs must identify and integrate them as early as possible in any initial planning and/or ongoing operations.

ENVIRONMENTAL PROTECTION CONSIDERATIONS

5-13. An effective environmental protection stewardship training program allows personnel to carry out their responsibilities without undue damage to the environment or to personnel safety. It is the responsibility of the chain of command to ensure that all personnel are trained on environmental hazards and the appropriate precautions for reducing or eliminating damage to the environment or risk to personnel. See

Appendix E for unit level environmental training programs, responsibilities of personnel and spill response recommended procedures.

HAZARDOUS MATERIAL REQUISITIONING

5-14. The hazardous material (HM) and hazardous waste (HW) coordinator will maintain an up-to-date list of all the unit's hazardous materials, documents, and corresponding manuals. The unit inventory should be kept as small as possible to reduce potential for incident. The least hazardous or potentially hazardous material needed to do the required task should be requested.

HAZARDOUS MATERIAL STORAGE

5-15. Storage of hazardous materials (HM) can create safety hazards and extended term storage may lead to environmental hazards. Hazardous materials will be stored in their original or approved containers. All containers must be clearly labeled with the appropriate material safety data sheet information. Material safety data sheets will be kept in the appropriate hazard communications manuals. HM will be used on a first-in first-out basis. Surplus quantities of HM, which need an extended period of storage, will be turned in.

HAZARDOUS MATERIAL TURN-IN

5-16. Petroleum, oils and lubricant products will be stored with secondary containment measures. To stop spillage outside the immediate area, berms that can hold one and one-half times the volume of the largest container stored in the area will be constructed. All HM and HW must be stored so that they are protected from the elements and to maintain container integrity. All containers must be inspected weekly for leaks and for incomplete, unreadable, or out-of-date labels. HW will be inspected weekly. Inspection results will be documented in a log and made accessible to federal, state, or local inspectors. Inspection logs will contain the following:

- Description of waste
- Location
- Quantity
- Date accumulation started
- End of 90-day period
- Date removed to Defense Logistics Agency Disposition Services (DDS) or other agency
- Remarks (condition of containers)
- Inspector's printed name, signature, and date of inspection

5-17. Defense Logistics Agency Disposition Services (DDS) provide guidance for local turn in of hazardous waste and unused hazardous material. All HW waiting turn-in must be documented using an accumulation log. The log provides the date the container was opened, date and quantity of each addition to the container, name of the person adding hazardous waste to the container, the date the container was filled or closed, and the date of turn-in to DDS or other authorized agency. All turn-in documents for hazardous material and hazardous waste and the accumulation logs for hazardous waste must be kept on file by the unit for two years.

HAZARDOUS WASTE ACCUMULATION

5-18. HW will be labeled, accumulated on a non-permeable bermed hardstand with secondary containment in place, and located at least 50 ft from any buildings. HW storage areas must be downwind and down gradient from any personnel billeting and dining facility operations by a minimum of 15 meters (50 feet). HW must be protected from the elements. Used greases, solvents, brake fluids, hydraulic fluid, and antifreeze are examples of substances that should be stored in separate containers. To safeguard against spills and prevent water seepage, keep HW containers closed except when depositing waste.

5-19. Sufficient headspace must be allowed in the containers to prevent overflow from the expansion of HW. Table 5-1 provides the headspace requirements.

Table 5-1. Headspace for containers

Container	Headspace (Inch)
5 gallon can	1 ½ to 2
55 gallon can	3 to 4

5-20. To be accepted for turn-in, the HW must be stored in safe, non-leaking, durable containers. Leaking containers must be over-packed in steel removable-head drums. Containers leaking liquid must be packed in absorbent material. A leaking 55-gallon drum may be over-packed in an 85-gallon drum. The absorbent material must be able to soak up all of the liquid contents of the drum; therefore, 6 inches of absorbent must be on the bottom and top of the interior container, with at least 2 inches along the sides. Leaking containers of non-liquid hazardous waste may not need to be over-packed with absorbent material. Many liquids, such as battery acid, cannot be packed in steel containers.

SPILL RESPONSE

5-21. A reportable spill is one that involves any amount of hazardous material which may harm the environment or personnel. The hazardous materials most commonly associated with Force Provider are fuel, oil, hydraulic fluid, grease, solvent, grey water, and black water. While other potentially hazardous substances exist, these are the most prevalent and require effective management planning.

5-22. In areas where hazardous material are used or stored or where hazardous waste is stored, appropriate supplies, equipment, and personal protective items must be readily available to allow an immediate response to spills or accidents. Refer to the material safety data sheets for a specific product or contact the HW and HM section of the DDS for guidance on the spill response items and equipment required to safely respond to a spill incident.

PROMOTING SAFETY AWARENESS

5-23. Safety in the field is not all common sense. Soldiers are encouraged to continually conduct their work safely and to assist others in working safely. Leaders must set the example. They must train Soldiers in the techniques and procedures for working safely and avoiding unnecessary accidents or injury. AR 385-10, *The Army Safety Program* and Department of the Army Pamphlet 385-40, *Army Accident Investigations and Reporting*, provide information on the Army’s safety program, and ATP 4-02.5, *Casualty Care*, outlines actions to take if an injury occurs.

5-24. The commander ensures that all personnel are performing safely in their jobs. He must also ensure that their job descriptions clearly delineate safety responsibilities. All supervisors and Soldiers will receive safety training. Supervisors will be trained to recognize and eliminate hazards and to develop other required skills to implement the Army’s safety program at the working level. Soldiers will receive specialized job, safety, and health training. This training will include Occupational Safety and Health Agency criteria and the hazards associated with any materials or operations in the workplace.

LIFTING HAZARDS

5-25. The setup, operation, and dismantling of the Force Provider module are labor intensive. It requires personnel to do a large amount of lifting and bending. Many items associated with the module, such as the Army Water Heaters or the sewage ejection pump, weigh in excess of 400 pounds and require a forklift to position. The erection of the TEMPER tent requires extensive amounts of bending and lifting. If done improperly, this may affect the health and safety of personnel. Supervisors will ensure that all Soldiers use proper lifting techniques and body mechanics when setting up, operating, and dismantling the Force Provider module. Soldiers will be tasked in teams suitable to the lifting needs of the job. Forklifts and other equipment will be used whenever possible to reduce the risk of personal injury.

ELECTRICAL HAZARDS

5-26. Each Force Provider module uses electrical power. Electricity in field conditions presents unusual safety hazards which must be managed to prevent personnel injury or death. To prevent electrical shock, each subsystem and structure will be thoroughly grounded using an earth ground. The proper electrical grounding rods are provided in the Force Provider shipping containers. Electrical system grounding should be inspected periodically to ensure proper grounding is constantly maintained for the electrical systems of all subsystems and structures.

5-27. Electrical cables should be inspected periodically for cuts, abrasions, and connectivity. Power should be removed from cut or abraded cables which will be repaired or replaced. Field conditions may require electrical cables to lay in mud or standing water. If possible, sandbags and other nonconductive materials such as wood must be used to raise cables off the ground. If required, cables may also be buried to ease the movement of equipment and personnel, and to prevent damage or electrical shock.

5-28. A Soldier will NEVER be allowed to work on electrical equipment with power applied. Soldiers will shut off electrical power, disconnect the power source, if necessary, and tag out the power source until all repairs are complete. Soldiers will also utilize the buddy system whenever performing work on electrical equipment.

EXPOSURE TO HAZARDOUS MATERIALS OR WASTE

5-29. Force Provider uses and generates hazardous material and waste which are dangerous to personnel. Personal protective equipment will therefore be available for use.

5-30. Force Provider uses a great amount of fuel to power the tactical generators, organic vehicles and equipment. Fuel is a personnel hazard in the form of contact, flammability, ingestion, and inhalation. It must always be handled with care. Fuel storage areas will be clearly marked and designated as "no smoking" areas. These markings will also include the languages of the host-nation where applicable. Proper grounding procedures will be used whenever transferring fuel from one item to another. Fuel storage facilities or containers will always be properly grounded.

5-31. Fuel also presents a danger in the form of carbon monoxide. Expended fuel produces carbon monoxide gas, which if inhaled for an extended period of time, can cause injury or death. Engine exhausts must be appropriately vented into outside air. Soldiers must not be permitted to work in unventilated areas where carbon monoxide gas may be present.

5-32. Wastewater generated from the operations of the Expeditionary Shower System and the Expeditionary Batch Laundry is considered grey water. Grey water contains detergents, bleaches, and other substances which may be hazardous to personnel. It is a personnel hazard in the form of contact and ingestion. Every effort should be made to eliminate or reduce exposure to grey water. If Soldiers must work with components containing grey water, appropriate personal protective equipment should be worn. If a person comes in contact with grey water, they must immediately and thoroughly flush the exposed area with soap and potable water.

5-33. The containerized latrine uses internal storage tanks to contain human wastes. Black water is a personnel hazard in the form of contact, ingestion, and inhalation modes. It is a hazardous waste. Soldiers who must work with items containing or contacting black water should wear appropriate personal protective equipment to reduce risk. If they come in contact with black water, they must thoroughly flush the exposed areas with soap and potable water. For extreme exposure, medical treatment must be sought immediately after decontamination.

5-34. Force Provider uses highly chlorinated water to sanitize the potable water subsystems before it is dismantled. Highly chlorinated water is toxic to personnel. It is considered hazardous waste. Highly chlorinated water presents a hazard to personnel in the form of contact, ingestion, and inhalation. Soldiers that work with items containing or contacting highly chlorinated water must wear appropriate personal protective equipment to eliminate or reduce risk. If a person comes in contact with highly chlorinated water, they must thoroughly flush the exposed areas with soap and potable water. For extreme exposure, medical treatment must be sought immediately after decontamination.

SUMMARY

5-35. This chapter has discussed Operational Energy, environmental compliance and safety awareness within the Force Provider Company operations. Force Provider modules are continuously undergoing and implementing new technologies to reduce fuel consumption, resupply, and back-haul of waste. Incorporating new technology such as the shower reuse water system continuously supports the Army's goal of being the national leader in environmental and natural resource stewardship for present and future generations.

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Appendix A

Force Provider Major Components

Table A-1. Force Provider major components.

<i>Nomenclature</i>	<i>Quantity</i>		
	<i>150 person Module</i>	<i>50/75 person Module</i>	<i>Four 150 person Module co-located</i>
Deployable TRICONS	13	6 (7 to support 75 personnel)	67
Latrine Systems	2	1	8
Shower Systems	2	1	8
Expeditionary TRICON Kitchen Systems	1	1	4
Containerized Batch Laundry	1	1	4
TRICON Refrigerated Containers	1	1	4
60 Kilowatt Tactical Quiet Generators	6	3	26
TEMPER Tents (Air supported)	11	5 (6 to support 75 personnel)	52
400K British thermal unit water heaters	1	1	4
Improved fuel distribution system	1	1	4
Wastewater Evacuation Tank/trailers	0	0	2
Electric Power Distribution Box	6	3	26
ECUs	12	6	56
Shower Water Reuse System	1	0	4
Site Preparation Kit	Optional	Optional	1
<i>Optional/Add-on Kits</i>			
Cold Weather Modification System	1	1	1
Prime Power Modification System	1	1	1
Electric Kitchen	0	0	1

Legend: K=thousand

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Appendix B

Force Provider Cold Weather Kit

Table B-1. Force Provider cold weather kit.

Qty	Nomenclature	Part Number	CAGE
56	Alarm, Carbon Monoxide	900-0146	0J0S5
9	Astro-Foil, 4ft x 50ft	Astro-Foil 450	1QAA6
6	Bag, Sand, acrylic, green	A-A-52140A-1	58536
16	Blanket, supply pump, green	COVERS-20008-01	4JKJ9
16	Blanket, waste pump, green	COVERS-20010-01	4JKJ9
10	Brace, lumber, 2 x 6 x 75 ¾ in	9-1-0771-1	81337
56	Brace, wood, MTH-150	9-1-1415-1	81337
75	Cable tie, nylon, 14 in, 100lb	MIL-S-23190	81349
28	Can, Fuel, military, plastic, 5 gallon, green	CID A-A-59592	58536
4	Cap, rain, 5 in dia, 26 GA, Galvanized steel	9-2-0241-1	81337
10	Container, reusable, bulk equipment, medium	9-1-0142-2	81337
15	Container, shipping and storage-triple (TRICON) with connectors, green	BXTBSGATPD0003	09PD1813 37
4	Container, TRICON, modified, cold weather, green	9-2-4013-1	81337
8	Cord, adapter, W, #12 AWG/3, 125V, SJTW, NEMA 5-15	9-2-0182-1	81337
48	Cord, extension, 50ft, #12 AWG/3, 125V, SJTW, NEMA 5-15	9-2-0181-2	81337
112	Cord extension, 50ft, mil spec to commercial, 20 AMP	9-1-0613-1	81337
48	Cover assembly, insulated, tank, 3K gallon, water, green	9-1-0826-1	81337
10	Cover, reusable container, TY4	9-1-0758-4	81337
64	De-Icer, floating w/guard, 1500W, 120V	521G	99006
16	Duct, round, snap lock, galvanized steel, 5 in dia, 2 ft long	9-2-0240-4	81337
32	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-510	4JKJ9
20	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-511	4JKJ9
448	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-512	4JKJ9
4	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-513	4JKJ9
104	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-514	4JKJ9
4	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-515	4JKJ9
16	Heat trace sleeve, hose, 1 in x 25 ft, green	4089-518	4JKJ9
298	Heat trace sleeve, hose, 1 in x 25 ft, green	COVERS-20249	4JKJ9
4	Heater, 110K BTU, portable, df/kerosene	9-2-0234	81337
56	Heater, 102K BTU, MTH-150	15001	92878
5	MTH 150 contingency spares, Type I	9-2-0127-1	81337
14	Pallet, packout	9-2-0100-1	81337

Table B-1. Force Provider cold weather kit (continued)

<i>Qty</i>	<i>Nomenclature</i>	<i>Part Number</i>	<i>CAGE</i>
26	Rake snow, commercial	9-1-0605	81337
5	Repair kit, heat trace sleeve	9-2-0145	81337
26	Shovel, snow, plastic, commercial	9-1-0604	81337
4	Shower water reuse system cold weather kit, green	9-2-0174-1	81337
94	Special purpose web, tiedown	FDC5770-5	98313
28	Spout, fuel can, flexible	13219E2600	97403

Legend: K=thousand; in=inches; V=voltage; BTU=british thermal unit; lb=pound; dia=diameter; W=watt;

Appendix C

Force Provider Prime Power Kit

Table C-1. Force Provider prime power kit.

<i>Item #</i>	<i>Qty</i>	<i>Specification/Part Number (CAGE)</i>	<i>Item Descriptions</i>
1	24	BS1-10(30105)	Bond, Stud
2	80	1601A4(11117)	Bushing Insert, loadbreak, 200A, 15kV class
3	20,000 ft	114-23-3827 (82903)	Cable, conductor, 2/0, shielded 5kV, 133%, direct burial
4	24	29P0(81362)	Cone, traffic, orange, 28 in
5	60	10006 (1QDV5)	Connector, barrel, 2/0 compression
6	16	BXTBSGATPD0003(09PD1)	Container, shipping and storage-triple with connectors, green
7	4	13477 (56501)	Die, lower, #2-3/0 cu, #4-1/0 aL
8	4	13474 (56501)	Die, upper, #2-3/0 cu, #4-1/0 al
9	4	TBM6S (56501)	Hand crimper
10	80	166LR-A-5250-SG3 (11117)	Loadbreak elbow, with test pint
11	400	N165 (2K066)	Nut, hex
12	4	9-2-0100-1 (81337)	Pallet, packout
13	24	A-A-55804-3B (81348)	Rod, ground, sectional, type III, class B with attachments
14	12	X-FS9 (79123)	Sign, plastic, floor stand, "danger high voltage/restricted area"
15	4	13226E7741 (97403)	Slide, hammer, ground rod
16	4	8020K461P21 (01XK9)	Socket, large, penta head
17	44	FDC5770-5 (98313)	Special purpose web, tiedown
18	16	5551 (0ESF3)	Splice kit, inline, 5kV
19	100	JHTB25 (2K066)	Tap bolt, hex head
20	8	U-CHY (79123)	Tape, "caution high voltage"
21	36	130c ¾ in (75037)	Tape, electrical
22	36	054007-06143 (75037)	Tape, electrical
23	8	35 ¾ blue (75037)	Tape, vinyl plastic, blue
24	8	35 ¾ red (75037)	Tape, vinyl plastic, red
25	8	35 ¾ white (75307)	Tape, vinyl plastic, white
26	80	AU-250 (74829)	Terminal lug, 2 conductor
27	4	7621-S-2 (0ESF3)	Termination kit, 5kV, three terminations
28	12	HH37B71CA316EF(4I155)	Transformer, pad mounted
29	8	A-A-59490, TYII, CL1 (58536)	Trunk, locker, type II
30	400	JSW75 (2K066)	Washer, fender, 3/8 in

Legend: kV= kilovolt; in=inches; cu=cubic

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Appendix D

Force Provider Emerging Capabilities

D-1. This appendix discusses the emerging technologies for the Force Provider modules. The capabilities/kits have been approved, but have yet to be fielded. It is anticipated that the fielding will occur during the life expectancy of this manual. Once fielded, a Change 1 will be conducted to add operational context pertaining to the emerging capabilities.

D-2. The Force Provider modules provide a modular base camp life support capability that supports 150 personnel increments with the capability to scale down to support 50/75 personnel in smaller base camps or four or more 150 person modules co-located to support larger base camps. The Force Provider assets must provide our customers with the best quality of life while possessing flexibility and modularity. This requires scalable life support capabilities designed to support a more agile and leaner expeditionary military force.

D-3. In addition to developing a more scalable/modular Force Provider, technological solutions have been developed to improve sustainment efficiency and reduce environmental risks. These transformational capabilities/kits add flexibility and versatility to the Combatant Commander's capabilities and directly support reductions in the cost of sustainment and improve mission performance. The following capabilities/kits are a part of the Force Providers emerging capabilities:

- **Water Bottling.** The water bottling/packaging add-on capability will bottle/package a minimum of 900 1-Liter bottles per hour, using potable water from approved sources. The system will operate in two 10 hour shifts using no more than three operators, two maintainers, and one Registered Sanitarian. The system will operate out of no more than one International Organization for Standards container.
- **Ice Maker.** The ice making add-on capability will automatically dispense and seal ten pound bags a minimum of 3,600 pounds of ice per day. This capability will reduce sustainment risk and cost associated with transporting ice from external sources.
- **Solid Waste Management.** The Force Provider will incorporate an integrated waste management (reduction, reuse, recycling, treatment, or disposal process) add-on capability that can safely process two tons (co-located modules) or 1,000 pounds or more (single module) of mixed solid organic waste in a single day on site and the energy associated with the management process will be converted to usable energy including fuel, heat or electric power. The capability will reduce solid waste by a minimum of 80% volume IAW appropriate regulations. Solid Waste Management will significantly reduce the Force Provider's reliance on external support and is a key capability desired to move toward zero footprint facilities. It is a substantial improvement over the current practice of burn pits, stock piles or recyclable materials and backhaul.
- **Black Water Waste Elimination/Disposal.** The Force Provider will have the add-on capability to capture, for disposal, all the black water generated by the Force Provider subsystems and safely process 5,000 – 10,000 gallons or more (co-located modules) or 1,300 - 2,500 gallons (single module) of black water in a single day. This capability will reduce the sustainment requirements for backhauling black water waste as well as the risk of contaminating the environment with biological contaminants. It also reduces the reliance on external support and will be a key capability to moving toward zero footprint base camps.
- **Ballistic Protection Kit.** The Force Provider will have ballistic protection kits for shelters as an add-on capability to protect against small arms and small fragmenting munitions that is rapidly emplaced, blast resistant, ultra-violet resistant, flame resistant, moisture resistant, and non-degradable in extreme temperature and will protect against high-powered rifles and medium fragmenting munitions. This add-on capability is not required for all modules and all shelters nor will it be used in every type of operation.

- Containerized Chapel. The Containerize Chapel is an add-on capability that will provide Religious support to deployed personnel at base camps and combat support hospitals.

D-4. The above emerging capabilities will incorporate the latest technologies while considering the logistical burden placed on supporting camps. All future efforts are aimed to reduce the two major resupply commodities of fuel and water while at the same time increasing capabilities for deployed Soldiers.

Appendix E

Force Provider Environmental Guidance and Safety Techniques

UNIT-LEVEL ENVIRONMENTAL TRAINING PROGRAM

E-1. An effective environmental protection stewardship training program allows personnel to carry out their responsibilities without undue damage to the environment or to personnel safety. It is the responsibility of the Company Commander to ensure that all personnel are trained on environmental hazards and the appropriate precautions for reducing or eliminating damage to the environment or risk to personnel.

E-2. All personnel should receive environmental awareness and protection training within 90 days of assignment and annually thereafter. All personnel will be trained to do their tasks in compliance with environmental laws and regulations. They must also respond properly to emergencies. All environmental protection, HM and HW training must be properly documented and kept on file in the operations/training office. Issues that should be addressed in the unit's environmental protection training program are:

- HM management
- HW management
- Hazardous communications
- Pollution prevention
- Hazardous waste minimization
- Spill prevention and response
- Recycling program

SPILL RESPONSE RECOMMENDED STEPS

E-3. If a hazardous waste spill occurs, available personnel will immediately take the following steps:

- Ensure the safety of those in the area.
- Evacuate the area if necessary.
- Report the spill to supervisors. Sound the alarm or give a verbal warning. Have someone call the fire department if the spill is something that cannot be handled safely.
- Extinguish smoking materials and all other sources of ignition.
- Take personal precautions as detailed on the material safety data sheet for the spilled material.
- Stop the leak or flow, if possible (shut off valves, tip drums, plug holes).
- Contain the spill by using absorbent material. Make dams to prevent materials from spreading or entering water or storm drains.
- Clean up material with a non-sparking shovel or broom. Place the residue in a serviceable container with lid, marked "Hazardous Waste - Contaminated Absorbent." Check with the ECO for proper disposal.
- If the spill resulted from a leaky container, transfer the product to a serviceable container. Label the container as follows:
 - For fuel, oil, or hydraulic fluid spills label the container "Petroleum, oil, and lubricant Spill Residue."
 - For flammable liquid spills, including solvents, paints, paint thinners, and alcohol, label the container "(name of liquid) Spill Residue-FLAMMABLE."
 - For acid spills, label the container "(name of acid) Spill Residue ACID"

- Store the container in the HW area while waiting turn-in.
- Turn-in to DDS or other authorized agency.

E-4. A written report must be generated to describe the details of the incident, corrective actions taken, and measures instituted to prevent recurrence.

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Service
AO	area of operations
AR	Army Regulation
ASCC	Army Service Component Command
ATP	Army Techniques Publication
CBRN	chemical, biological, radiological, and nuclear
DDS	Defense Logistics Agency Disposition Services
ECU	Environmental Control Unit
FM	field manual
ft	feet
HM	hazardous materiel
HNS	Host-nation support
HQDA	Headquarters, Department of the Army
HW	hazardous waste
IAW	in accordance with
LOGCAP	Logistics Civil Augmentation Program
MWR	morale, welfare, and recreation
QM	Quartermaster
TEMPER	tent, extendable, modular, personnel
TM	technical manual
TRICON	triple container
TSC	theater sustainment command
USACE	United States Army Corps of Engineers
USAMC	United States Army Materiel Command

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Index

1
150-person module, 3-1, 3-2
150-person system, 1-3

6
600 person, 2-4

A
AAFES, 1-5, 2-7
accessibility, 4-4
Accountability, 1-3
administrative, 2-7, 3-1, 3-2
Administrative, chaplain, medical,
and MWR services, 2-7
ammunition holding area, 4-8
Army and Air Force Exchange
Service (AAFES), 1-5
Army Health System, 1-5

B
black water, 1-4, 2-4, 2-6, 3-4, 4-
4, 4-11, 5-2, 5-5, 5-6

C
capabilities, iv, 1-1, 1-3, 1-4, 2-3,
4-5, 4-9, 4-11, 5-1
CBRN, 2-2, 2-7, 4-10
Chemical, Biological, Radiological
and Nuclear, 2-2
cold weather kit, 3-1, 3-3
company headquarters, 2-2, 2-3,
4-10, 4-11
compliance, 5-3
conservation, 5-3
construction, 2-3, 2-8, 3-3, 4-2, 4-
4, 4-6, 4-8
construction section, 2-3, 2-8
culvert, 4-8

D
defensibility, 1-4
dismantling, 4-11, 5-5
drainage, 1-4, 4-3, 4-6, 4-8
dunnage, 4-10, 4-11

E
electrical, 2-8, 3-3, 3-4, 4-3, 4-4,
5-6
employment, 1-1, 1-2, 1-3, 2-1, 2-
2, 2-6, 3-2, 4-1

engineering, 1-4, 4-4
environmental baseline survey, 4-
4, 4-5, 4-11
environmental impact, 4-4
environmental protection, 4-5, 4-8,
5-1, 5-3, E-1
environmental responsibilities, 5-
1, 5-3
extreme heat, 3-4

F
field feeding, 1-3, 2-4, 2-7, 3-1
force protection, 1-2, 1-5, 4-2
Force Provider Company, iv, 1-1,
1-2, 1-3, 1-4, 1-5, 2-1, 2-2, 2-3,
2-6, 2-8, 4-1, 4-2, 4-9, 4-10, 5-
3, 5-7
Force Provider support, 1-1, 1-2,
4-1, 4-11
fuel and water, 2-4

G
grey water, 1-4, 2-5, 2-6, 2-7, 3-2,
3-4, 4-4, 4-6, 4-8, 4-9, 4-11, 5-
2, 5-5, 5-6
ground elevation, 4-6

H
hardstands, 4-8
hazardous material, 5-4, 5-5
hazardous waste, 5-4, E-1
headspace requirements, 5-5
heavy platoon, 2-3, 2-6
helipad, 4-8
high elevation, 3-4
host nation, 1-2, 1-4, 2-6, 4-2, 4-4,
4-8, 4-9, 4-11, 5-2, 5-3, 5-6
host nation support, 1-2, 1-4, 4-2

K
kitchen, 2-4, 3-1, 3-2, 4-6

L
latrine, 1-3, 2-6, 3-1, 3-2, 4-4, 4-6,
5-2, 5-6
laundry, 1-3, 1-5, 2-3, 2-5, 2-6, 3-
1, 3-2
laundry and shower, 2-3, 2-5, 2-6
layout, 1-4, 4-3, 4-5, 4-7, 4-10
lifting, 5-5
light platoon, 2-6

limitations, iv, 1-1, 1-3
lines of communications, 4-4
LOGCAP, 1-2
logistical supportability, 4-3

M
maintenance, 1-2, 1-4, 1-5, 2-2, 2-
3, 2-5, 2-6, 2-7, 3-1, 3-3, 3-4, 4-
3, 4-6, 4-8
medical, 1-5, 2-7, 3-1, 4-8, 5-6
mission, iii, iv, 1-1, 1-2, 2-1, 2-2,
2-7, 3-1, 3-3, 4-1, 4-2, 4-3, 4-5,
4-6, 4-7, 4-9, 4-11, 5-3
mobility, 1-4
modules, iii, 1-1, 1-2, 1-3, 1-5, 2-
3, 2-5, 2-6, 2-7, 3-1, 3-2, 4-1, 5-
1
MWR, 1-5, 2-3, 2-6, 2-7, 3-1, 3-2,
4-7

O
occupy, 4-9
operational energy, 5-1
operators, 1-2

P
parking area, 4-8
personal protective equipment, 5-
6
platoon headquarters, 2-3, 2-6
political factors, 4-3
potable water, 4-4
prevention, 5-3
prime power, 2-8, 3-1, 3-3
prime power team, 2-7

Q
QM Force Provider company
support, 1-1

R real
estate, 1-4 reconnaissance
survey, 4-5 redeployment,
4-10
religious support, 1-5
request, 4-1
resources, 4-2, 4-3, 4-7, 4-9, 4-10,
5-3
restoration, 4-11, 5-3
road maintenance, 4-6

road reconnaissance, 4-5
roads, 4-4, 4-5, 4-6, 4-8
route reconnaissance, 4-5
RSOI, 2-2

S

safety, 4-3, 5-5
security, 2-7, 4-2, 4-3, 4-9, 4-10
setup, 4-5, 4-9
sewer system, 4-4
shipping requirements, 4-1
shower, 1-3, 1-5, 2-5, 2-6, 2-7, 3-1, 3-2
shower water reuse system, 1-5, 3-2

site, 1-3, 1-4, 2-2, 2-3, 3-1, 3-4, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-11, 5-2
site preparation, 4-5
site selection, 4-2
size, 1-3
spill response, 5-5
stewardship, 5-3
subsystem, 2-4, 2-5, 2-6, 3-1, 3-2, 4-4, 4-5, 4-8, 4-9, 4-11, 5-6
Supply and Services platoon, 2-2
support to civil authorities, 1-1

T

TEMPER, 1-3, 3-1, 5-5

terrain, 4-3
TOE, 1-1
transportation, 1-2, 1-3, 1-4, 2-7, 3-1, 4-1, 4-2, 4-9, 4-11

U

U.S. Army Corps of Engineers (USACE), 4-2
USAMC, 1-1, 1-2, 4-1, 4-11

W

wastewater, 4-4, 5-2
weather conditions, 3-3

***ATP 4-45 (FM 4-20.07)**
24 November 2014

By Order of the Secretary of the Army

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