

CHAPTER 3

PETROLEUM PIPELINE AND TERMINAL OPERATING BATTALION

Section I. The Organization

MISSION AND ASSIGNMENT

The HHC (TOE 10416L0) provides command and control of units assigned or attached for the operation and maintenance of a military petroleum distribution system. The company is normally assigned to the HHC, Petroleum and Water Group, TOE 10602L0. Though pipelines may run through a CSG AO, they are not normally attached to a CSG. They are EAC units employed in the COMMZ. However, to support a contingency, they could be assigned to a COSCOM.

CAPABILITIES

The personnel strength levels and equipment authorization levels in its TOE determine the company's capabilities. This company--

- Plans, commands, controls, coordinates, and directs up to five pipeline and terminal operating companies or medium truck companies (petroleum). Supervises other assigned and attached units used to operate and maintain the petroleum supply and distribution system.
- Extends and develops existing and proposed distribution systems at the theater level.
- Directs the operation of fixed petroleum storage facilities capable of storing large quantities of bulk petroleum products.
- Plans and directs the operations of the IPDS, TPTs, FSSPs and hose line outfits.
- Operates a central dispatching and scheduling agency to schedule and direct the flow of bulk petroleum products through multiproduct military pipelines.
- Coordinates the movement of bulk products by means other than pipeline, such as a barge, rail, and truck.
- Maintains a prescribed reserve of petroleum products.
- Supervises a program for quality surveillance of petroleum products and operates a mobile petroleum laboratory.
- Transports 33 percent of its TOE equipment and supplies in a single lift using its authorized organic vehicles.
- Unit depends on a petroleum pipeline and terminal operating company for unit maintenance and food service support.
- Unit requires one truck tractor, 5-ton, LIN Z85341 to transport a mobile lab.

ORGANIZATION

Figure 3-1, page 3-2, shows the company organization. Sections II through VIII of this chapter detail individual sections in the unit.

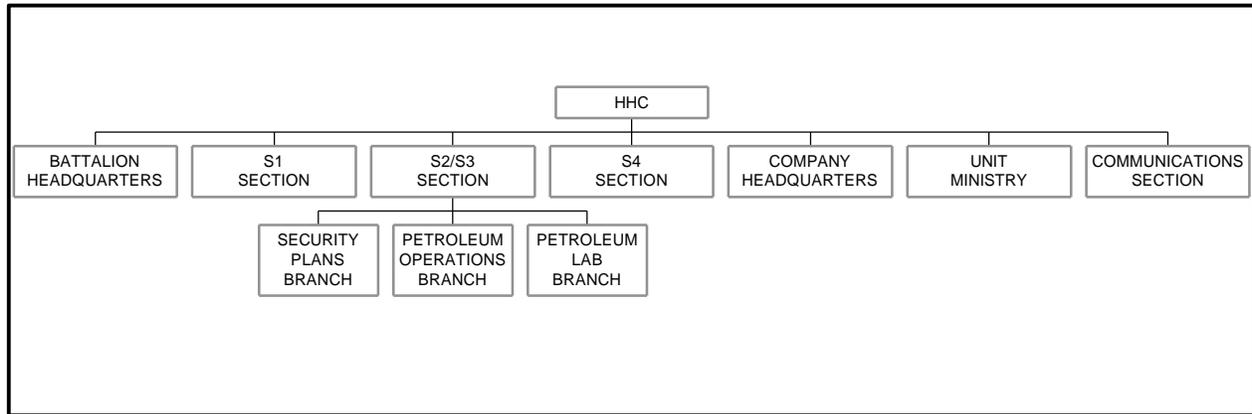


Figure 3-1. Company organization

Section II. Battalion Headquarters

MISSION AND RESPONSIBILITIES

The battalion headquarters mission is to supervise the battalion. It must also command and control all assigned and attached units.

PERSONNEL

Effective operation of the headquarters requires identifying key personnel and understanding their duties and responsibilities. Key personnel include--

Battalion Commander (Lieutenant colonel, 92F00). Provides leadership, welfare, and training for all assigned and attached soldiers. Prioritizes, plans, and coordinates present and future missions. Plans operations to comply with applicable federal, state, local, and host nation environmental laws to include ensuring all operations undergo a safety and environmental risk assessment. Ensures all personnel are trained in good environmental stewardship and that the environmental stewardship ethic is reinforced in day-to-day operations.

Command Sergeant Major (E9, 00Z50). Serves as the battalion commander’s senior enlisted advisor.

Executive Officer (Major, 92F00). Assists the commander in accomplishing the overall mission. Coordinates and directs the activities of the staff. Acts as the commander in the absence of the battalion commander.

S1 Officer (Captain, 92F00). Directs the functions of the S1 section. Directs all technical administrative operations of the battalion and its assigned or attached units. Section III gives more on his responsibilities.

S2/S3 Officer (Major, 92F00). Directs the functions of the S2/S3 branch. Plans, controls, and supervises the operation of the battalion petroleum distributing system. This system may consist of as much as 450 miles of multiproduct pipelines and related terminal facilities. Section V gives more on his responsibilities.

S4 Officer (Captain, 92F00). Directs the functions of the S4 section. Plans, coordinates, and supervises all supply and maintenance activities and other related logistical matters required to support the battalion.

Chaplain (Captain, 56A00). Conducts religious activities for the battalion according to AR 165-1. Section IV gives more on his responsibilities.

Communications and Electronics Staff Officer (Captain, 25A00). Plans and determines requirements for signal communications support and for use of signal communications equipment. Coordinates with the area signal officer as required.

OPERATIONS

Some of the responsibilities in key functional areas of the battalion headquarters follow. Sections in this chapter detail these responsibilities.

- Plan and prepare for the deployment/redeployment of the battalion.
- Conduct all operations with minimal environmental damage as dictated by the operational situation.
- Guide and supervise subordinate units.
- Plan and set up air defense measures.
- Monitor the tactical and technical performance of subordinate units. Provide guidance and training programs to improve this performance.
- Provide logistical and administrative support for subordinate units.
- Plan and supervise religious activities.
- Plan and coordinate installation and use of a communications network.
- Advise higher headquarters of operating situations and requirements.
- Plan and implement appropriate environmental stewardship and safety programs in both tactical and garrison operations.
- Conduct operations with minimal damage to the environment as dictated by the operational situation.

EQUIPMENT

Table 3-1 lists equipment identified for the battalion headquarters by TOE 10416. CTAs may authorize other equipment. Use CTA 50-900 for clothing and individual equipment and CTA 50-909 for field and garrison furnishings and equipment. Expendable and durable supplies are listed in CTAs 8-100 and 50-970.

Table 3-1. Battalion headquarters TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	2
Camouflage screen support system: woodland/desert	3
Camouflage screen system: woodland lt wt radar scat without support system	3
Installation kit: MK-2310/VRC for AN/VRC-87/88/90I in M1009	1
Installation kit vehicular electronic equipment: MK-2564/VRC-97	1
Radio set: AN/VRC-90A	1
Reeling machine cable hand: RL-39	2
Speech security equipment digital subscriber voice terminal: TSEC/KY-68	1
Telephone wire with reel: MX-10891/G	1
Terminal radio-telephone mobile subscriber: AN/VRC-97	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	2

Section III. S1 Section**MISSION**

The S1 section supervises, plans, and coordinates all administrative and personnel activities in the battalion. The S1 section--

- Provides for a message center.
- Maintains office records.
- Publishes orders for the assignments of replacements within battalion headquarters and subordinate units.
- Provides for personnel management and classification. It also maintains liaison with the appropriate personnel services unit on personnel actions.
- Maintains liaison with the supporting finance direct support company on financial services.

RESPONSIBILITIES

The S1's overall responsibility is to make sure the section completes its assigned missions successfully. General areas of responsibility for the S1 are--

- Unit strength maintenance.
- Personnel management.
- Manpower management.
- Morale.
- Nonjudicial and administrative disciplinary actions.
- Health and safety.
- Staff coordination with higher headquarters personnel sections.

PERSONNEL

Effective operation of the section requires identifying key personnel and understanding their duties and key responsibilities. Key personnel in the S1 section include--

Personnel Sergeant (E7, 75H40). Assists the S1 officer in the operations of the section. This NCO also assists with the units assigned and attached to the battalion.

Legal Sergeant (E5, 71D20). Maintains and processes all legal paperwork in the battalion. Coordinates with the serving staff judge advocate on legal matters.

Administrative Sergeant (E5, 71L20). Supervises the administrative specialist. Supervises the preparation of military correspondence and orders. Maintains files and records. Compiles and submits administrative reports and coordinates publications.

Administrative Specialist (E4, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

Administrative Clerk (E3, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

OPERATIONS

The section provides administrative support, prepares SIDPERS, manages personnel, provides legal assistance, coordinates medical support, and operates a central record library. More specific operations include--

Administrative Support

The section authenticates orders and directives and maintains the filing system IAW MARKS. The section prepares, verifies and submits casualty feeder reports to the casualty section of the appropriate commander. The section takes prompt action on administrative instructions received from higher headquarters and requests from subordinate units. The section maintains accurate personnel records. It assigns replacements according to MOS and unit requirements. AR 672-5-1 gives standards on how to prepare, review, and process recommendations for awards and decorations. AR 600-200 has guidance on planning enlisted personnel management system procedures.

SIDPERS

Refer to DA Pamphlet 600-8-1 for unit-level procedures and DA Pamphlet 600-8-20, SIDPERS handbook for commanders.

Personnel Management

The section's personnel management responsibilities are--

- Personnel requirements. Subordinate units send the section their personnel status reports. Once section personnel know unit requirements, they coordinate soldier assignment priorities with the S2/S3 officer, unit commanders, and the battalion commander. It assigns personnel based on valid position numbers in the UMR. DA Pamphlet 600-8-1 gives more information. The section designates assignments for each person during the current SIDPERS cycle. Then it inputs the necessary information in the next SIDPERS cycle. FMs 12-1, 12-2, 12-3-2, 12-3-3 and 101-10-1 give information on planning the personnel management program.

- Casualties. Subordinate units will send the section their casualty reports. Within 1 hour after receipt, the section prepares a SIDPERS deceased transaction and a SIDPERS organization strength report change. DA Pamphlet 600-8-1 outlines procedures. Report strength figures are extracted from current unit totals.

- Equipment, documents, and EPWs. When subordinate units take EPWs, the S1 section provides processing guidance. They give instructions for EPW evacuation and interrogation. The section coordinates procedures with local military police. They also coordinate with the S4 section for captured materiel evacuation and with the S2/S3 for document evacuation. Procedures for EPW handling are in FM 19-40 and FM 30-15, Chapter 3. FM 101-10-1 gives general guidance.

- Personnel daily strength summary. Subordinate units report their maintenance and unit strength data each day. When reporting to higher headquarters, units show the section all organic and attached units separately. They identify them by line number. They do not show detached units. By 1800 on the date of the report, the section reports recorded data to higher headquarters by unit, attachment, and group. They report strength, losses, gains, number of PWs, number of days in the area of operations, and number of days in combat.

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- Personnel data card. The section maintains DA Form 2475-2. This form provides strength accounting for personnel that are not members of the Active Army attached to the unit. The section posts the PDC according to DA Pamphlet 600-8-1. They record loss and casualty data. Next, they post the UMR and the zero balance report. They use data from the PDC to do this. After posting data, the section sends part 1 of the PDC to higher headquarters.

- Replacement personnel. The section in-processes replacements. They verify assignments based on vacancies with the unit and recommendations of the S2/S3 officer. They send assignment notice to the receiving unit. They also note this on the UMR. They ensure units submit SIDPERS transactions to the higher headquarters. DA Pamphlets 600-8 and 600-8-1 give more information. The section orients replacement personnel to the unit the day they arrive. The orientation includes information on unit mission, the chain of command, mail procedures, personnel policies, and personnel services as a minimum.

Personnel Services

The section manages personnel services program. It administers such matters as leaves, passes, and rotations. It also includes--

- Projected quotas for each unit for rest camps, recreation centers, and leave areas.
- Information on services provided by Army Emergency Relief and the chaplain and information on the Staff Judge Advocate, the Equal Opportunity Office, and special services.
- Actions taken on finance coordination with the supporting finance office. FM 14-6 gives guidance.
- Scheduling of personnel services for minimum interference with the unit's mission.
- Coordinates transportation requirements for movement to service areas.

Discipline, Law and Order

The S1 administers actions under the UCMJ. AR 27-10 gives more information. The S1 officer also recommends measures to the commander to improve discipline, law, and order.

Morale Support

Section personnel monitor subordinate units' morale by making unit visits. To evaluate unit morale and morale enhancement programs, they should follow the guidelines in FMs 22-101 and 101-5 and DA Pamphlet 1-2.

Labor Services

Subordinate units identify and report labor requirements to the section. The section then processes requests for civilian labor. The S1 ensures the requests meet approved guidelines and then coordinates civilian labor requirements with supporting labor service teams. The section coordinates the use of labor in functional areas with all other staff sections. FM 101-10-1, and FM 100-10, Chapter 13, gives guidance.

Legal Assistance

The section's legal sergeant provides legal administrative support and special courts-martial support to the soldiers and commander.

Medical Support

The S1 section coordinates with the local medical commander to determine the location of facilities and the services available. Section personnel coordinate procedures for routine and emergency evacuation. The S1 prepares a medical plan that ensures adequate coverage for all subordinate units. These plans should include dental support, instructions for treatment, and chain of medical evacuation. It should also include hospitalization and preventive medicine support beyond organic capabilities. FM 8-10 discusses the procedures for providing medical support. FM 101-10-1 also gives more information.

Command and Public Information

The section briefs the commander's staff and unit commanders on command information. The command briefing should include the following information as a minimum:

- Planning information activities.
- Publishing command information in newspapers and other media.
- Operating command information broadcast stations and networks.
- Reviewing information for security clearance before public release.

Library Services

The section operates a central records library for documents kept longer than 30 days. The section services the units or individuals requesting information or copies of documents from the library. AR 25-400-2 gives guidance on setting up an organized library file system.

Files and Records

Publications and files of supported units should be checked to ensure they are current. They should be maintained according to regulations. AR 340-2 gives guidance files and records maintenance. A list of current publications is in DA Pamphlets 310-1 and 310-35.

EQUIPMENT

TOE 10416 prescribes the equipment for the S1 section. See Table 3-2 for a list of this equipment.

Table 3-2. S1 section TOE-prescribed equipment list for TOE 10416

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	1
Camouflage screen support system: woodland/desert	2
Camouflage screen system: woodland lt wt radar scat without support system	2
Generator set: diesel engine-driven, skid-mounted, 5-kw, 60-hz	1
Duplicating machine spirit process: table-mounted, elec/hand 9-15L in	1
Lightweight digital facsimile: AN/UXC-7	1
Reeling machine cable hand: RL-39	2
Telephone wire with reel: MX-10891/G	1
Telephone digital nonsecure voice: TA-1035U	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	1
Computer digital: CP-2251 (P) (V) 1/TYQ	1
Computer digital: CP-2245 (P) (V) 9/TYQ	4

Section IV. Unit Ministry Team

MISSION

The UMT provides for religious ministry, pastoral care, and the moral and ethical well being of the unit. It advises the commander and staff on matters of religion, morals, and morale.

RESPONSIBILITIES

The UMT's overall responsibility is to successfully provide religious ministry for the command. Specific UMT responsibilities include--

- Coordinating, integrating, and supervising all chaplain activities, religious services, ministries, and observances and the use of facilities as approved by the commander.
- Setting up and maintaining liaison with staff chaplain of higher, equal, or subordinate headquarters, the other military services, government agencies, the armed forces of allied nations, and officials of civilian churches and other religious organizations.
- Deploys with the battalion to offer religious services, counseling, and morale support on all training or operational deployments.
- Facilitating the "free exercise" rights of all personnel, regardless of religious affiliation of either the chaplain or the soldier.
- Providing area chaplain services coverage within the geographical area or as specified in the area coverage plan.
- Providing denominational services where practical.
- Providing guidance to the battalion's family support group.
- Providing chaplain coverage to EPWs and all others as outlined in AR 165-1.

PERSONNEL

The battalion chaplain is responsible for supervising the UMT. Key personnel on this team include the Chaplain Assistant (E4, 71M10) who performs or supervises the performance of religious support in the battlefield or in garrison. The chaplain assistant also provides personal protection and administrative support to the battalion chaplain.

EQUIPMENT.

TOE 10416 prescribes the equipment for the UMT. See Table 3-3 for a list of this equipment.

Table 3-3. UMT TOE-prescribed equipment list for TOE 10416

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	1
Cable telephone: WF-16/U	1
Camouflage screen support system: woodland/desert	3
Camouflage screen system: woodland lt wt radar scat without support system	3
Digital nonsecure voice terminal (DNVT): TA-954/TT	1
Chest hymnbook: with handles	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Reeling machine cable hand: RL-39	2
Telephone wire with reel: MX-10891/G	2
Telephone set: TA-312/PT	1

Section V. S2/S3 Section

MISSION

This section is responsible for the intelligence, security, operations, and training necessary to support the battalion's critical wartime mission: to provide a petroleum distribution system to an assigned area. This section plans and supervises the security of the battalion's area. It coordinates with the RAOC and the HHC commander to implement a rear area security plan. The S2/S3 is responsible for the production of intelligence, and counterintelligence and intelligence training and security. It is responsible for communications, communications security, and relaying, on request, local weather observations. This section also directs activities pertaining to organization, operations, training, and deployment readiness for subordinate units, including, but not limited to, taskings, QTB, USR, and schools management. The three branches assigned to the section are a security and plans branch, petroleum operations branch, and petroleum laboratory branch.

RESPONSIBILITIES

The battalion S2/S3 officer is responsible for overall command and control of the three subordinate branches in the S2/S3 section. The officer--

- Exercises authority through each branch chief.
- Advises the battalion commander on matters relating to the security, plans, training, and operation of the battalion.
- Develops operational and training plans for the battalion.
- Implements environmental stewardship program in key areas of interest such as environmental training programs and land management. This includes ensuring all operations undergo environmental and safety risk assessments. See TC 5-400.

PERSONNEL

Effective operation of the section requires identifying key personnel and understanding their duties and responsibilities. Key personnel include--

Petroleum Operations Sergeant (E8, 77F50). Develops plans, and coordinates and controls petroleum support operations for the battalion. Monitors all operations to ensure they reduce damage to the environment within the scope of the tactical situation. Acts as the assistant S2/S3 when needed.

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NBC Operations/Staff NBC NCO (E7, 54B40). Assists in planning and applying NBC defense measures for subordinate units and coordinates decontamination operations, when necessary. Plans, coordinates and evaluates the battalion's NBC training program.

Petroleum Surveillance Sergeant (E6, 77L30). Plans and supervises a program for quality surveillance of petroleum products.

Signal Support System Specialist (E3, 31U10). Installs and maintains the battalion telephone and wire system. Operates the battalion message center once systems are installed.

Administrative Specialist (E4, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

Petroleum Supply Specialist (E3, 77F10). Assists the petroleum operations sergeants and petroleum surveillance sergeant with the conduct of their assigned mission.

EQUIPMENT

TOE 10416 prescribes the equipment for the S2/S3 section. See Table 3-4 for a list of this equipment. Equipment for the branches within the S2/S3 section is listed separately.

Table 3-4. S2/S3 section TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	1
Camouflage screen support system: woodland/desert	3
Camouflage screen system: woodland lt wt radar scat without support system	3
Facsimile set: AN/TXC-1	1
Installation kit: MK-2325/VRC for AN/VRC-87/88/90 in HMMWV	1
Installation kit electronic equipment: MK-2565/VRC-97	1
Power supply: PP-6224/U	1
Speech security equipment digital subscriber voice terminal: TSEC/KY-68	1
Telephone wire with reel: MX-10891/G	2
Telephone digital nonsecure voice: TA-1035/U	1
Terminal radio-telephone mobile subscriber: AN/VRC-97	1
Data transfer device: AN/CYZ 10	1
Radio set: AN/VRC-90A	1
Reeling machine cable hand: RL-39	3
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	1

OPERATIONS

The section plans, monitors and coordinates all aspects of training, tactical operations, area security and communications within the battalion's area of responsibility. The battalion S2/S3 ensures the branches under his control adequately perform their duties in a systematic, coordinated effort in support of the battalion's mission.

ORGANIZATION.

The battalion S2/S3 section is organized into branches to do its mission. The branches are responsible for specific functions which are described in the following paragraphs.

Security and Plans Branch

Mission. This branch supervises the employment, deployment, training, and security of the battalion. It also covers battalion units and the petroleum distribution system. The branch--

- Develops plans and supervises training of assigned and attached units.
- Develops and implements training programs for the headquarters and subordinate units.
- Develops and implements general educational development programs.
- Plans, directs, coordinates, and supervises intelligence, counterintelligence, and civil affairs programs.
- Develops and coordinates plans for security and defense of the headquarters and subordinate units.
- Develops the situation paragraph for OPORDs and OPLANs. Makes recommendations to the battalion S2/S3, petroleum operations officer, and battalion commander on the best method to protect the force.
- Plans all training to comply with applicable national, state, local and host nation environmental protection laws to determine potential for environmental impact.

Responsibilities. A Petroleum Sergeant, (E7, 77F40), is NCOIC of this section. He--

- Prepares broad planning guidance, policies, and programs for command organizations, operations, and functions.
- Develops policies and guidance for the training of the command and evaluating this training.
- Plans all activities to comply with applicable national, state, local, and host nation environmental protection laws.
- Exercises staff supervision over all OPSEC activities.
- Manages the security clearance program for the battalion.

Personnel. Key personnel include—

Intelligence Sergeant (E5, 96B20). Performs intelligence preparation of the battlefield. Provides technical advice to the staff on intelligence matters. Assists in writing the intelligence estimates for OPORDs and OPLANs.

Administrative Clerk (E3, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

Operations. This branch of the S2/S3 section performs the following intelligence and security operations:

Intelligence operations include conducting intelligence preparation of the battlefield, developing intelligence estimates, and providing intelligence support. This branch maintains the current intelligence summary and an estimate. An analysis of a summary and an estimate will help in preparing an OPLAN and OPORD. The branch reviews and revises intelligence and counterintelligence requirements. Intelligence information is collected, analyzed, processed, and disseminated continuously. This process requires close supervision and planning to execute. FM 34-60 covers counterintelligence. It discusses the counterintelligence estimate, work sheet, and plan. The work sheet is vital. It is used to prepare counterintelligence plans, orders, and requests. The security and plans branch analyzes the threat situation and

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makes recommendations when necessary. It also provides information to subordinate units as required. FM 34-60 gives more information on intelligence. Higher headquarters will provide the battalion with an intelligence report on the expected action of opposing forces. The section sends applicable report portions to all battalion units. It informs higher headquarters of subordinate units' current operational situation. The briefing covers the daily organization, operation, coordination, intelligence, and physical security aspect of the unit. It stresses information that may affect mission performance.

Security measures include RAP and OPSEC. The branch reviews, updates, and coordinates rear area security and area damage control plans for all battalion units. The branch updates ground, antiarmor, and air defense plans based on the threat level. It uses adequate programs for information and signal security. It also carries out physical security and deception programs. It sets up liaison with higher headquarters intelligence. The branch denies essential elements of friendly information to the enemy and confuses the enemy force in its attempt to estimate the course of action the group will take.

Equipment. The equipment required for the security and plans branch is listed in Table 3-5.

Table 3-5. Security and plans branch TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	1
Camouflage screen support system: woodland/desert	3
Camouflage screen system: woodland lt wt radar scat without support system	3
Reeling machine cable hand: RL-39	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	1

Petroleum Operations Branch.

Mission. This branch provides a central dispatching element. It schedules and directs the flow of bulk petroleum through both commercial and military multiproduct pipelines. The branch also coordinates bulk petroleum movement by means other than pipeline.

Responsibilities. The Petroleum Operations Officer (Captain, 92F00) supervises branch operations. He also directs dispatching operations. He conducts all operations that follow good environmental protection and compliance procedures, to minimize environmental impact of the operations, within the scope of the tactical situation.

Personnel. Key personnel include--

Assistant Petroleum Operations Officer (Lieutenant, 92F00). Assists the petroleum officer. Usually supervises the second shift.

Freight Movements Officer (Lieutenant, 88B00). Coordinates bulk petroleum movement by rail, highway, air, or water.

Petroleum Dispatch Sergeant (E7 (2 each), 77F40; E6 (2 each), 77F30). Maintains dispatching operations on a 24-hour basis.

Petroleum Supply Sergeant (E6, 77F30). Monitors and supervises the petroleum inventory control sergeants and specialists and maintains accounts of bulk petroleum received, stored, and dispensed.

Construction Operations Sergeant (E6, 51H30). Coordinates and assists in planning pipeline systems and installation and repair of pipelines, pumping stations, and storage tanks. Inspects pipeline construction for breaks,

rusty pipe, and flat places. Inspects for leaky gaskets, loose connections, or other defects. Evaluates existing fixed facilities to determine capability for military use. Develops petroleum systems maintenance procedures.

Petroleum Inventory Control Sergeant (E5 (2 each), 77F20). Maintains data on current bulk petroleum on-hand inventories. Maintains the total ullage by terminal and type fuel.

Petroleum Inventory Control Specialist (E4 (2 each), 77F10). Assists the inventory control sergeant in maintaining current petroleum supply records.

Movements Specialist (E4, 88N10; E3, 88N10). Assists the freight movements officer in coordinating fuel movement by means other than pipeline.

Technical Engineer Specialist (E4, 51T10). Prepares drawings for pipelines, terminals, and storage facilities.

Administrative Specialist (E4, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

Administrative Clerk (E3, 71L10). Performs administrative functions to include sustaining and operating MARKS, and prepares section correspondence.

Operations. Branch operations include--

- Pumping schedules. Personnel in the branch determine daily requirements and available storage space. They determine the quantity of product authorized to be on hand at the various terminals. Also, they develop consumption graphs for projected consumption and deliveries. FM 10-67-1 gives more information on pumping schedule development.

- Dispatching records and controls. Effective dispatching operations depend on well-kept records. The daily pumping record records daily data related to pumping operations. FM 10-67-1 gives more information on maintaining dispatching records.

- Loading schedules. The section uses dispatching records and controls to develop loading schedules. First, it determines the estimated requirement, availability of transportation and products, and the needs of the supported unit. Then it uses these data to develop loading schedules.

- Policies. The section maintains close coordination with movement programs, directives, and policies of higher commands. This ensures the branch gets the greatest use of movement capability. It also ensures DA policies concerning direct throughput of bulk petroleum products are strictly followed. FMs 10-67 and 55-10 give information on bulk petroleum transportation. FM 100-10 gives more information on rail, highway, air, or water transportation.

- Operation reports. The section receives operation reports from all pump stations and terminals. These reports cover hourly pumping and delivery data. The section uses this information with a consumption graph and progress chart to maintain control of the pipeline system. The section must investigate all discrepancies between fuel pumped and received. FMs 10-67 and 10-67-1 have more information.

- Inventory procedures. The chief dispatcher must account for pipeline fill and forward this information to the accountability officer. FM 10-67 has more information. The monthly bulk petroleum accounting summary notes differences between book balance and physical inventories. The inventorying unit will also provide an explanation of the discrepancy. The unit must also originate a report of survey if losses exceed allowable amounts.

- Pipeline system construction. Section personnel must coordinate with and assist the pipeline engineer. They help the engineer plan pipeline systems and install and repair pipelines, pumping stations, and storage tanks.

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Personnel inspect pipelines for breaks, rust, flat places, leaky gaskets, and loose connections. They should also inspect for other defects. FM 5-482 gives guidance on performing these duties. It discusses route location, layout, and profile of the pipeline system. It also covers pipeline systems inspections. FM 10-67 also gives guidance for planning the pipeline system. Pipeline planners should ensure that environmental and safety risk assessments are completed for every plan. Also, environmental compliance and risk reduction must be considered in the design of pipeline systems.

- Transportation coordination. The transportation cell coordinates with external movements activities. They ensure bulk petroleum movement by means other than pipeline are coordinated and support the overall inland petroleum distribution plan.

Equipment. The equipment prescribed for the petroleum operations branch by TOE 10416 is listed in Table 3-6.

Table 3-6. Petroleum operations branch TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Antenna: OE-254 GRC	1
Battery case: Z-AIJ-E1	4
Cable telephone: WD-1/TT DR-8 1/2-km	1
Cable telephone: WF-16/U	1
Camouflage screen support system: woodland/desert	3
Camouflage screen system: woodland lt wt radar scat without support system	3
Drafting equipment set battalion: charts, sketches, and overlays	1
HF radio set: AN/GRC-193A	1
Installation kit: MK-2462/GRC-193 F/AN/GRC-193A in M882/M1008A1	1
Installation kit: MK-2326/VRC F/AN/VRC-89/91/92 in HMMWV	1
Installation kit: MK-2506/GRC F/AN/GRC-106 or AN/GRC-106A	1
Lightweight digital facsimile: AN/UXC-7	1
Power supply: PP-4763/GRC	1
Power plant electrical trailer-mounted: 5-kw, 60-hz, 2 each, mounted on M103A3	1
Radio set: AN/VRC-89A	1
Reeling machine cable hand: RL-39	2
Speech security equipment digital subscriber voice terminal: TSEC/KY-68	1
Telephone wire with reel: MX-10891/G	3
Telephone digital non-secure voice: TA-1035/U	2
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	2
Wireline adapter: HYX-57/TSEC	4
Combat service support control system	1
Data transfer device: AN/CYZ-10 (C)	1
Data transfer device: AN/CYZ-10	1

Petroleum Laboratory Branch

Mission. This branch analyzes petroleum products received and stored in operating units. It also provides area petroleum laboratory support as directed. This branch operates a mobile petroleum laboratory. The laboratory performs partial analysis testing for petroleum products. FM 10-67-2 describes mobile laboratories and their operational procedures.

Personnel. Key personnel include--

Petroleum Laboratory Officer (Lieutenant, 92F00). Directs the petroleum laboratory in inspecting and testing petroleum products.

Petroleum Laboratory Supervisor (E6, 77L30). Supervises the performance of standard physical and chemical tests on petroleum products. Evaluates test results for compliance with federal and military specifications. Supervises the maintenance of assigned equipment.

Petroleum Laboratory Sergeant (E5, 77L20). Performs standard physical and chemical tests on fuel handled through the battalion pipeline distribution system.

Petroleum Laboratory Specialist (E4, 77L10; E3 (2 each), 77L10). Performs actual testing of petroleum products under the supervision of the petroleum laboratory sergeant.

Operations. The section functions using many of the same procedures as the base laboratory assigned to the petroleum group. However, the laboratory performs only type B1 or below tests.

Equipment. The equipment prescribed for the petroleum laboratory branch by TOE 10416 is listed in Table 3-7.

Table 3-7. Petroleum laboratory branch TOE-prescribed equipment list for TOE 10416

ITEM	QUANTITY
Air conditioner: AC 208-416-v, 3-ph, 60 cycles, 60,000-BTU	1
Cable telephone: WD-1/TT DR-8 1/2-km	1
Camouflage screen support system: woodland/desert	6
Camouflage screen system: woodland lt wt radar scat without support system	6
Dolly trailer converter: 8-ton, 2-wheel, with equipment	1
Facsimile set: AN/UXC-7	1
Generator set diesel engine trailer mounted: 60-kw, 60-hz, PU-805	1
Laboratory petroleum semitrailer mounted	2
Reeling machine cable hand: RL-39	2
Telephone wire with reel: MX-10891/G	1
Testing kit petroleum: aviation fuel contamination	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Telephone set: TA-312/PT	1
Testing kit petroleum	1
Truck cargo: MTV, with equipment	1

Section VI. S4 Section

MISSION AND RESPONSIBILITIES

The primary responsibilities of the S4 officer are to advise the battalion commander on logistics, plan the logistics portions of operations, and supervise the battalion S4 section. The S4 section provides technical assistance on supply and maintenance to the units in the battalion. The S4 officer is responsible for the overall coordination, advice, and assistance the section gives to the battalion and its units. He directs the actions they take on maintaining supply policies and levels. He also directs them in maintaining stockage lists, maintenance policies and inspection, and financial management information. He administers pertinent portions of the unit's environmental stewardship program. Areas of environmental interest for the S4 include the proper accumulation, management, and transportation to a permitted disposal facility of all HM and HW generated in POL, supply room, food service, and maintenance operations; disposal of solid and liquid wastes associated with food service operations; and environmentally safe maintenance practices. He should ensure all battalion supply functions are automated using the ULLS S4.

PERSONNEL

Effective operation of the section requires identifying key personnel and understanding their primary duties and responsibilities. Key personnel in the S4 section include--

Unit Maintenance Technician (Warrant Officer Two, 915A0). Provides technical advice and assistance on automotive equipment maintenance to the petroleum pipeline and terminal operating companies. Sets up an environmental stewardship program for motorpool operations. Reviews maintenance practices to ensure they are done in an environmental safe manner.

Engineer Equipment Repair Technician (Warrant Officer Two, 919A0). Provides technical advice and assistance on engineer equipment maintenance to all assigned and attached units.

Property Accounting Technician (Warrant Officer Two, 920A0). Manages the units' property books. Provides the petroleum pipeline and terminal operating companies with technical assistance on organizational supply matters.

Senior Maintenance Supervisor (E8, 63B50). Assists the companies in obtaining the necessary equipment and supplies needed by their maintenance sections. Ensures maintenance operations are conducted in an environmentally safe manner. Implements the units environmental stewardship program in maintenance operations. Coordinates the maintenance practices and procedures of the companies.

Supply Sergeant (E7, 92Y40). Supervises the battalion's internal supply functions. Plans, coordinates, and inspects unit and organizational supply operations. Manages hazardous material supply items IAW locally set up procedures and regulations. Supervises the preparation and maintenance of supply records of subordinate units. Assists the PBO.

Assistant Supply Sergeant (E5, 92Y20). Assists the battalion supply sergeant.

Supply Specialist (E4, 92Y10; E3, 92Y10). Requests, receives, and processes the necessary supplies and equipment for subordinate units.

Administrative Specialist (E4, 71L10). Performs all administrative functions to include setting up and operating MARKS, and prepares section correspondence.

MAINTENANCE OPERATIONS

The section's primary function is to provide guidance and assistance on internal logistics for the unit. To do this, the section addresses these factors in the following paragraphs.

Procedures

The S4 section personnel should conduct staff inspections of maintenance operations IAW DA Pamphlet 738-750. During these inspections, they should review files to determine the number, type, and frequency of repairs and the time involved. The section sets up and monitors equipment service schedules. It also consolidates and forwards various equipment and maintenance status reports. Section personnel should also inspect SOPs and procedures to ensure they comply with environmental protection regulations. See Appendix A. DA Pamphlet 738-750 gives more information on these functions.

Material Readiness Assistance Visits

S4 section personnel make liaison visits to subordinate units of the battalion and advise them on ways to improve their readiness. They contact direct support facilities to place command emphasis on demands and incoming

requisitions. They also place emphasis on supply status reports, as well as requirements for current and planned operations. AR 710-2, DA Pamphlet 710-2-1, and DA Pamphlet 738-750 are references for these actions.

Material Readiness Reports

The section processes DA Forms 2406 for the battalion. These reports provide information on the condition of equipment in the hands of using organizations. DA Pamphlet 738-750 gives more information.

Storage of Supplies and Equipment

Supplies and equipment should be managed and cared for according to the standards outlined in the current Unit Supply Update. Receipt, storage, and issue of environmentally hazardous materials should comply with all pertinent national, state, local and host nation environmental regulations. See Appendix A. The S4 section makes periodic inspections of unit supply storage procedures.

Supply Procedures

The battalion units send all authorization supply documents to the section. DA Pamphlet 710-2-1 describes these documents' uses. Review them to see that--

- All equipment authorized is on hand or on request.
- Unit supply requests and priority designator procedures are not being abused.
- Requested quantities for environmentally hazardous materials are the minimum needed to do the mission.
- Prescribed loads of ammunition are managed IAW local policy.
- Individuals have clothing and equipment as authorized by CTA 50-900.
- Arms, ammunition, and explosives are maintained according to ARs 190-11 and 190-40 and local policy.
- Excess property accountability and disposition.

Receipts and Records

The PBO maintains automated organizational property books and all other property records. References that should be available are ARs 190-11, 220-1, 700-84, 703-1, 710-2, 710-3, 735-5, 735-5; DA Pamphlets 600-8 and 710-2-1; FMs 10-14 and 10-14-2; SB 700-20; and the AMDF. The property book should be maintained by checking:

- All equipment authorized by MTOE. It should be on hand or on order.
- Shortage annexes. Prepare for all missing components of end items. Personnel are held responsible for sets, kits, and outfits.
- Components. Components will be checked for serviceability and listed on hand receipt annexes.
- Temporary hand receipts. When used, hand and subhand receipts are adjusted every six months. The six-month period starts on the date entered on the oldest temporary hand receipt. Ensure that change documents are being used for turn-in and issues between the six-month hand-receipt reconciliation periods.
- On-hand physical inventories. Ensure monthly sensitive items and 10 percent inventories are conducted. The PBO must maintain a copy of these inventories.

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- Documents file for transactions for nonexpendable items. It should be maintained as a supporting document to the property book.

Budgets

The S4 officer should evaluate and control costs in the battalion. He plans supply and equipment needs for the year. The S4 recommends priorities for spending the money allocated quarterly by higher headquarters. He must also set up some system of monitoring funds spent by the battalion

Nonexpendable Supplies

The S-4 section requests, receives and issues nonexpendable supplies from the unit providing direct supply support. These actions are recorded on DA Form 1064.

Requests for supplies. Ensure all items requested are authorized to customers. Record all requests in the document register, and give it a document number. Send all requests to the SSA. Use DA Pamphlet 710-2-1 for more detailed information.

Issue of supplies and equipment. When issuing items to a supported unit--

- Use DA Form 2062 to record the issue of property book items.
- Use DA Form 3161 as a temporary hand receipt document for issue and turn-in transactions. Stamp document, "temporary hand receipt." Temporary hand receipts are posted to the DA Form 2062 at least once every six months.
- List in the property book all items with serial numbers as outlined in AR 710-2.
- Issue items on the DA Form 2062 if they are defined in AR 710-2 and in the Army Log as durable items.

Turn-ins. Subordinate units turn in unserviceable items and excess serviceable items to the S4 section. Prepare a temporary hand receipt for the turn-in. Give it to the hand receipt holder. Prepare a request for turn-in on all turn-in items. Enter the transactions on the document register. Send the turn-in documents to your supply support activity. Turn in the equipment when directed to do so.

Lost, damaged, or destroyed property. When property has been lost, damaged, or destroyed by a supported unit, your section is notified. The responsible unit prepares a DA Form 362 and other documents required by AR 735-11.

Requests for ammunition. The S4 section processes DA Forms 581 for basic load items. They review and verify each request, using the weapons density, controlled supply rate, and consumption projections for each unit. Requests are processed IAW locally established policy.

EQUIPMENT

TOE 10416 prescribes the equipment for the S4 section. See Table 3-8 for a list of this equipment.

Table 3-8. S4 section TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Cable telephone: WD-1/TT DR-8 1/2-km	3
Camouflage screen support system: woodland/desert	4
Camouflage screen system: woodland lt wt radar scat without support system	4
Reeling machine cable hand: RL-39	2
Telephone wire with reel: MX-10891/G	1
Telephone digital nonsecure voice: TA-1035/U	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1

Telephone set: TA-312/PT	2
Truck cargo: 2 1/2-ton, 6x6, with equipment	1

Section VII. Company Headquarters

MISSION AND RESPONSIBILITIES

The company headquarters provides command, control, discipline, training, personnel administration functions, organizational maintenance functions and supply functions for the soldiers in the company. It also coordinates with higher headquarters and staff sections to do given missions.

PERSONNEL

Effective operation of the headquarters requires identifying key personnel and understanding their duties and responsibilities. Key personnel include those listed below.

Company Commander (Captain, 92F). Is responsible for the leadership, welfare, discipline, and training of all the soldiers in the company. Sets priorities and coordinates present and future missions of the company. Directs and supervises all technical operations and support activities that impact the headquarters operations. Ensures all required reports and data are prepared and transmitted to staff elements as required. Conducts safety and environmental risk assessments for each operation.

First Sergeant (E8, 77F5M). Assists the commander in supervision of company administration functions. Prepares roster, schedules, reports, correspondence, orders, and other materials. Coordinates the activities of the company. Ensure the company SOP includes instructions for--

- Submitting operating reports.
- Defending the area.
- Requesting supplies.
- Preparing personnel actions.
- Reporting intelligence information.
- Submitting material readiness and unit status reports.
- Delivery of mail.
- Submitting disciplinary actions.
- Conducting NBC operations.
- Ensuring Safety/Environmental Protection.
- Adhering to Unit Recycling.

Supply Sergeant (E5, 92Y20). Requisitions, receives, stores, accounts for, and issues all classes of supply (except Class IX) for the company. Manages hazardous material supply items IAW locally established procedures and regulations. Ensures that environmental protection program is adequate and sufficient through coordination with the local environmental officer and the chain of command.

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Decontamination Specialist (E4, 54B10). Advises the commander on unit NBC training and operations. Supervises the training of unit NBC teams. Maintains organic NBC equipment and PLL. Manages hazardous materials IAW locally established procedures and regulations.

Personnel Administrative Specialist (E4, 75B10). Performs all administrative functions for the company. Inputs personnel actions using SIDPERS. Prepares--

- Strength reports and casualty reports.
- Recommendations for awards and decorations.
- Leave requests and pay documents.
- Recommendations for promotions.
- Rosters.
- Unit mail records.
- Correspondence

Light-Wheeled-Vehicle Mechanic (E4, 63B10). Augments the supporting unit assigned to provide organizational maintenance. Ensures maintenance procedures comply with locally established environmental protection regulations and procedures.

Armorer/Supply Specialist (E4, 92Y10). Maintains the unit small arms and assists the supply sergeant. Manages hazardous materials IAW locally established policies and regulations.

Cook (E3, 92G10). Cooks and serves for unit personnel. Maintains and sanitizes assigned equipment. Augments supporting unit's food service section.

TACTICAL AND ADMINISTRATIVE OPERATIONS

Key areas of interest while operating in a tactical environment are given below. Also highlights of company administration are given in both the tactical and garrison environment. It is important to note the company is not self sufficient in food service and unit maintenance and will need outside support to meet mission requirements for these areas.

Command and Control

Unit defense. The battalion S2/S3 officer sets up the overall defensive plans for the group and its subordinate units. The company commander then develops a company defense plan within these guidelines. FM 21-75 gives details on how to set up the company defense. Key points are--

- Make sure the unit defense includes observation posts and interlocking fields of fire. It should also include adequate communications, minefields, and antiarmor barriers.
- Hold rehearsals to make sure that all elements of the plan are coordinated.
- Check range cards, sector sketches, and defensive fire plans.
- Assign a final protective line and principal direction of fire for each machine gun.
- Submit to the battalion commander reports of intention to lay minefields. Also report to him the start and completion of the laying of the minefields. FM 20-32 gives more information.
- Check to see that artillery and mortar final protective fires are determined. Make sure they have been coordinated with the designated fire support unit.

Camouflage. Camouflage is one of the most critical means of defense for combat service support units. Camouflage should protect the unit from detection from the air and the ground. The unit should use all available natural and man-made devices to camouflage its site by using approved techniques. The company leadership should constantly evaluate camouflage for its effectiveness. FM 5-20 gives helpful information on camouflage techniques.

Field sanitation. A field sanitation team performs the sanitation duties for the company. An NCO from within the headquarters monitors the work of the team. He also inspects units to make sure they are following all sanitary procedures. He ensures--

- Steps are taken to control insects. Disease-bearing animals and other threats to sanitation should also be controlled.
- Field sanitation standards comply with the regulations and policies in the field sanitation SOP.
- The field sanitation team is properly trained and coordinates with outside agencies for help when needed.
- The company has the prescribed amount of field sanitation kits on hand and/or the appropriate materials for field sanitation functions.

Unit-level maintenance. One light-wheeled vehicle mechanic is assigned to the company. He augments the unit assigned to provide organizational maintenance. His key duties include--

- Provide limited organizational maintenance support to the company.
- Ensure proper use of tools and ensure proper test equipment maintenance.
- Review TAMMS forms for completeness and accuracy.
- Assist the supporting unit's maintenance personnel with the maintenance program to include organizational-level maintenance, drivers' training program, oil analysis program, and other programs as directed.
- Ensure unit maintenance follows set up environmental protection guidelines.

Medical support. The company commander is responsible for coordinating proper medical support. FM 8-10 gives medical support guidance. Key points in this area are--

- Proper medical coordination is made with higher headquarters.
- Policies and procedures are up to date.
- Personnel receive medical aid during any unit operation.
- Emergency aid and unscheduled medical support are available during day-to-day operations. FM 21-11 gives more information.
- The unit has the appropriate number of trained combat lifesavers. All required Class VIII equipment is available to qualified unit personnel.

Response to ground attacks. Response to ground attack should be thoroughly practiced as a battle drill. The severity of the ground attack should be assessed immediately and reported to higher headquarters. Indirect fires should be used as appropriate. The company should have (as a minimum) a squad-sized QRF armed with an automatic weapon. The QRF will be under direct control of the company headquarters section at all times. The

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QRF will respond immediately to suppress an attack on any portion of the perimeter. The company should be able to defeat a level I attack without further reinforcement. Higher levels of attack will require outside support and possible displacement of the company to avoid and potentially defeat the enemy force.

Physical security. Access to restricted areas should be strictly controlled. Dismount points must be set up and manned. Observation posts are positioned around the area as appropriate. Personnel must be assigned camouflaged positions along the perimeter. Weapons, ammunition, and explosives must be physically secured. FM 19-30 and AR 190-11 are the primary references for physical security.

Captured enemy personnel and material. The company must process any captured enemy personnel and equipment correctly. Key points in handling enemy personnel include--

- Disarm and search prisoners for concealed weapons and for documents of intelligence value.
- Segregate the prisoners by status, rank, and sex.
- Give wounded personnel lifesaving and life-sustaining medical treatment. Evacuate them to the nearest medical facility as soon as possible.
- Keep them silent.
- Tag, safeguard, and move all equipment and documents to the rear or to the battalion headquarters. FM 34-1 gives more information.
- Prepare tags to give the date and time of capture, the capturing unit, and the circumstances surrounding the capture. Tags should also state if documents or equipment were found on the prisoner. (Under no circumstances may documents and equipment be altered or kept as souvenirs.) Make sure operations are followed within the limits set forth in FMs 19-40 and 27-10, Chapter 3.
- Give prisoners no comfort items. They retain safety items such as their helmet and protective mask.
- Treat all prisoners according to Geneva Convention provisions. FM 27-10 gives guidance. Transfer prisoners to the nearest military police activity as soon as possible.

Administrative and Logistical Support

SIDPERS input. The personnel administrative specialist inputs all personnel administrative data using SIDPERS transactions. He provides data to the group headquarters S1 section by secure means. DA Pamphlet 600-8-1 gives guidance. The information to be gathered includes--

- Casualty reports.
- Replacement personnel requests.
- Promotion recommendations.
- Disciplinary actions.
- Awards requests.
- Other administrative data required for unit support.

Mortuary affairs. When soldiers in the unit are killed in action, it is the unit's responsibility to take the remains to the nearest mortuary affair teams providing area support. If remains cannot be recovered due to tactical or logistical limitations, the unit must report their location to higher headquarters. If the remains are not recovered, the unit personnel specialist will prepare a report on where the remains are located and why they have not been recovered. JTTP 4-06, FM 10-297, and STP 10-57F14-SM-TG give more guidance.

Food service support. The company requires food service support augmentation for its one assigned cook.

Unit supply. FM 10-14 and the most current unit supply update give detailed guidance for unit supply. In general, the supply sergeant requests, accounts for, stores, issues, and turns-in (excess and unserviceable) all classes of supply except Class IX. The supply sergeant also maintains property records. Under the guidance of the battalion S4 and the PBO, he--

- Automates all supply room functions using the ULLS-S4 module
- Arranges supplies so the unit can provide fast and efficient support.
- Manages supply items that are hazardous materials IAW locally established environmental procedures and regulations.
- Checks replenishment supplies and verifies them against the suspense file.
- Issues supplies promptly.
- Protects supplies from adverse weather, pilferage, and sabotage.
- Issues by subhand receipt procedures all property on the commander's hand receipt.
- Prepares shortage annexes for all missing components of end items issued on subhand receipts.
- Handles supplies IAW DA Pamphlet 710-2-1 and ULLS-S4 procedures.
- Maintains unit's combat basic load of Class I, II, and IV expendable supplies.
- Supervises the unit armorer and provides the armorer with assistance as needed.

Requests for and receipt of ammunition. Company personnel will manage the unit's Class V account. In combat, Class V is provided on a push basis. Emergency requests for ammunition are sent through the group S4 section. In garrison, ammunition must be requested IAW locally established procedures. Key points for requesting and handling ammunition are--

- Prepare copies of DA Form 581 according to DA Pamphlet 710-2-1.
- Store ammunition according to quantity, class, and compatibility IAW locally established environmental procedures and regulations. Maintain required distance between cells or areas.
- Check ammunition to make sure it is not damaged and it is marked by lot number, type, and quantity.
- Account for ammunition when received, when stored, and when issued.
- Use dunnage according to TM 9-1300-206. Manage and dispose of used dunnage IAW with locally established environmental policies and procedures.

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- Observe established environmental and safety precautions at all times when handling ammunition and associated waste products.

EQUIPMENT

The equipment prescribed for the company headquarters by TOE 10416 is listed in Table 3-9.

Table 3-9. Company headquarters TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Alarm chemical agent automatic: portable manpack	2
Binocular: modular construction, military scale, reticle, 7x50-mm, with equipment	2
Monitor chemical agent	2
Battery case: Z-AIJ-E1	1
Cable telephone: WD-1/TT DR-8 1/2-km	6
Camouflage screen support system: woodland/desert	7
Camouflage screen system: woodland lt wt radar scat without support system	7
Decontaminating apparatus: power-driven, lightweight	2
Generator set: diesel engine-driven, skid-mounted, 15-kw, 50/60-hz	1
Installation kit: MK-2325/VRC F/AN/VRC-87/88/90 in HMMWV	1
Launcher grenade 40-mm: single-shot, rifle-mounted, detachable, with equipment	6
Light set general illumination: 25-outlet (Army)	3
Machine gun 7.62-mm: light flexible	2
Mask chemical biological: M40	67
Mount tripod machine gun: 7.62-mm	2
Pump centrifugal: gas-driven, frame-mounted, 1 1/2-inch, 65-GPM, 50-ft hd	2
Pistol 9-mm automatic: M9	5
Radiac set: AN/VDR-2	1
Radiac set: AN/PDR-75	1
Radiac meter: IM-174/PD	1
Radio set: AN/VRC-88	2
Reeling machine cable hand: RL-39	4
Radio set: AN/VRC-88A	1
Rifle 5.56-mm: M16A1	61
Telephone wire with reel: MX-10891/G	1
Telephone digital nonsecure voice: TA-1035/U	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	3
Tank liquid storage metal: petroleum products, skid-mounted, 600-gallon	1
Telephone set: TA-312/PT	4
Tool kit general mechanics: automotive	1
Tool kit carpenters: engineer squad with chest	1
Tool kit small arms repairman: ordnance	1
Wireline adapter: HYG-57/TSEC	2
Trailer cargo: 3/4-ton, 2-wheel, with equipment	2
Watch wrist: nonmaintainable	7
Boresighting equipment weapon: small arms XM30	1
Computer set general: AN/GYK-33B	1
Data transfer device: AN/CYZ10	1
Key processor KP TSEC/KOK-22	1
Pocket radiac	1

Section VIII. Communications Section

MISSION

The communications section coordinates installation, operations, and management of information systems in support of the battalion headquarters communications facilities. The section provides--

- FM radio (SINGGARS).
- AM HF radio.
- Mobile subscriber user equipment.
- Message center service.
- Computer installation and configuration
- SOI production with RBECS
- Field wire and telephone service
- NCS for AM and FM radio nets.

RESPONSIBILITIES

The signal officer is responsible for all battalion information systems (both tactical communication and commercial computer systems). He supervises the communications section. He also coordinates with supporting signal units for entry into the common user systems and preparation of the battalion SOI.

PERSONNEL

Effective operation of the section requires identifying key personnel and understanding their primary duties and responsibilities. Key personnel include--

Section Chief (E7, 31U40). The senior enlisted advisor to the section officer. Primary responsibility is tactical communication liaison with the battalion subordinate company elements. Prepares the battalion SOI using RBECS. Supervises all enlisted soldiers assigned to the communication branch.

Signal Information Service Specialist (E4, 31U10). Installs and maintains battalion MSE, SINGGARS, and AM HF digital and voice equipment. Responsible for battalion computer system installation and configuration.

OPERATIONS

The section is responsible for the information system integration plan; SINGGARS; AM HF radio; MSE interface equipment; and message center. It is also responsible for computer installation and configuration; RBECS-SOI construction; field wire and switchboard; and the radio NCS.

SINGGARS

The unit is equipped with the AN/VRC-90 SINGGARS FM radios. SINGGARS is a new family of VHF-FM radios that replace the old FM AN/VRC-12 series of radios. These radios provide the battalion with a tactical secure FM radio net for internal command and control and external base cluster defense coordination. These radios feature simple, quick operation using a 16-element keypad for push-button tuning. They have short-long range operation for voice or digital data communications. The planning range is 8 to 35 kilometers. They operate in a jam-resistant, frequency-hopping mode that can be changed as needed. The NCS uses the AN/VRC-92 radio that is a dual long-range system that can also operate as a retrans system as mission dictates.

AM High-Frequency Radio

The battalion will employ the AN/GRC-193A HF radio. The AN/GRC-193 is a rugged, tactical, vehicular/base station HF radio set. The set's high power (100-400 watts) makes it capable of long-range communications needed to link all pump stations in the AM HF pipeline net that may span in excess of 300 miles. (The AN/GRC-213 low power AM HF radio is unacceptable for use with the omnidirectional coverage NVIS antenna, which requires maximum power output.) The AN/GRC-193 radio set can be mounted in a wheeled vehicle or installed in a fixed location, such as a building or tent. When installed in a fixed location, the radio requires a power supply providing 24 to 32 volts DC (such as the PP-1451/G). To use this system in the radio teletype mode, the KG-84 and computer terminal, AN/UGC-144, is needed. Secure voice requires a KY-68. Both secure and radio teletype operation is mandatory for pump station operation.

Mobile Subscriber Interface Equipment

The supporting signal unit provides connectivity to the battalion that allows it to interface with the theater digital or corps mobile subscriber network. Users access MSE network via fixed subscriber terminals or mobile subscriber terminals. The fixed subscriber terminals are hard wired to a SEN through a junction box, J-1077. The three fixed instruments are the DNVT, TA-1035; the DSVT, KY-68; and the communication terminal, AN/UGC-144. The MSRT is the AN/VRC-97. The MSRT, which consists of a very high-frequency radio and a digital secure voice terminal (KY-68), is in a vehicle-mounted assembly. It interfaces with the MSE system through a RAU. As long as the radio unit has line-of-sight contact with the RAU, it has connection in the MSE area system. The operational planning range is 15 kilometers from any RAU.

Message Center

Message center operations orient on the AN/UGC-144 computer terminal that enables access into the DMS, DDN, and MSE network. Both the S4 and POL Operations sections are authorized these terminals. These terminals are user-owned and user-operated message terminals. Through menu-driven screens and passwords, it allows composition, transmission, and formal record traffic receipt. Each terminal has a KY-68 DSVT that provides autodial encryption capability. Section personnel, with the assistance of the communication section, process incoming and outgoing messages according to assigned priorities. They will observe the following precedence, time frames, and procedures IAW FM 24-17 and AR 25-11:

- Flash--less than 10 minutes
- Immediate--within 30 minutes
- Priority-- within 2 hours
- Routine--within 6 hours

Computer Installation and Configuration

The communications section is responsible for all battalion information systems to include computers and peripheral devices. Responsibilities include--

- Ensuring all computer systems are accredited for the appropriate classification and networking level.
- Properly configuring all computer communication devices (modems).
- Installing, maintaining, and providing operational guidance on battalion software.

RBECS/SOI Construction

The communications section creates and maintains SOI databases tailored to specific missions. Using RBECS, the section is able to generate processing, displaying, editing, printing, storing and transferring SOI information. RBECS also processes the frequency hopping data, (TSK, HOPSET, NET IDs), for the SINCGARS and other radio

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systems. RBECS can selectively compartmentalize information based on need and transfer the data to ANCD and ECCM fill devices (MX-10579 and MX 18290). RBECS requires formal training.

Local Field Wire and Switchboard

The communications section will devise and use a wire net plan. The plan identifies each user telephone connected to the switchboard (SB-3614) or MSE/TRI-TAC switch. The plan will show where the wire is buried or installed overhead. Also, the wire team will designate a wire team to coordinate telephone installation with supported units and identify manpower and equipment requirements. Users are responsible for wire installation and connection to the switchboard. Section personnel--

- Test wire before installation.
- Connect and lay the wire according to the wire net plan.
- Lay the lines by the shortest distance allowed by terrain.
- Secure lines at their start point and at any point where they change direction or run into construction.
- Tag wire according to FM 24-20 and the SOI.
- Make maximum use of terrain and natural vegetation to conceal wires.
- Make sure that construction techniques meet the requirements of FM 24-20.
- Check all splices to make sure they are taped and correct.
- Make preinstallation checks of the switchboard.
- Install and ground the switchboard in an area protected from moisture.
- Attach telephone lines and trunk connections at the switchboard.
- Label the switchboard according to the telephone directory.
- Keep wire splices clear of standing water and maintain a correct amount of slack in the wire.
- Check the wire periodically to make sure no one has tampered with it.
- Recover field wire without damaging it. See FM 24-20.
- Wind wire evenly on reels with enough slack at the start to allow easy testing and servicing.

Radio Communications Net

There are nine SINCGARS radios dispersed throughout the company. Section personnel set up the radio communications net for these radios. When performing their duties, they should--

- Ground the equipment.
- Check at first light (when the station is set up during darkness) to make sure it is concealed. If it is not, conceal it immediately.
- Make initial entry into the designated net within the time frame set by the commander.

- Use operating signals, prosigns, and authentication when required by the NCS.
- Process messages, requiring coding or decoding, promptly and without error according to FM 24-18.
- Adhere to all COMSEC procedures.
- Follow the guides in FM 21-2 when setting up the radio net.

NCS

The battalion NCS operates according to the procedures in FM 24-18. Section personnel--

- Open and close the net.
- Control transmission.
- Authenticate and clear traffic within the net.
- Direct the net.
- Correct errors in operating procedures.
- Give or deny permission for stations to enter or leave the net.
- Impose or lift listening silence.
 - Maintain net discipline.

EQUIPMENT

TOE 10416 prescribes the equipment for the communications section. See Table 3-10 for a list of this equipment.

Table 3-10. Communications sections TOE-prescribed equipment list for TOE 10416.

ITEM	QUANTITY
Axle cable reel: RL-27	2
Cable telephone: WD-1/TT DR-8 1/2-km	1
Cable telephone: WD-1/TT RL-159 2-km	2
Camouflage screen support system: woodland/desert	1
Camouflage screen system: woodland lt wt radar scat without support system	1
Power supply: PP-4763/GRC	1
Power plant electrical trailer-mounted: 5-kw, 60-hz, 2 each, mounted on M103A3, AN/MJQ-16	1
Reeling machine cable hand: RL-31	1
Reeling machine cable hand: RL-39	1
Tone signaling adapter: TA-977/PT	1
Truck utility: cargo/troop carrier, 1 1/4-ton, 4x4, with equipment (HMMWV)	1
Splicing kit telephone cable: MK-356/G	1
Switchboard telephone manual: SB-22/PT	2
Telephone set: TA-312/PT	2