

COMBAT SUPPORT

Combat support for cavalry units is provided by artillery and mortars, USAF tactical fighter-bombers, and engineer, signal, military intelligence, Army aviation, military police, psychological warfare, and civil affairs units. The size of the cavalry unit, its mission, and distance it operates from the main body generally determines what additional combat support it receives. All elements from regiment through platoon and platoon team are directly concerned in some manner with combat support.

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Missions assigned a combat support unit are normally described in three ways:

- *Direct Support.* The supporting unit establishes contact with the supported unit; and, in the case of field artillery, sends forward observers to supported troop-size units. The supporting unit gives the supported unit priority of efforts. The supporting unit responds directly to supported unit requests.
- *General Support.* The supporting unit supports the supported forces as a whole, responding to requests for support according to priorities established by the force commander.

- *Attached.* The attached unit exclusively supports the unit to which it is attached, as if it were an organic unit. Accordingly, an attached unit must get logistics support the same as an organic unit.

A regiment or squadron has considerable freedom concerning organization of attached combat support units for combat, but very little freedom concerning combat support units in direct or general support. A troop or company seldom has anything to do with organizing combat support elements other than those organic for combat. They may decide to use their surveillance radar section as an entity or by teams. An armored cavalry troop also has the option of consolidating mortars or leaving them with the platoons.

FIRE SUPPORT

MORTARS

★ Under the new TOE, mortars are consolidated at troop level and are only attached to the platoons when the troop zone is too wide for coverage by the consolidated mortars.

The mortars should be in covered and concealed positions well forward to provide support to the entire troop. The section leader in conjunction with the troop commander selects positions from where the mortars can best support the troop's scheme of maneuver. Fire can be adjusted by any member of a platoon and everyone should be trained to do so.

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FIELD ARTILLERY

The armored cavalry regiment may receive artillery support from division or corps artillery. Field artillery units may be attached to the regiment when control by the parent headquarters is difficult. When artillery is attached or placed in support of regimental squadrons, the squadron field artillery battery may be placed under the operational control of the supporting artillery unit. The supporting artillery commander then replaces the organic field artillery battery commander as the squadron fire support coordinator.

Divisional cavalry squadrons normally receive artillery support by a modification of the mission given a field artillery (FA) unit. For example, the FA battalion closest to the cavalry squadron may be assigned a mission of general support, modified to provide the squadron a high priority in answering calls for fire. If more responsive fires are required, a DS field artillery unit may have second priority of fires to the squadron.

The commander uses field artillery fire to destroy or suppress enemy elements which can fire on the unit. HE ammunition is used against ATGM teams, infantry, and other relatively exposed elements. White phosphorus or smoke ammunition is used to obscure the enemy view of cavalry elements. Field artillery fire can also be used to destroy or

make ineffective personnel, vehicles, and equipment in command control parties or facilities, logistics areas, and assembly areas. Using improved conventional munitions (ICM), artillery fire is much more lethal against these targets than mortar fires.

Although a field artillery forward observer may be provided at troop level, field artillery fires are normally adjusted by scouts and squad leaders within cavalry platoons.

As a precautionary measure, cavalry commanders/leaders may call for suppressive fires on terrain which may conceal the enemy. These fires should be used judiciously in order to conserve ammunition for better targets, to lessen the detection of firing batteries and to preserve tactical secrecy.

CLOSE AIR SUPPORT (CAS)

The USAF tactical fighter-bomber is an excellent weapon system with which to attack a well-emplaced enemy. It can quickly destroy hard point targets, including tanks. CAS should be integrated into a cavalry unit's scheme of operation and used simultaneously with other fire support means to destroy massed targets. Tactical air strikes are usually controlled by USAF forward air controllers, who may be airborne or on the ground. Cavalry personnel control an air strike only when a USAF controller is not available. The S3 air and fire support coordinator (FSCOORD) monitor and acknowledge CAS requests and base recommendations to approve or disapprove requests on the situation and activities, which may be unknown to

the requester. The air liaison officer (ALO), a member of the TACP, advises on aircraft capabilities, limitations, and use, and coordinates approved close air support missions. If the request is disapproved, the requesting unit is notified and told why.

Types of Close Air Support Missions.

- *Immediate* mission requests are those made for CAS that is responsive to specific tactical situations and targets which develop during the course of battle. Mission details are usually coordinated while aircraft are airborne.

- *Planned* mission requests are submitted for CAS that is responsive to anticipated targets in planned operations. Planned missions permit more detailed coordination, more effective matching of ordnance to target, and more economical use of aircraft than immediate missions.

Considerations in Requesting Close Air Support. Requests for *immediate* CAS are normally initiated below squadron level through the chain of command. Requests for *planned* CAS are normally initiated at squadron or regimental level. In either case, most of the coordination is done by squadron or regiment. Because of safety considerations and detailed knowledge of the tactical situation, the troop/company commander or platoon leader most concerned with CAS has final approval on ordnance delivery. Considerations in processing CAS requests are:

- *Time.* Response time of tactical aircraft, if not on station, may be longer than field artillery or naval gunfire. Flying time to the target and time to load special ordnance, if required, should be considered. Under certain conditions, high-performance aircraft are maintained on air alert and are as responsive as ground delivery means. Except for fixed fortifications and defensive works, targets acquired by cavalry units seldom stay concentrated for significant periods of time. Target stay time is compared with response times of the available attack means. If stay time is too short for attack by the most effective means, the most responsive means are used.

- *Target Weapon Characteristics.* Weapons selection is based on lethality and limitations of air, field artillery, and other available fire support means. The attack system is determined by the size and nature of the target, desired ordnance, location of friendly troops, accuracy of target location, and adequacy of control.

- *Observation.* If a ground observer is unable to determine the precise location of a target or can't maintain observation of a moving target, he uses close air support.

- *Ammunition Availability and Re-supply.* Use of CAS against hard targets conserves armor defeating ammunition carried by cavalry units.

- *Danger to Friendly Troops.* The degree of danger acceptable without restricting other supporting arms must be determined. A FSCOORD must know the disposition of friendly troops and the tactical deployment of a regiment or squadron and must ensure airspace coordination has been accomplished with the S3 air. A regimental or squadron commander has specific responsibilities related to the safety of CAS aircraft. Restrictive fire plans, shifting of fires, and air defense suppression programs may be required. CAS pilots must be warned of inherent dangers in the mission. This can be done by the FAC, FSCOORD, unit commander, division airspace management element (at division level), or in the initial request.

NAVAL GUNFIRE SUPPORT

Control and use of naval gunfire is by special staff or liaison representatives, liaison teams, and shore fire control parties (SFCP) organic to air naval gunfire liaison companies (ANGLICO) of the fleet marine force. These organizations are furnished to a regiment or squadron to provide expertise and communications for naval gunfire support. The naval gunfire liaison officer serves as a member of a regiment, a regimental armored cavalry squadron support element/fire support coordination facility, or a fire support element in a divisional armored or air

cavalry squadron. Direct support naval gunfire can be provided as soon as communications are established between assigned direct support ships and shore fire control parties or other observers. General support, applied to naval gunfire, refers to fire delivered by ships not assigned to the direct support of any specific echelon of the Army force. Requests by subordinate Army force echelons for general support are made through the chain of command to the level controlling general support naval gunfire.

FIRE SUPPORT PLANNING

Fire support planning begins with platoon leaders, FO's, and troop commanders. The troop commander must ensure that his tactical scheme of maneuver and fire support plan are worked out together so they complement one another.

Two types of targets common to cavalry operations are *planned* targets and *unplanned* targets:

- *Planned* targets are those on which fire is prearranged. They may be scheduled or on-call. They should be sighted on confirmed, suspected, or likely enemy locations and prominent terrain to serve as reference points for shifting fires onto targets of opportunity that appear in their vicinity.
- *Unplanned* targets are targets of opportunity which are generally fleeting in nature and should be attacked as soon as possible. Frequently, cavalry is concerned with unplanned targets on which fire can be adjusted by reference to a planned concentration.

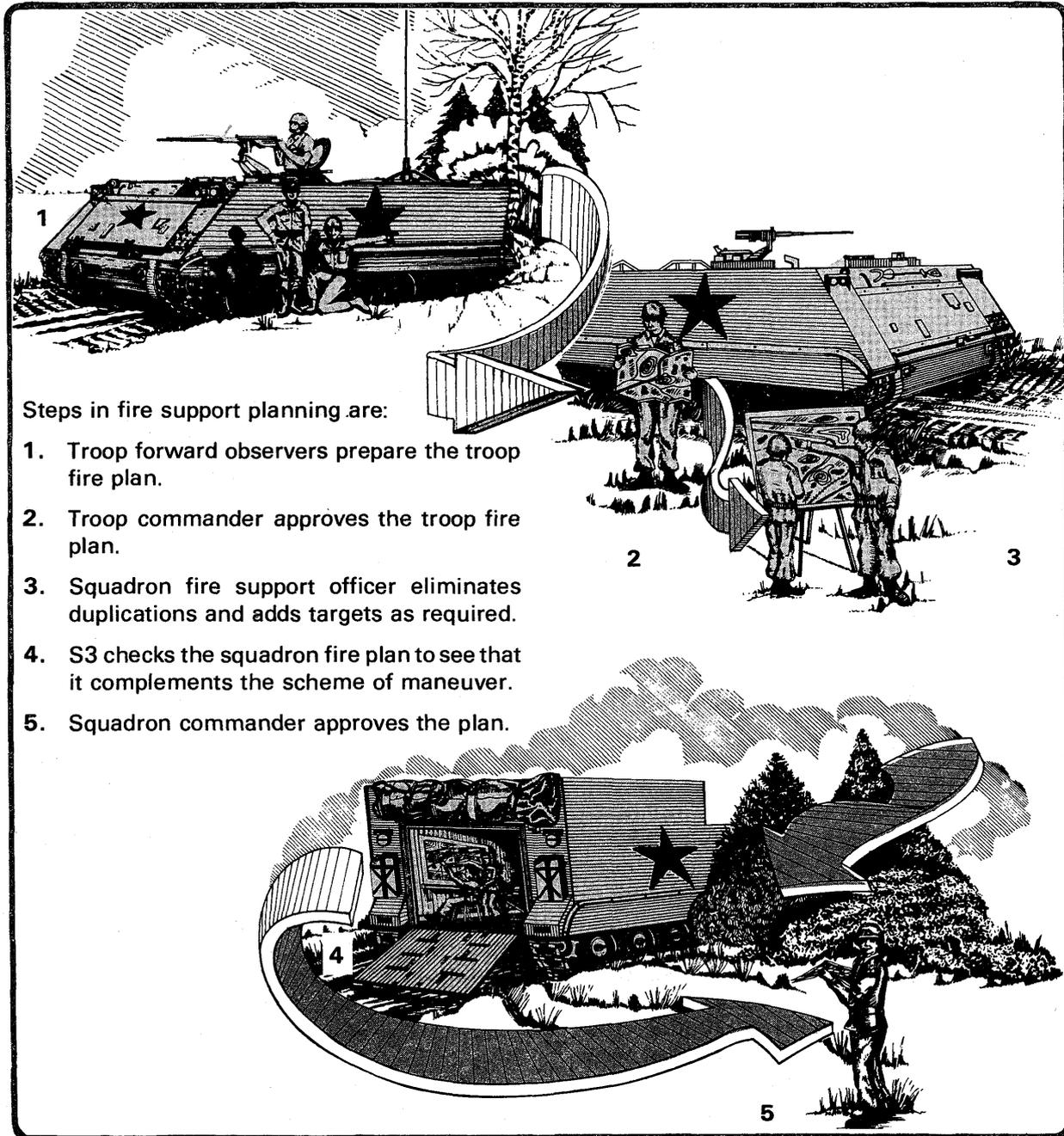
After the troop commander has approved his fire support plan, the field artillery FO assigns each target a letter-number designation from a block of numbers given him by the squadron fire support element. He then forwards a list of targets to the squadron fire support officer (FASO). If the troop does not have an FO, the troop commander assigns the letter-number designation.

The squadron fire support officer (FSO), working with the squadron S3, S3 air, and ALO, prepares the squadron fire support plan. He consolidates target lists from troops, eliminates duplications, adds targets of interest to the squadron commander and additional targets to fill gaps in the plan, and integrates tactical air support into the plan.

The squadron commander reviews the plan to ensure that it complements his squadron scheme of maneuver. When approved, the consolidated target list is provided to the squadron's troops and supporting artillery. In a regimental squadron, the list is also provided to the regimental FSO, who in turn reviews the squadron lists, eliminates duplication between squadrons,

and adds targets of regimental interest. He may also pass targets more appropriate for attack by another fire support means (for

example, USAF) to that agency and inform the affected squadron FSO of his actions.



Steps in fire support planning are:

1. Troop forward observers prepare the troop fire plan.
2. Troop commander approves the troop fire plan.
3. Squadron fire support officer eliminates duplications and adds targets as required.
4. S3 checks the squadron fire plan to see that it complements the scheme of maneuver.
5. Squadron commander approves the plan.

FIRE SUPPORT COORDINATION

The fire support section of the regiment, regimental squadron, and air cavalry squadron of the ACCB coordinates and advises the commander concerning all fire support. It also establishes and manages the fire support coordination center (FSCC).

The senior artillery officer with the regiment or squadron is the fire support coordinator (FSCOORD). Efforts of the S3 and FSCOORD are supplemented by tactical air control parties (TACP's) provided to a regiment or squadron. They do this by:

- Establishing and maintaining facilities for communications with USAF control agencies.
- Receiving, coordinating, and transmitting immediate requests for tactical air support.
- Advising in Air Force tactical air support matters.
- Controlling airstrikes.

When required, division artillery provides the division cavalry squadron a fire support officer (FSO) for liaison and communication with supporting field artillery. The FSO will be the FSCOORD for the divisional squadron. Fire support coordination is done by the fire support element (FSE) in the squadron headquarters, under the supervision of the FSO. Composition of the FSE will vary from time to time, but normally includes the ALO and representatives of other fire support agencies supporting the squadron. The squadron commander may take the FSO and ALO with him in his command group to forward areas of the battlefield to better coordinate fire support for the squadron. At troop level, the troop commander is the FSCOORD.

In selecting the best means to attack a target, the commander and his fire support officer must consider the:

- Characteristics of the target and the desired effect on the target.
- Characteristics, capabilities, and limitations of available weapons.
- Most economical delivery means.
- Available ammunition supply rate.
- Response time.
- Tactical benefits to be gained.
- Safety of friendly troops.

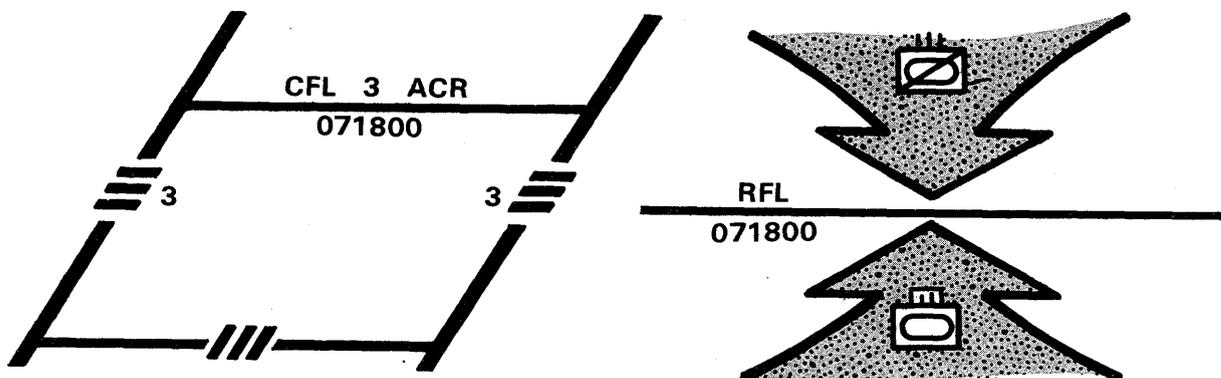
To aid fire support coordination and to ensure the safety of friendly troops, aircraft, and installations, various coordinating and limiting measures are used:

- *Boundaries* are established by maneuver force commanders. No unit may fire into another unit's area of operations without the approval of that unit. However, boundaries are not intended to restrict the concentration of fires on the enemy.

- *Coordinated Fire Line (CFL)* is normally established by the regimental commander based on recommendations of subordinate units. Units may not fire short of the CFL without the approval of the headquarters that established it.
- *Restrictive Fire Line (RFL)* is estab-

lished between forces moving towards each other. Fires beyond the RFL must be coordinated with the approaching force.

The FSO passes coordinating and limiting measures and any other control measures being used by the squadron to the DS artillery battalion.



AIR DEFENSE

The air Threat varies from armed helicopters to high-performance aircraft. Cavalry engages and destroys hostile aircraft as it engages and destroys other hostile targets. Indiscriminate firing must be avoided to prevent danger to friendly aircraft and unnecessary disclosure of friendly positions. This is done by controlling air defense fires using hostile criteria and weapons control status established above regiment. Engagement is controlled by the weapons control status. A regiment or squadron may impose a more restrictive status, but can't implement a less restrictive status. Air defense weapons

control statuses are:

- *Weapons Tight.* Engage only those aircraft positively identified as hostile.
- *Weapons Free.* Engage aircraft not positively identified as friendly. In this status, unknown aircraft may be engaged.
- *Weapons Hold.* Do not fire (cease fire). Weapons hold allows engagement in self-defense.

See FM 44-1 for more information.

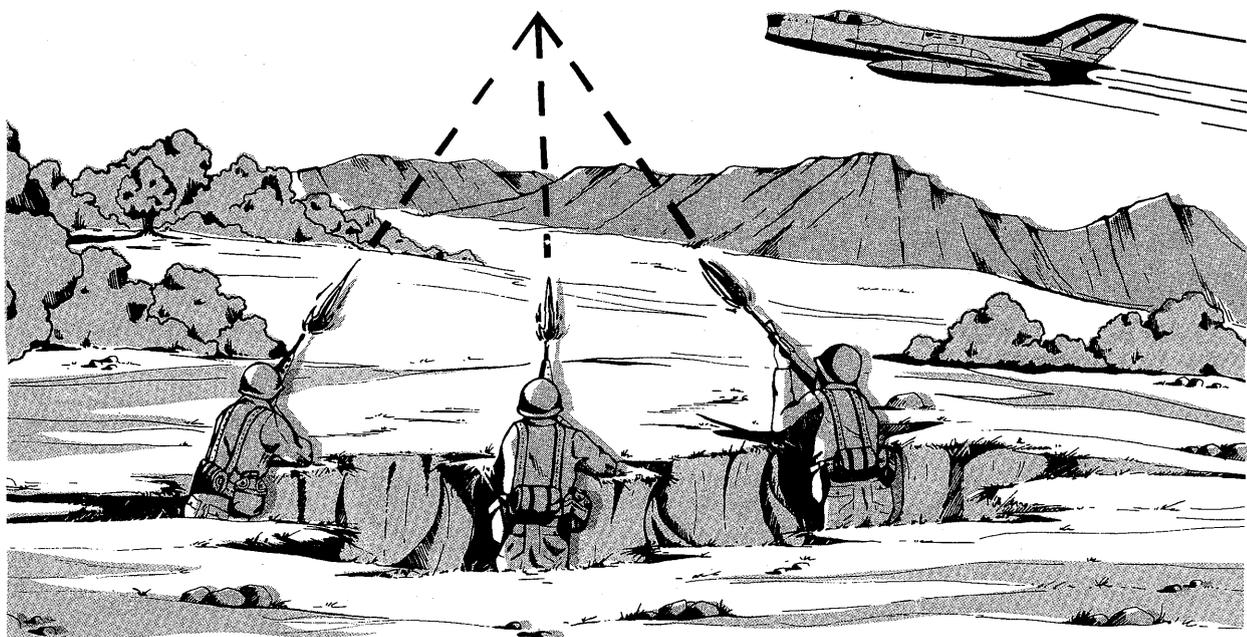
PASSIVE AIR DEFENSE

Passive air defense concerns all measures used, except engagement by fire, to prevent attack by hostile aircraft. The purpose is to avoid detection. Camouflage covering windshields, headlights, or canopies of concealed aircraft makes vehicles more difficult to detect. Whenever possible, elements remain concealed in brush, woods, or shadows. If available and situation permits, cavalry uses camouflage nets. Vehicles are not silhouetted against the skyline or a background of a different color. In snow, vehicles are camouflaged with white wash according to the camouflage pattern established for the theater of operations. At night, a vehicle's lights, soldiers smoking, gun flashes, flashlights, or lights from a shelter or

van may result in an air attack. Passive air defense also concerns movement along covered and/or concealed routes, forests, or shadows cast by mountains or buildings. Strict communications security reduces the enemy's ability to pinpoint friendly units. Lateral and in-depth dispersion helps reduce the effectiveness of an enemy air strike.

ACTIVE AIR DEFENSE

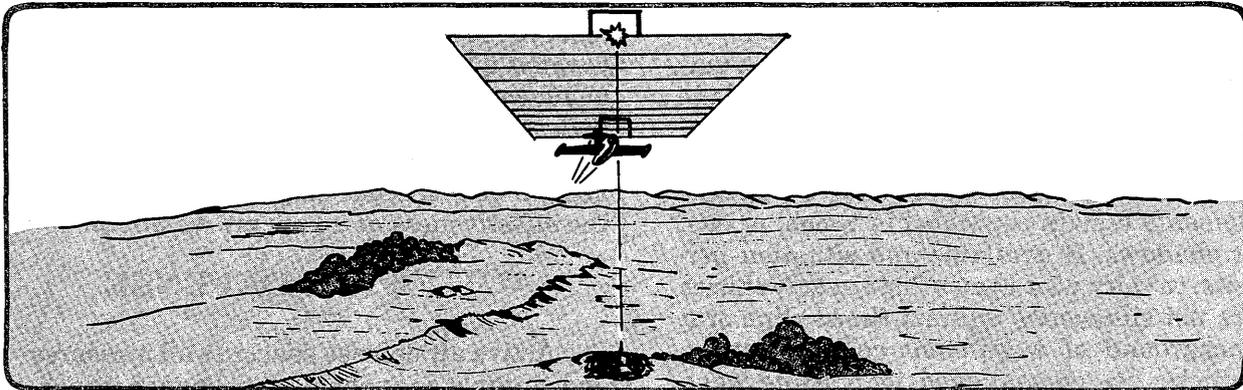
Active air defense concerns all measures and suitable weapons used to engage attacking aircraft. Techniques of engaging aircraft with small arms weapons are summarized below and further discussed in FM 23-12 and 23-15.



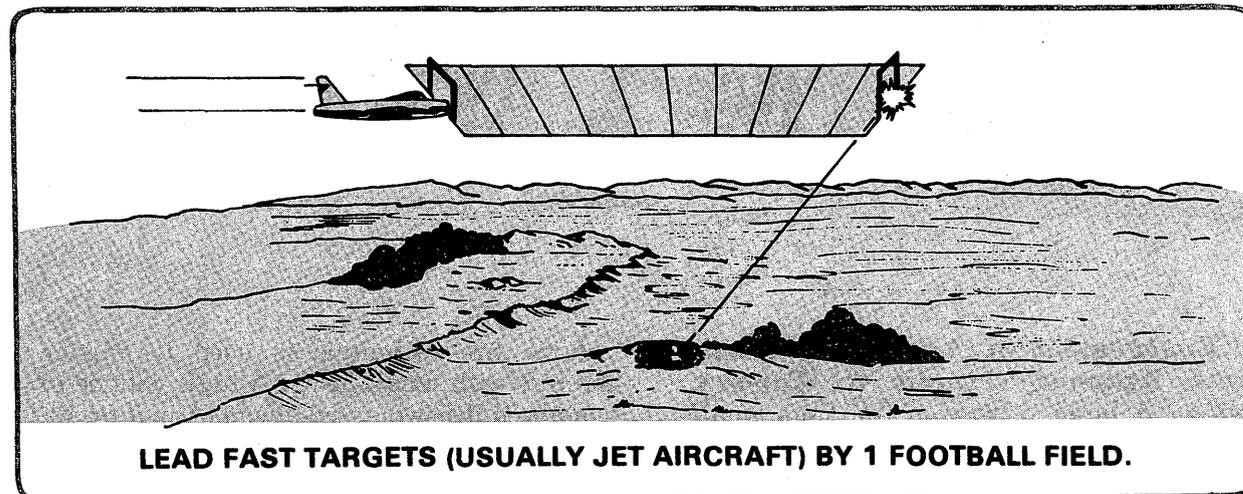
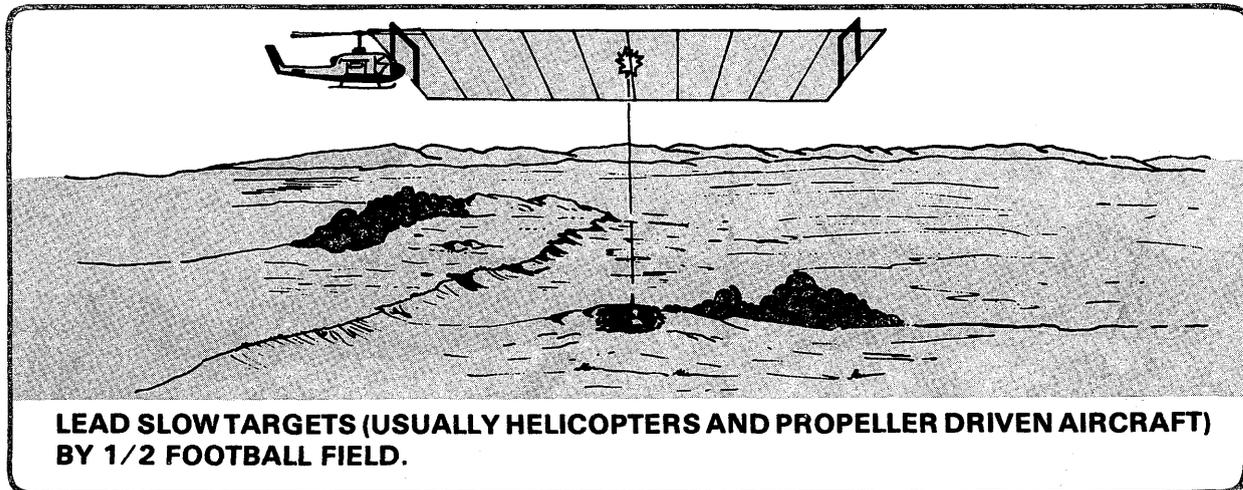
Engagement of Aircraft by Small Arms Weapons Organic to Cavalry Units. A large volume of fire from small arms weapons can destroy both high- and low-speed aircraft or disrupt their attack. The

volume fire technique is used to engage aircraft with small arms. A high volume of sustained fire is massed ahead of an aircraft. The intention is to destroy the aircraft when it flies into the fire.

When an enemy is flying directly toward you, fire as fast as possible and slightly above the nose of the aircraft.

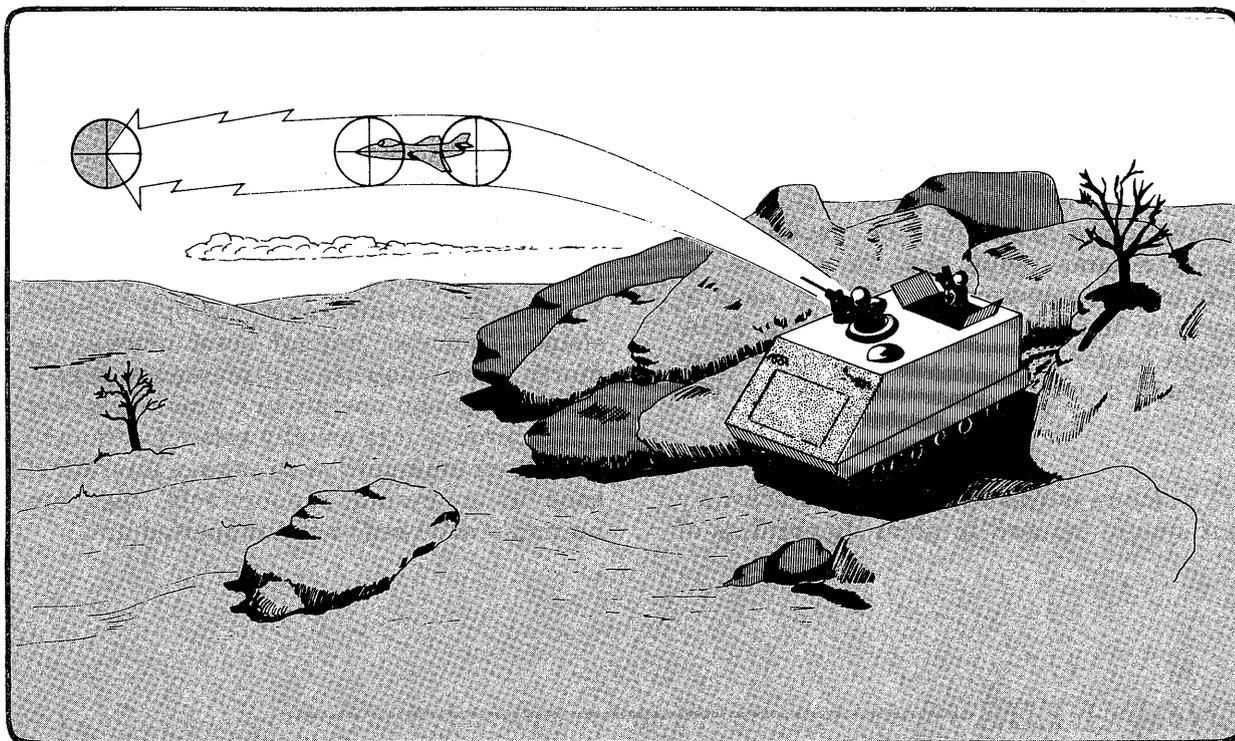


A lead angle is required for aircraft flying crossing and overhead courses. The amount of lead required depends on aircraft speed.



Automatic weapons can use an alternate technique called the sweep-through method. The gunner starts tracking to the rear of the hostile aircraft, sweeps through the aircraft,

begins firing as he sweeps through or a little later, and continues firing until target is destroyed.



Engagement of Aircraft by ADA Weapons Organic to Cavalry Units. A regimental headquarters and air and armored cavalry squadrons have an air defense artillery section armed with shoulder-fired air defense weapons to provide fair weather, low-altitude air defense. The ADA section is used in one of two roles:

- ***Redeye in Support of Tactical Operations.*** Redeye teams should be positioned well forward with maneuver units in order to achieve early engagement. Team capabilities are overlapped when possible to prevent gaps in defense. When defending a critical asset within a squadron's area of operation, the teams should be positioned out from the assets, in

accordance with ground security.

- ***ADA in March Column Defense.*** March column defense is air defense protection given a displacing cavalry unit. ADA teams should be to the front and rear to dominate along the axis of the column. If enough teams are available, teams should also be placed to the flank for added security. Air defense artillery weapons of a regiment, of air and armored cavalry squadrons, or organic to the headquarters and headquarters troop have a 13-meter backblast and a distinct firing signature. A team, should immediately displace 300-500m after firing.

Augmentation of a Regiment or Cavalry Squadron Air Defense Capability. The air defense capability of a regiment or divisional squadron may be reinforced by corps or divisional ADA battalions. Cavalry units may also receive additional air defense coverage from air defense units operating in the general area.

When corps or divisional ADA units are attached to or under operational control of cavalry, the ADA commander is the air defense coordinator for the regiment or squadron and plans the air defense. A regiment or squadron commander usually specifies the relationship of their ADA section leader to the supporting ADA commander. For additional information, see FM 44-1.

Vulcan systems operating with a cavalry unit should be used in pairs. Regardless of

where they are used by the cavalry unit, they still remain subject to the restrictions imposed by the air defense rules of engagement. Vulcan systems providing air defense for a moving force should position far enough forward so that two-thirds of their effective range extends beyond the lead elements. Vulcan systems should also position with the trail element of the unit. If the supported regiment or squadron is moving in column, Vulcans should be interspersed in the column. As in the case of air defense weapons organic to regiment and squadrons, Vulcans should position to the flanks. In general, Vulcans supporting cavalry supply combat element defense, critical asset defense, or march column defense as discussed on page 7-11. Vulcans can operate in a ground support role; however, it is usually better for them to save their ammunition to engage aircraft. If used in a ground support role, they are normally attached to the supported unit.

ENGINEERS

A combat engineer company is organic to the regiment. The company commander also serves as the cavalry regiment engineer and provides special expertise in engineer operations. A regiment is frequently provided additional engineer support from divisional or corps engineer units. The commander of the attached engineer company supervises attached engineer troops and develops task priorities for direct support troops. Engineer combat services include:

- Constructing, repairing, and maintaining roads, bridges, fords, and culverts.

- Providing support and coordinating engineer activities for river crossing operations with boats, rafts, and bridges and preparing deep fording or vehicle swim sites.
- Providing fixed bridging for passage of short gaps.
- Helping remove obstacles, including mines.
- Preparing and executing demolitions, including nuclear demolitions (ADM).

- Providing technical assistance for preparation of field fortifications, camouflage, and deception devices.
- Performing engineer reconnaissance and intelligence missions.
- Accomplishing general construction, including construction of landing areas.
- Producing potable water.
- Helping assault fortified positions.

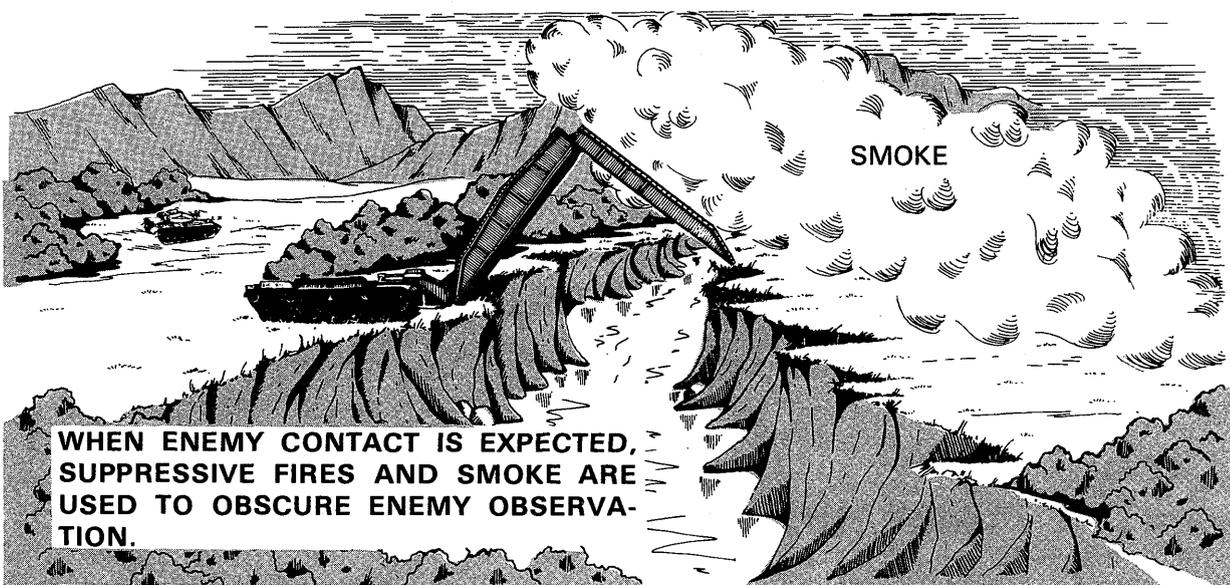
USE OF ENGINEERS WITH CAVALRY

Engineer units supporting cavalry are usually assigned a direct support mission. Units may be attached when distance, terrain, or mission makes operations under control of the parent unit impractical.

An engineer platoon often directly supports a troop conducting reconnaissance to collect technical data about routes, obstacles, streams, bridges, fords, etc. If the reconnaissance precedes the movement of a main body, a squadron may retain control of the engineers, and assign priorities of work to gain maximum freedom of action.

Armored Vehicle Launched Bridge (AVLB). A regimental squadron AVLB

section contains three armored vehicle bridge launchers, each with a class 60 scissor-type bridge. The bridge is capable of spanning a 60-foot gap. A divisional squadron is provided AVLB support from the divisional engineer battalion. The AVLB section may supply general support to the squadron or attach one or more AVLB's to a troop. AVLB's are used to span streams, antitank ditches, craters, canals, partially blown bridges and similar obstacles. The AVLB has no firepower and, therefore, must be overwatched and protected by tanks, light armor, or infantry. Suppressive fires and smoke to obscure enemy observation should be used as during any other operation.



WHEN ENEMY CONTACT IS EXPECTED, SUPPRESSIVE FIRES AND SMOKE ARE USED TO OBSCURE ENEMY OBSERVATION.

During reconnaissance and security operations, AVLB's are kept forward to prevent unnecessary delay. They usually move forward of the combat trains of the tactical elements.

When needed, an AVLB moves while being overwatched by the supported element and emplaces its span. If the unit is in contact with the enemy or if contact is expected, suppressive fires and smoke are used to obscure enemy observation. Suppressive fire and smoke should seal off more than one area. This makes it more difficult for the enemy to mass his suppressive fires. Combat elements cross as rapidly as possible.

When the force has crossed, and in the absence of orders to leave the bridge in place, the bridge is recovered. A cavalry regiment or squadron ordered to leave a bridge in place coordinates with supporting engineers to acquire a replacement.

Combat Engineer Vehicle (CEV). A CEV is a main battle tank modified to provide a dozing, winching, lifting, and demolition gun (165-mm) capability for combat engineers. There are two CEV's in an engineer company supporting a regiment and in each combat engineer company of combat engineer battalions organic to armored and

mechanized infantry divisions. There is one CEV in each combat engineer company of the combat engineer battalion organic to infantry divisions. A CEV provides a protected means of accomplishing engineer pioneer tasks when in contact with the enemy. CEV's must be overwatched and protected by tanks, light armor, and infantry. Suppressive fires and smoke are used to obscure enemy observation. Appropriate tasks for a CEV are:

- Destroying or constructing road blocks.
- Filling craters and antitank ditches.
- Placing fixed span assault bridging.
- Preparing an abutment on the near bank for an AVLB.
- Improving approaches and entry and exit points for fording and amphibious vehicles.
- Improving roads and trails, as required, to facilitate forward movement of combat elements.
- Destroying strongpoints during the assault of fortified or built-up areas.
- Constructing hasty gun emplacements.
- Helping dig tank emplacements.

GROUND SURVEILLANCE RADARS AND REMOTELY EMPLOYED SENSORS (REMS)

GROUND SURVEILLANCE RADARS

Employment of Ground Surveillance Radar Sections. Ground surveillance

radar sections of cavalry units are usually used by teams to:

- Search avenues of approach and areas on a time schedule, randomly or continuously to detect location, size, composition, and nature of enemy activity.
- Monitor point targets, such as bridges or road junctions, to detect number, type, and direction of movement of targets through the point.
- Search and monitor ambush areas or other locations.
- Search areas of nuclear and conventional fires for signs of enemy activity immediately after firing. This aids post-strike analysis.
- Survey distant points or areas of special interest.
- Detect targets through haze, fog, smoke, and at night.
- Help orient units during limited visibility operations.
- Increase effectiveness of fire support by detecting and providing target locations.
- Determine the speed of a target. The radar unit plots the target location at two known points and computes the movement time between the points.

Selection of Ground Surveillance Radar Sites. Radar sites may be selected by the section or team leader. Frequently, they are located with an OP or a team of an armored cavalry platoon. A radar team must be capable of rapid displacement to avoid suppressive fires. In general, the criteria for an OP site applies to a ground surveillance radar site. A radar's field of view should be relatively free of close ground clutter, such as trees, bushes, or buildings. Such objects tend to distort the radar signal, resulting in inaccurate range, azimuth, and elevation data. The enemy can detect radar signals. The result of detection is usually suppressive fires. It is best to periodically search an area and, in the absence of target detection, turn off the radar.

REMOTELY EMPLOYED SENSORS (REMS)

From time to time, especially during defense operations, divisional or corps REMS teams are attached to or placed in direct support of cavalry units. When attached to or placed in direct support of a cavalry unit, the S2, based on the commander's guidance, designates the area of surveillance to be covered. He integrates REMS coverage with

other surveillance means to cover gaps, flanks, or avenues of approach into the unit's area. A REMS team uses sensors where they can best cover the assigned area and then locates with the operation and intelligence center. There the REMS team monitors the sensors and passes the information to the S2 and higher headquarters.

INTELLIGENCE

Intelligence is an essential prerequisite for cavalry operations, which in turn help provide information for the production of intelligence. A military intelligence detachment is usually provided to a regiment. It provides order-of-battle specialists and imagery interpretation, interrogation, and counterintelligence personnel. Similar support to a divisional air or armored cavalry squadron is provided by the divisional military intelligence company; however, military intelligence personnel are usually retained under divisional control. Interrogation and counterintelligence personnel can be used at troop level for short periods. An Army security agency (ASA) support platoon is usually attached or placed in direct support of a regiment to help maintain communications security (FM 32-10). Similar support is provided a divisional squadron by the ASA company attached to division (wartime augmentation). ASA elements are frequently located with a squadron, but they are not attached to or placed under the OPCON of a squadron. In this case, a squadron must

provide security and logistical support. Military intelligence support for a separate air cavalry squadron is determined by the squadron's mission requirements. Organic aerial reconnaissance and surveillance capabilities of air cavalry can be supplemented by Army aviation units specifically equipped to provide photographic (day and night), infrared, and radar support. The tactical Air Force also provides photographic and electronic support, weather information, and information gained from aerial observation.

Combat intelligence is intelligence used in a combat area. It is based upon information collected locally or provided by higher headquarters. A cavalry unit uses the three elements of combat intelligence—information concerning terrain, weather, and the enemy—to plan and conduct combat operations. The collection and analysis of combat information is a continuing requirement (FM 30-5).

ARMY AVIATION, MILITARY POLICE, PSYCHOLOGICAL WARFARE, AND CIVIL AFFAIRS

ARMY AVIATION

Army aviation is integrated into combat, combat support, and combat service support to improve operations. Cavalry regiments and squadrons have helicopters for com-

mand, control, and liaison. A regiment has an aviation platoon (page 3-6). A regimental armored cavalry squadron has an aviation section (page 3-8). Each air cavalry squadron

also has an aviation platoon (page 3-15). Army aviation units may be attached to, in support of, or under the OPCON of a cavalry regiment or squadron. Cavalry units are often supported by:

- Assault and assault support helicopter companies for troop and cargo lifts.
- Heavy helicopter companies for heavy equipment and cargo lifts.
- Fixed-wing surveillance companies for visual, photographic, and electronic surveillance.
- Air ambulance companies for casualty evaluation.
- ★ ■ Command and control elements of the regiment.
- ★ Command console helicopters, assigned to air combat support troops and divisional combat aviation companies, can provide highly mobile command posts that can be moved about the battlefield transporting command groups, alternate command groups, or radio relay teams.

For a detailed discussion of Army aviation, see FM 1-5, FM 1-15, and FM 90-1.

MILITARY POLICE (MP)

An armored cavalry regiment normally has an MP platoon attached from COSCOM. The platoon is usually retained under regimental control to:

- Provide internal security for the regimental CP and/or trains.
- Operate traffic control points.
- Help guard, process, and evacuate PW's.

Cavalry units below regimental level are provided MP support on an as-needed basis. See FM 19-20 for more information concerning MP operations.

PSYCHOLOGICAL WARFARE (PSYWAR)

PSYWAR includes the planned use of propaganda and other measures to influence the opinions, emotions, attitudes, and behavior of enemy, neutral, or friendly groups. PSYWAR units assigned to a theater or corps provide functional teams to divisions and armored cavalry regiments on an attached or supporting basis. These teams engage in propaganda operations to:

- Depress enemy morale.
- Diminish enemy combat effectiveness.
- Encourage defections.
- Stabilize civilians and prevent interference with combat operations.

PSYWAR support provided cavalry units normally involves loudspeaker broadcasts and leaflet drops directed toward:

- Isolated enemy units.
- Individual enemy soldiers identified by PW's or defectors.
- Civilians to help in refugee control and other civil affairs operations.

See FM 33-1 for more information.

CIVIL AFFAIRS

Civil affairs support is given to the armored cavalry regiment by one or more functional teams from the COSCOM civil affairs battalion. In cavalry, civil affairs support for squadrons and lower units is provided on an as-needed basis. Civil affairs activities:

- Prevent civilian interference with military operations.
- Discharge a commander's legal obligations to the local civilians.
- Help maintain public order and safety.

See FM 41-10 for more information.

SUMMARY

Combat support for cavalry units is provided by mortars, artillery, USAF tactical fighter-bombers, and engineer, signal, military intelligence, Army aviation, military police, psychological warfare, and civil affairs units.

Usually, *mortars* fire immediate suppressive fires, including smoke, until artillery can be brought to bear. As soon as artillery can be brought to bear, the cavalry platoon mortar should cease fire to conserve ammunition.

Field *artillery* fire destroys or suppresses enemy elements which can fire on the unit. Field artillery can also destroy or make ineffective personnel, vehicles, and equipment in command control parties or facilities, logistics areas, and assembly areas.

The USAF *tactical fighter-bomber* is an excellent weapon system with which to attack a well-emplaced enemy. It can quickly destroy hard point targets, including tanks.

An *engineer* platoon is often placed in direct support of a troop conducting reconnaissance to collect technical data about routes, obstacles, streams, bridges, fords, etc.

Ground surveillance radars are used by cavalry units to search avenues of approach; monitor point targets and ambush areas; search fire areas after firing; detect targets through haze, fog, smoke, and darkness; and determine the speed of targets.

Remotely controlled sensors (REMS) coverage is usually integrated with other surveillance means to cover gaps, flanks, or avenues of approach.

Intelligence is an essential prerequisite for cavalry operations, which in turn help provide information for the production of intelligence. A cavalry regiment usually has order-of-battle specialists and imagery interpretation, interrogator, and counterintelligence personnel.

Army Aviation supports cavalry units by supplying:

- Assault and assault support helicopter companies for troop and cargo lifts.
- Heavy helicopter companies for heavy equipment and cargo lifts.
- Fixed-wing surveillance companies for visual, photographic, and electronic surveillance.
- Air ambulance companies for casualty evacuation.
- ★ ■ Command console helicopters for highly mobile command posts.

A *military police* platoon is usually retained under regimental control to provide internal security for the regimental CP and/or trains; control traffic; and help guard, process, and evacuate PW's.

Functional teams from *psychological warfare* units normally use loudspeaker broadcasts and leaflet drops to influence the opinions, emotions, attitudes, and behavior of enemy, neutral, and friendly groups.

Civil affairs support prevents civilian interference with military operations, discharges a commander's legal obligations to the local civilians, and helps maintain public order and safety.

COMBAT SERVICE SUPPORT

Combat service support for cavalry units primarily concerns supply, transportation, maintenance, and personnel, medical, and administrative services. Combat service support may involve:

- A service.
- An item.
- Technical assistance or advice.

The impetus of combat support is to the front; that is, combat service support is performed as far forward as the tactical situation permits. Supplies are delivered to front line units whenever possible. This method of resupply is called **unit distribution**. The other method is **supply point distribution**, a process in which the user must go to a distribution point and pick up supplies. Cavalry units obtain supplies through a combination of unit and supply point distribution. Sometimes, when critical items (major assemblies, ammunition, and fuel) are in short supply, corps units deliver those items directly to the squadrons.

Maintenance is performed at the lowest echelon capable of doing the job. Frequently, maintenance contact teams from divisional and corps maintenance units work with front line units to help cannibalize and repair disabled equipment in order to get equipment back into battle as quickly as possible.

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ORGANIC COMBAT SERVICE SUPPORT IN CAVALRY UNITS

All cavalry units, except platoons, have organic combat service support elements to provide for their immediate needs and interface with the combat service support chain. Combat service support elements usually organize into trains for combat. At regiment and squadron level, the S1 and S4 have primary staff responsibility for combat service support. The troop executive officer, or service platoon leader in an air cavalry troop is usually the combat service support coordinator for the troop. Platoon leaders and platoon sergeants are responsible for making the needs of their platoons known.

Regiment. There are only limited organic service support elements at regimental level. The regimental headquarters troop maintenance section performs organizational maintenance and recovery of only its own vehicles. The regimental communications platoon performs organizational maintenance only on signal equipment assigned to regimental headquarters troop. The regimental medical section operates the regimental aid station. It provides aidmen and aid evacuation teams to troop-size elements.

Armored Cavalry Squadron. Each armored cavalry squadron has certain elements concerned primarily with combat service support activities.

The support platoon's supply section receives and consolidates supply requests from organic troop-size units, prepares requisitions, and procures and issues supplies. The platoon's transportation section transports that part of the squadron basic load or class III and V not issued. It also transports all other supplies from distribution points for the squadron. A divisional armored cavalry squadron's support platoon also has a mess section which procures, prepares, and delivers rations and water.

The maintenance platoon provides backup organizational maintenance and recovery of ground vehicles for the squadron. It supplies repair parts for all equipment except medical, signal, and aircraft peculiar items.

The medical platoon establishes and operates the squadron aid station. It provides medical aid teams and ambulance service to troop-size units. It procures and distributes medical repair parts and supplies for the squadron. The platoon also helps teach first aid, field sanitation, and related subjects. It inspects the squadron's medical, dining, and sanitary facilities to ensure high standards.

The communications platoon performs organizational maintenance on signal equipment of the squadron headquarters troop. It provides backup organizational maintenance of signal equipment for the squadron. It procures and issues signal repair parts and supplies, and evacuates signal equipment not repairable within the squadron.

Air Cavalry Squadron. An air cavalry squadron's combat service support elements generally parallel those of an armored cavalry squadron except:

- An air cavalry squadron's support platoon's transportation section carries class III and V supplies for the ground cavalry troop and that part of the squadron's basic load of supplies not issued. Each air cavalry troop has class III and V vehicles. The ACCB air cavalry squadron's support platoon does not have a transportation section. This air cavalry squadron's transportation requirements are met by using organic aircraft and ground/air transportation provided by the ACCB support battalion.

- The aviation unit maintenance (AVUM) platoon organic to each air cavalry squadron provides maintenance for squadron aircraft. It has a limited recovery and evacuation capability for ground vehicles. All organizational maintenance for ground vehicles is performed by the aviation unit maintenance platoon, air cavalry troop service platoons, and maintenance section organic to the ground troop.

Armored Cavalry and Cavalry Troops and Regimental Armored Cavalry Squadron's Tank Company and Howitzer Battery. At troop/company or battery level, the basic load of class I, III, V, and IX supplies carried is an essential part of organic combat service support.

Each ground troop and regimental armored cavalry squadron's tank company and howitzer battery has administrative, supply, communication, and maintenance elements. The supply elements are primarily concerned with requisitioning, receiving, and distributing class II, IV, and VII supplies. The communication and maintenance elements provide organizational maintenance support for their parent unit and combat service support interface with counterpart elements at squadron level. Each unit maintenance section, with exception of the howitzer battery, has a tracked recovery vehicle (TRV). The regimental armored cavalry squadron's

howitzer battery depends on TRV support from the squadron maintenance section.

Air Cavalry Troop. An air cavalry troop has the usual company level headquarters elements for administration. Otherwise, the service platoon is the focal point for most combat service support in the troop.

The service platoon's maintenance section performs organizational maintenance on troop aircraft, vehicles, weapons, and signal equipment. Light observation helicopters can be recovered by the platoon with utility aircraft. Ground vehicles beyond the troop's capability to repair are repaired onsite by a supporting contact team or evacuated by the troop to a maintenance collection point or directly to the supporting maintenance unit. The aviation intermediate maintenance (AVIM) company is responsible for evacuating aircraft beyond the repair capability of the troop.

The service platoon's supply section carries the troop's basic load of class III and V supplies not issued, and it establishes FARRP's. It also requests, receives, and distributes class II, IV, and VII supplies.

Armored Cavalry, Cavalry, or Air Cavalry Platoon. All personnel in an armored cavalry, cavalry, or air cavalry platoon are dedicated to combat. The platoon's basic load of rations, POL, ammunition, and spare parts comprises the organic service support.

NONORGANIC COMBAT SERVICE SUPPORT PROVIDED A CAVALRY UNIT

Nonorganic combat service support for a regiment is provided by a corps support command (COSCOM). Nonorganic combat service support for a divisional squadron is provided by the DISCOM. Nonorganic combat service support for a separate air cavalry squadron may be provided by either COS-

COM or DISCOM. Determining factors are the squadron's mission and its duration. The ACCB air cavalry squadron is given nonorganic combat service support, including aerial recovery of disabled Army aircraft by the ACCB support battalion.

COMBAT SERVICE SUPPORT CONSIDERATIONS

The Army logistics system is based upon principles contained in AR 11-8. Of primary interest to cavalry units are the principles of command, impetus to the front, maintaining reserves, and planning.

Command. Each cavalry commander and leader is responsible for ensuring adequate and timely combat service support for his organic and attached elements. Commanders and leaders do this by anticipating requirements, making their needs known, and supervising the use of available combat service support.

Impetus to the Front. Combat service support is provided as far forward as the tactical situation permits. At times, ammunition and other supplies for an armored cavalry platoon must be carried forward in an armored personnel carrier.

Maintaining Reserves. Reserve supplies are frequently carried by cavalry units to facilitate sustained, widely dispersed operations. These reserves may be extra

rations, ammunition, and spare parts carried on individual vehicles. Class IV and V supplies may be pre-positioned for defense. During reconnaissance and fast-moving operations, additional class III and V vehicles are frequently placed with each squadron/troop/company/battery.

Planning and Coordination. A combat service support plan is based on the tactical operation. It should be simple, complete, flexible, and coordinated with the tactical plan.

Planning and coordinating steps are:

- (1) Identify combat service support requirements.
- (2) Allocate available combat service support. Make maximum use of available combat service support before requesting additional support.
- (3) Obtain and allocate additional support as required.
- (4) Supervise.

GROUND AND AIR CAVALRY TRAINS

TRAINS

Organization, Functions, and General Considerations. Cavalry units, from regiment through troop/ company/ battery, normally use unit trains; that is, all organic and supporting combat service support elements are under control of the unit. Trains may be with the supported tactical unit or some distance to the rear. They may be echeloned into combat and field trains. Combat trains provide the combat service support required for immediate response to the needs of tactical elements. Field trains are located rearward to prevent interference with the tactical operation. Field trains, displacing independently of the supported tactical unit, receive security through passive measures.

Echelonment is usually desirable with cavalry because of the frequent necessity to gain and remain in contact with the enemy. At troop level, for example, the supply truck and maintenance truck may follow one or two terrain features behind the troop. Echelonment reduces the number of combat service support elements representing a soft target in a close combat environment. Trains can be consolidated to provide prompt and responsive combat service support of all types from a single point. Units must be ready to echelon or consolidate trains as the tactical situation changes. Echelonment of trains within a divisional armored cavalry squadron and its parent division is depicted on page 8-10.

The mission and tactical situation are the deciding factors which determine *if* and *how* to echelon trains. If enemy contact is light, then ammunition consumption and vehicle loss due to enemy action are relatively low. However, the use of fuel and lubricants is usually high; therefore, a larger number of

class III vehicles are kept forward. Contact with strong enemy forces normally results in greater ammunition consumption. The use of fuel and lubricants is low compared to ammunition, so it is necessary to pay more attention to the supply and transportation of class V.

General Considerations for Choosing Trains Areas. The location must:

- Minimize the vulnerability of combat service support units to *direct* fire. Locate in hull-down positions whenever possible and avoid landmark locations.
- Not block a road or defile, or use areas required by maneuver reserves, artillery units, engineers, or other combat support units.
- Have adequate room for dispersion.
- Have helicopter landing areas, particularly for the evacuation of casualties.
- Be on firm ground.
- Conceal from ground and aerial observation.
- Be beyond the range of enemy light artillery.

Organization for Combat of Combat Service Support with Group and Air Cavalry. The regiment uses unit trains consisting of corps support command (COS-COM) units and those elements of the regimental headquarters and headquarters troop not with the operations and intelligence center. The air cavalry troop trains, and field trains of subordinate or attached units, may be located with the regimental trains. The regimental S4 establishes and maintains a regimental logistics control point (RLCP) in the regimental trains area near the center of movement. The RLCP is:

- The regimental combat service support operations center.
- Responsible for coordinating the security of the trains area.
- The planning center for area damage control operations.

The S4 must ensure trains displacement is coordinated with the regimental S3 and supporting COSCOM units. Planning is vital; COSCOM units require more reaction time than cavalry because they are not as mobile and require longer set up and take down times.

The technique of displacing the regimental trains area varies with each tactical situation. Displacement may be done by:

- Moving parts of each unit to the new location. Elements displaced first must have sufficient supplies, equipment, and transportation to provide their particular service until the rest of the train closes.
- Designating a squadron trains area as a regimental trains area while the regimental trains displace. This technique involves movement of some units and supplies to the designated squadron trains area to provide support normally found in regimental trains.

- Displacing all the regimental trains' elements simultaneously. This technique is fastest, but it does not permit continuous support.

The regimental air cavalry troop uses unit trains. Contact teams are formed and used as required.

Troop trains usually consist of:

- ★ ■ The service platoon, less personnel and equipment used to establish the forward arming and refueling point (FARP).
- DS aircraft maintenance elements.
- The medical aid and evacuation team, less personnel with other elements of the troop.

Troop trains normally controlled by the service platoon leader may be located:

- With regimental trains.
- At the operational base for regimental aircraft.
- At the COSCOM aircraft maintenance base.
- At the corps airfield.
- With a designated squadron.

★ The air cavalry troop establishes a mobile FARP as required to support its tactical operations. The troop establishes and operates only one FARP primarily because of limited personnel; however, under emergency conditions, it can establish and operate two FARP's for a limited period. A FARP consists of:

- Aircraft fuel and pumping equipment.
- Ammunition for aircraft weapons.
- Personnel to operate the FARP.
- Medical aidmen, aircraft mechanics, and armament repairmen, as required.

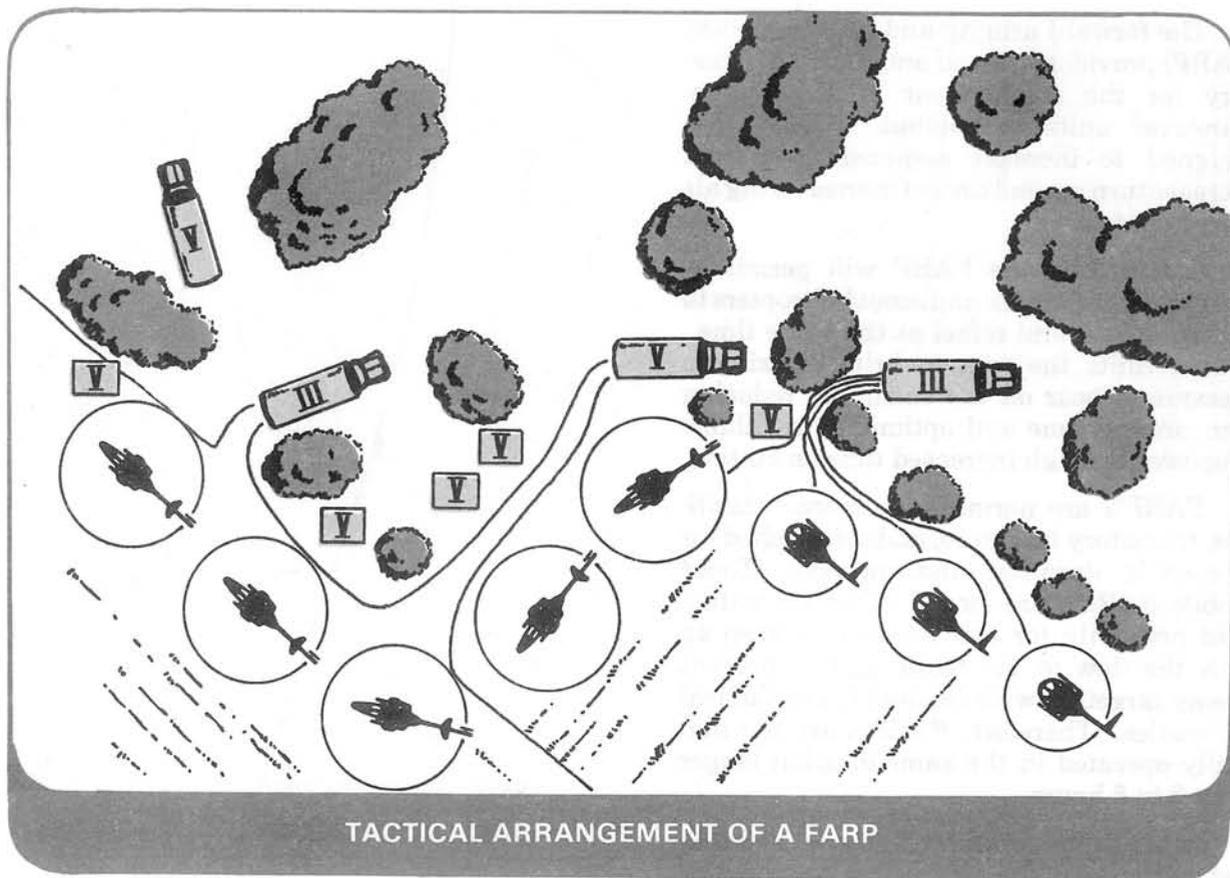
The forward arming and refueling point (FARP) provides fuel and ammunition necessary for the employment of air cavalry maneuver units in combat. FARP's are designed to increase responsiveness and decrease turn around time of maneuvering air cavalry teams.

Specifically, the FARP will permit at least a team of attack and scout helicopters to rapidly rearm and refuel at the same time. This permits the unit to bring maximum pressure to bear on the enemy by reducing turn around time and optimizing available firepower through increased time on station.

FARP's are normally temporary facilities, transitory in nature, and established for a specific duration and mission. These mobile FARP's are moved about the battlefield primarily for two reasons: to keep up with the flow of the battle and to prevent enemy targeting with indirect fire or tactical air sorties. Therefore, FARP's are not normally operated in the same location longer than 3 to 6 hours.

In tactical operations (offense, defense, and retrograde), the air cavalry commander positions FARP's based on the:

- Distance to and the stability of the forward edge of the battle area (FEBA).
- Required time-on-station.
- Security requirements for the FARP.
- Enemy ability to destroy the FARP with indirect fire.
- Availability of adequate road networks.
- Distance between the FARP and the nearest class III and V supply points.
- Command and control requirements.
- Proximity to the main supply route (MSR).
- Coordination with the logistical effort.



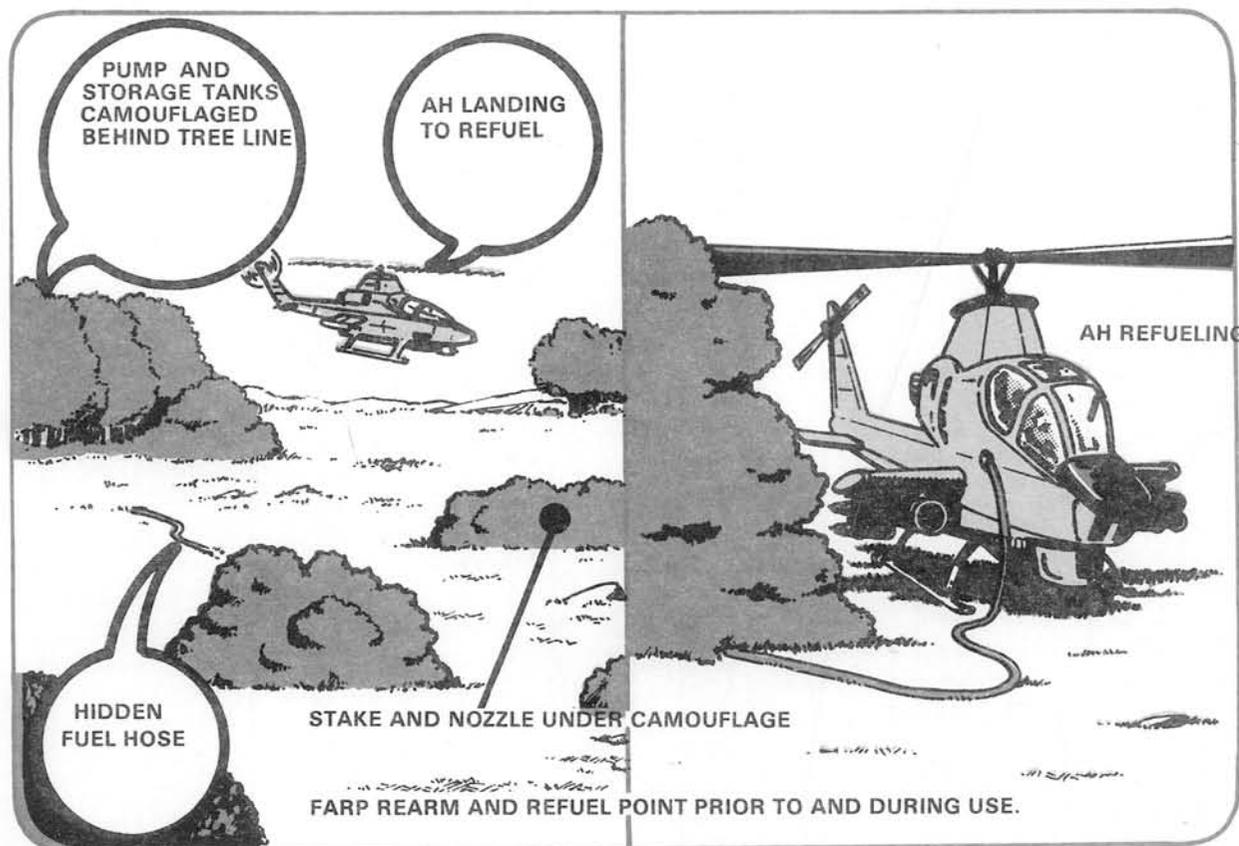
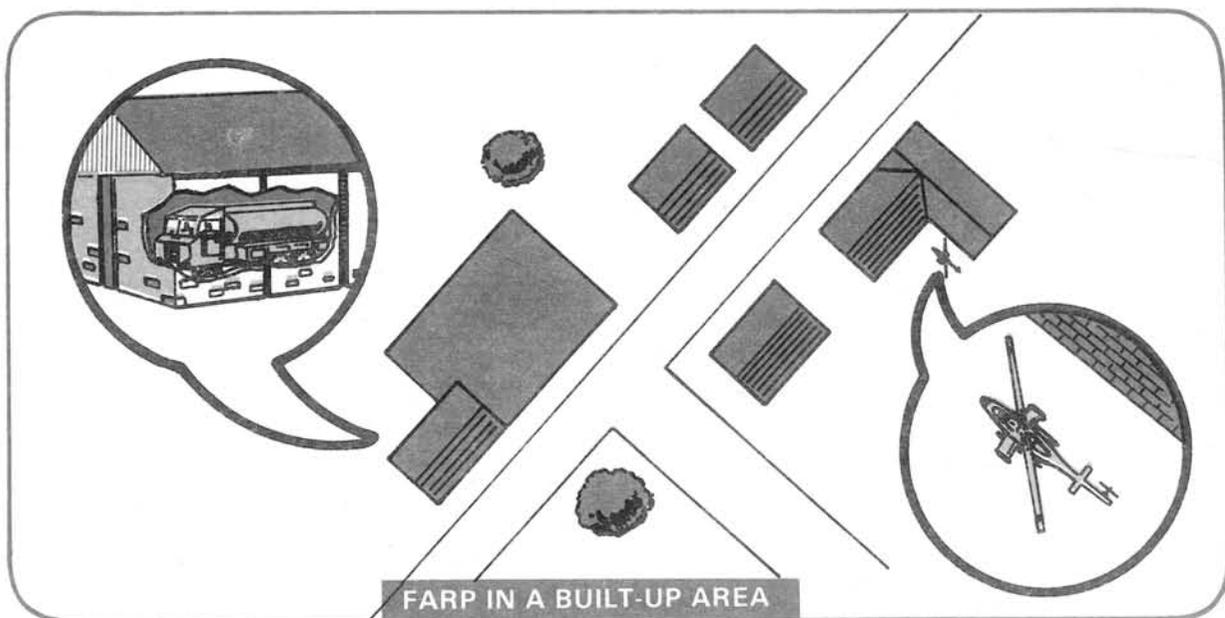
FARP's are usually established in or near forward assembly areas. Locations and routes to and from FARP's should be masked from radar detection.

Enemy radar should be assumed to be on any high ground or prominent terrain occupied by enemy forces. A line-of-sight analysis is made to determine the FARP mask. Then three or four points with routes leading to the FARP and masked from radar detection are established and used by aircraft going to the FARP. As teams return from missions to the FARP, they fly to one of these known masked points and then fly masked from radar detection to the FARP. Upon leaving the FARP, the teams return NOE to a masked point and then, if required, move with high speed to resume their assigned missions. By using such passive security

measures the teams avoid having the FARP directly detected by radar.

Because of the volume of aircraft traffic and their importance to AH operations, FARP's should also be kept beyond medium artillery range. When located further forward, they must be displaced often to minimize this threat.

The site of a FARP must not only be masked from possible radar detection, but must have sufficient space to service helicopters as they rearm and refuel. All platoons of a company can be committed simultaneously and can arrive on station quickly. The diagram above shows one way in which a FARP may be organized to keep aero-weapons and their respective aero-scouts together.



- Ammunition for aircraft weapons.
- Personnel to operate the FARRP.
- Medical aidmen, aircraft mechanics, and armament repairmen, as required.

A *regimental armored cavalry squadron* normally has consolidated unit trains known as squadron trains. The squadron S1 and S4 establish an admin/log center in the trains area for combat service support control and coordination. The S4 is responsible for control and movement of the trains.

The normal composition of squadron trains includes:

- Elements of S1 and S4 sections not with the squadron operations and intelligence center.
- Maintenance platoon.
- Support platoon.
- Medical platoon (except aid and evacuation teams attached to troops/ companies/batteries).
- Headquarters and headquarters troop maintenance (except elements with the squadron operations and intelligence center).
- Radio repairmen from the communications platoon.
- Armored cavalry troop and tank company supply sections.
- Troop and company mess teams. (Howitzer battery mess teams normally locate with their batteries.)

Grouping combat service support elements into squadron trains provides a single focal point and eases local security and command and control. Dispersion is important, but it must be limited enough that all elements contribute to the security of the area.

General guidelines for organizing the squadron trains area are:

- The S1/4 admin/log center should locate near the side closest to combat units to aid coordination.
- The squadron aid station should be near the side closest to combat units to help in patient evacuation and treatment.
- Administrative elements of the headquarters troop should locate near the admin/log center. Similarly, headquarters troop maintenance elements should be near the squadron maintenance platoon for ease of coordination.
- Class III and V points should be established along the supply route by the support platoon to facilitate re-supply.
- Mess teams should locate away from the supply route to keep dust from interfering with any food preparation.
- Guideposts and signs should be used at entrances and within the trains area to reduce unnecessary movement.
- Vehicles and other elements in trains should be under cover and concealed by camouflage.

The regimental squadron's armored cavalry troops normally organize combat and field trains. The combat trains, normally controlled by the troop executive officer or first sergeant, move and locate near the troop CP. Troop field trains locate and move with the squadron trains.

Combat trains contain:

- Troop maintenance section.

- Medical aid and evacuation team.

NOTE: During fast-moving situations, troop combat trains may contain ammunition and POL vehicles from the squadron support platoon.

Field trains contain:

- Troop mess team.
- Troop supply section.

The regimental armored cavalry squadron howitzer battery consolidates its trains. They usually stay with the battery.

The regimental armored cavalry tank company usually uses combat and field trains organized as in an armored cavalry troop.

The division armored cavalry squadron organization and use of trains is generally the same as for the regimental armored cavalry squadron. The differences are:

- The divisional squadron normally obtains support from the nearest brigade or the division support command (DISCOM).
- Air cavalry troop trains may be located:

- ★ ● At the maintenance base for division aircraft.
- With the troop CP.

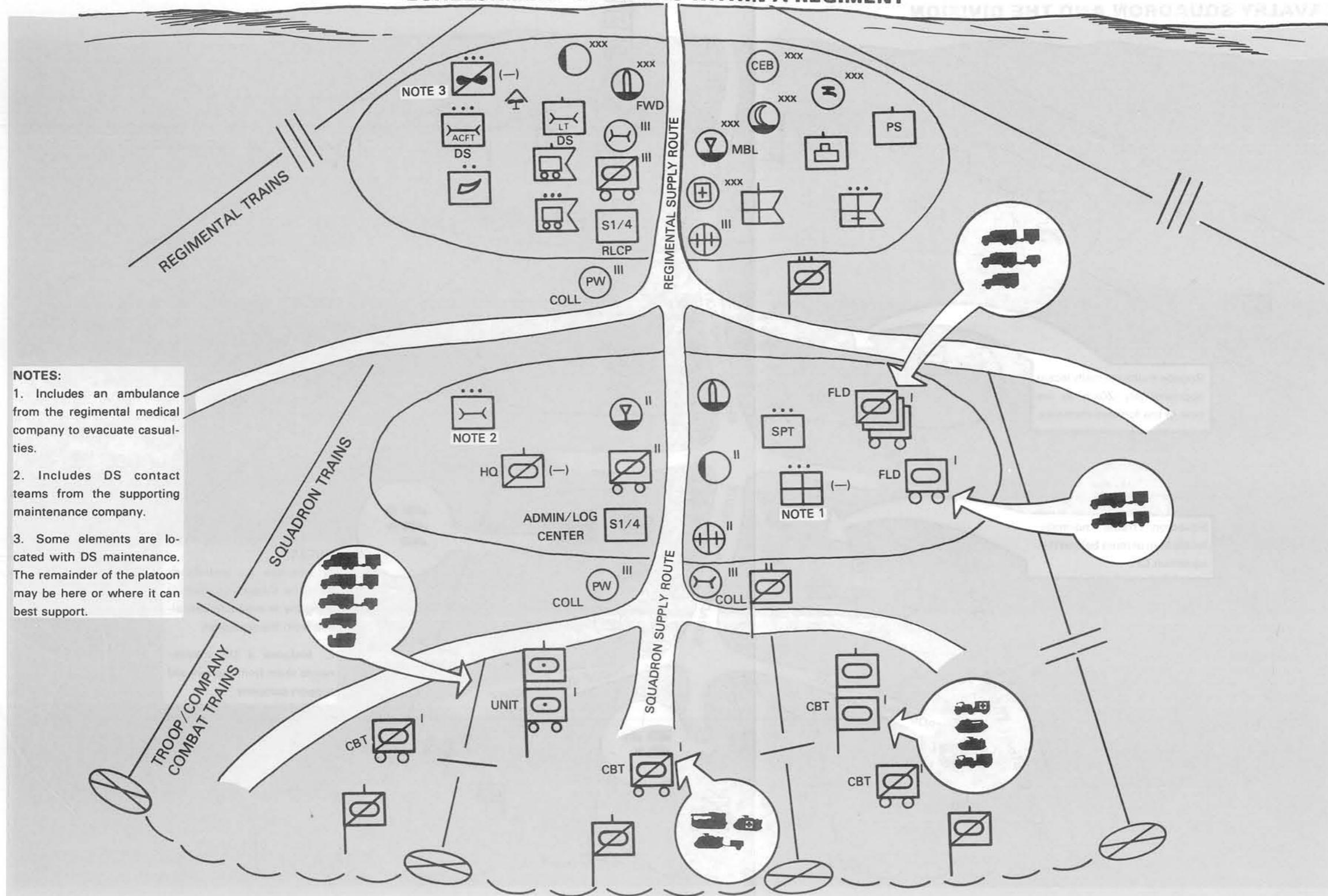
The air cavalry squadron normally consolidates its trains. Air cavalry unit trains are controlled by the squadron S4 and normally locate where the majority of the aircraft are based. Normally composition of the air cavalry squadron trains includes:

- Support platoon.
- Aircraft maintenance platoon.
- Transportation section.
- Elements of the medical platoon.
- Maintenance and support elements of the aviation platoon.

Air cavalry troops in an air cavalry squadron use trains in generally the same manner as ground cavalry troops. The difference is troop trains in an air cavalry squadron may locate:

- ★ ■ With the squadron trains.
- At the division or higher headquarters airfield or aircraft maintenance bases.

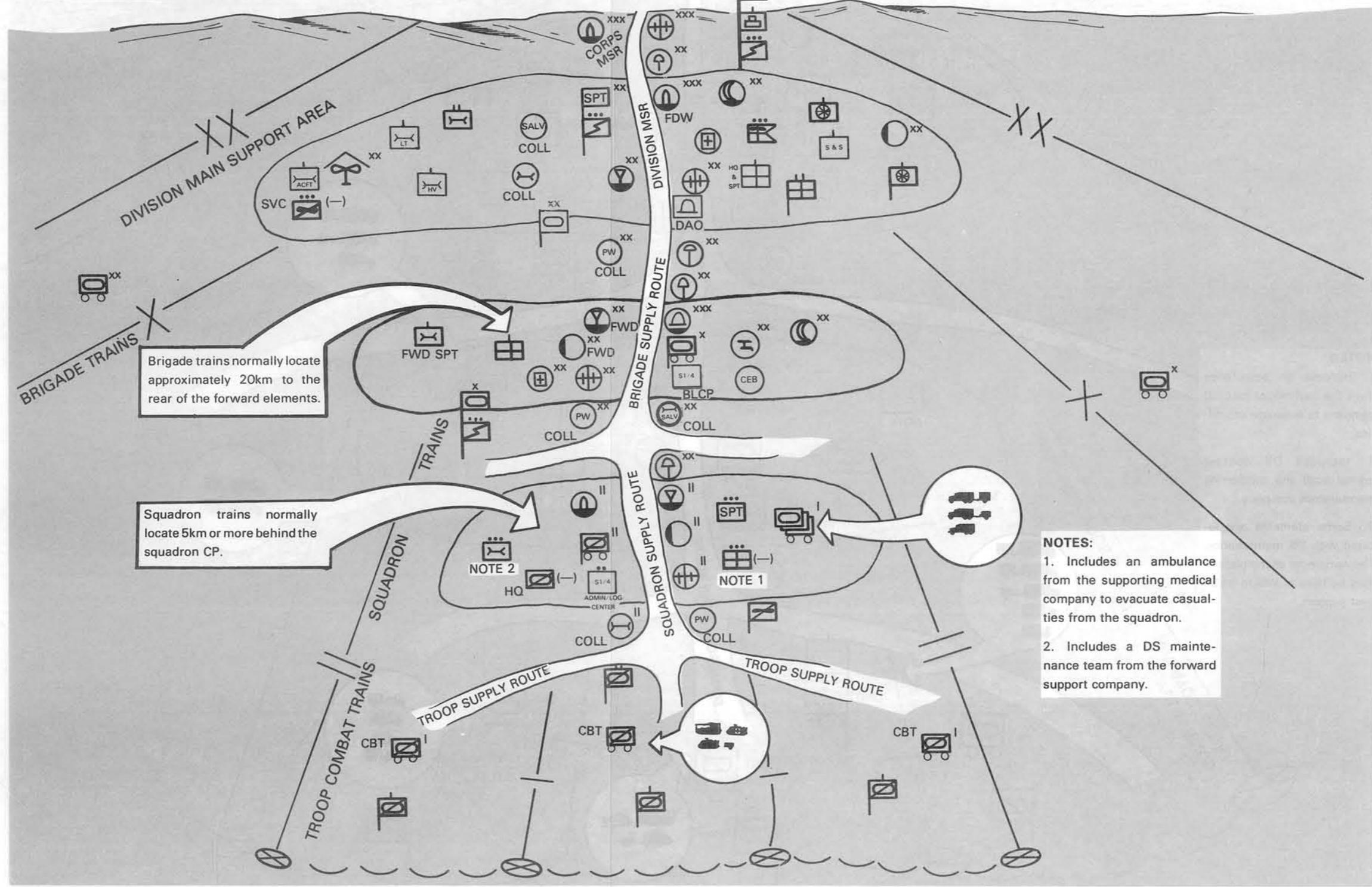
ECHOLONMENT OF TRAINS WITHIN A REGIMENT



NOTES:

1. Includes an ambulance from the regimental medical company to evacuate casualties.
2. Includes DS contact teams from the supporting maintenance company.
3. Some elements are located with DS maintenance. The remainder of the platoon may be here or where it can best support.

ECHOLONMENT OF TRAINS WITHIN A DIVISIONAL ARMORED CAVALRY SQUADRON AND THE DIVISION



Brigade trains normally locate approximately 20km to the rear of the forward elements.

Squadron trains normally locate 5km or more behind the squadron CP.

- NOTES:**
- 1. Includes an ambulance from the supporting medical company to evacuate casualties from the squadron.
 - 2. Includes a DS maintenance team from the forward support company.

SUPPLY

The supply system requisitions, distributes, and stores supplies. Resupply is accomplished by the supply point method, unit distribution method, or a combination of both.

When the *supply point method* is used, units obtain their supplies at a designated supply or distribution point.

When the *unit distribution method* is used, the supporting combat service support unit delivers supplies directly to the using unit. The unit distribution method is frequently used for fast-moving supplies.

Supplies are grouped into 10 major classes:

Class I—Rations and PX Gratuitous Supplies. Combat rations for the feeding of personnel assigned to each vehicle are carried aboard the vehicle. Normal practice is to carry 3-5 days of rations. Crews and other personnel eat when time permits. This is called *crew feeding*. *Unit feeding* is when fresh rations, prepared by the mess section, are distributed to entire units. Basis of issue for class I supplies may be the daily ration request, personnel daily summary, or informal strength accountability reports. Normally, unit needs are determined and consolidated at squadron level by the squadron supply section and forwarded as follows:

- Regimental squadron and the needs of troop-size units not organic to squadron are sent to the regimental logistical control point (RLCP). The RLCP consolidates and forwards the regiment's class I needs to a COSCOM class I supply point.
- Divisional armored and air cavalry

squadron's class I needs are sent to the DISCOM supply and transport battalion.

- Air cavalry squadron (separate) class I needs are sent either to DISCOM or COSCOM.
- Air cavalry squadron (ACCB) class I needs are sent to the supply and transport company of the ACCB support battalion.

Class I is delivered by the supporting COSCOM unit to class I distribution points located in the regimental trains or a DISCOM area. Water is not a class I item, but it is frequently obtained with rations. Water is obtained by troop/company/battery on an as-needed basis. Units use organic transportation to draw water from the nearest water points.

Class II—Supplies and Equipment (Except Cryptographic) Prescribed by TOE, TDA (Clothing, Tool Sets, and Individual Equipment). Requests for class II supplies (except cryptographic) are consolidated and sent to the supporting supply unit. COMSEC logistics and equipment are requested and distributed through cryptographic channels. This is normally coordinated between unit crypto custodian and the crypto custodian at the next higher headquarters.

Class III—Fuels and Lubricants (POL). Requests for fuels and lubricants used in large quantities are based on periodic forecasts and/or demand. Fuel is obtained from the class III supply point designated by COSCOM (in the case of a regiment) or DISCOM (in the case of a divisional squadron). A separate air cavalry squadron obtains

fuel from a class III supply point designated by either COSCOM or DISCOM. In a regiment, class III requests are not usually forwarded through or consolidated by the RLCP. Each squadron- and troop-size unit not part of or attached to a regimental squadron goes directly to the designated class III supply point. Package products, such as grease or graphite, are requisitioned and supplied in the same manner as class II supplies.

An armored cavalry squadron support platoon usually delivers fuel to subordinate units as needed. After delivery, class III vehicles replenish at the supporting class III point and return to the troop or battery trains.

In an air cavalry squadron other than the ACCB, each air cavalry troop and the squadron's headquarters troop use their class III vehicles. The armored cavalry or cavalry troop of an air cavalry squadron receives its class III from the squadron support platoon in the same manner as an armored cavalry troop in an armored cavalry squadron receives its class III.

★ Bulk fuel is usually delivered by COSCOM to the ACCB support area. The ACCB support battalion usually establishes a FARP in the air cavalry squadron trains area to replenish the class III vehicles and aircraft of the air cavalry troops. The air cavalry troops establish FARP's as required to support their operations.

Class IV—Items for Which Allowances Are Not Prescribed (Such As, Construction, Fortification, and Camouflage Materiel). Requests for class IV supplies are submitted through command channels. Class IV is delivered in the same manner as class II. Usually COSCOM delivers supplies as far forward as possible to avoid transshipment.

Class V—Explosives; Ammunition; and Nuclear, Biological, and Chemical (NBC) Materiel. Class V items are issued by supply point distribution, except in the ACCB. The air cavalry squadron of the ACCB requests and receives class V in the same manner as class III. Ammunition vehicles of the squadron support platoons or air cavalry troops and howitzer batteries are used to transport class V from the ammunition supply point (ASP) to the unit. Requests (transportation orders) for class V supplies are prepared by a squadron S4 on request from subordinate units. In a regiment, troop-size units not part of a squadron submit their needs to the RLCP where requests are prepared. Requests are taken by class V trucks to the nearest ASP for approval by the OIC of the ASP or the ammunition officer of the major unit. Normal basis for issue is replenishment of a unit's basic load and the announced ammunition supply rate (ASR).

Class VI—Personal Demand Items (Cameras, Books, Athletic Equipment, etc.). Requests for PX support and items are submitted through S1/G1 channels to the appropriate exchange officer. Class VI items are provided by the appropriate exchange officer either directly to the requesting unit or by a mobile PX.

Class VII—Major End Items (Tanks, Trucks, Helicopters, and Mobile Machine Shops). Daily battle loss reports submitted by units serve as the basis for requesting class VII items. Loss reports are consolidated by the squadron supply section and forwarded in the same way as class III requests, except the ACCB air cavalry squadron forwards requests to the brigade materiel management center (BMMC). In a regiment, troop-size units not organic to a squadron submit daily battle loss reports to the RLCP where requests are prepared and forwarded. Issue of class VII items is the same as for

class II supplies. In some cases, command approval must be obtained. Large end items may be delivered directly to the requesting unit. In emergencies, "float" items may be issued.

Class VIII—Medical Supplies (Including Medical Peculiar Repair Parts). Troops/companies/batteries obtain medical supplies from their supporting medical aid station. A medical aid station in turn obtains supplies from either the appropriate medical clearing station or medical supply, optical, and maintenance (MEDSOM) unit. Resupply is usually accomplished by ground or aerial ambulances returning to units.

Class IX—Repair Parts (Less Medical and Cryptographic) Required for Maintenance Support of All Equipment. A troop/company/battery requests repair parts from the squadron maintenance, communications, and/or AVUM platoons. These platoons requisition or direct exchange parts with the supporting DS maintenance unit. In an armored cavalry regiment, the air

cavalry troop, regimental headquarters and headquarters troop, and troop-size units not organic to a squadron forward requests to the RLCP. The RLCP forwards requests to appropriate COSCOM units in the regimental trains. A squadron's maintenance, communications, and aircraft maintenance platoons receive repair parts from the supporting DS maintenance unit or from a supply point. The regimental headquarters and headquarters troop, air cavalry troop, and troop-size units not organic to a squadron receive repair parts from the COSCOM supply point. If unit distribution is used, the parts are delivered by the supporting maintenance unit.

Class X—Supplies to Support Nonmilitary Programs and Items Not Included in Classes I-IX. Requisitions for items to support nonmilitary programs are forwarded through civil affairs (S5/G5) channels. Requisitions for items not included in other classes of supply are submitted the same way as for class IV supplies. Distribution of both nonmilitary supplies and other supplies, other than classes I-IX, is the same as for class IV supplies.

OTHER COMBAT SERVICE SUPPORT CONSIDERATIONS

MAINTENANCE

Maintenance is a continuing requirement. The state of maintenance reflects a unit's state of discipline, training, and mission readiness. Due to its dispersed operations, a cavalry unit must use onsite

repair whenever possible. This involves the instillation of pride in all crews and the maximum use of contact teams. During tactical operations, vehicles are repaired around the clock.

Categories of Maintenance. In general, maintenance (except aircraft maintenance) is divided into four categories.

- *Organizational maintenance* is performed by the using unit. Repairs, services, and functions are limited to the tools, test equipment, and capabilities of authorized personnel. They are performed according to the appropriate maintenance allocation charts.
- *DS maintenance* is performed by the supporting DS maintenance unit. This category is limited to the repair of end items or unserviceable assemblies on a return-to-user basis. Equipment beyond the repair capability of the DS maintenance unit is evacuated to general support units. The owning unit then requisitions a replacement item.
- *GS maintenance* is performed by the GS maintenance unit supporting the DS maintenance unit. Normally, GS maintenance units repair or overhaul materiel and return it to local area supply operations who place it in ready-to-issue condition.
- *Depot maintenance* facilities repair items beyond the capability of GS maintenance units. The purpose is to retain economically repairable equipment in service.

Repair and Evacuation.

- *Vehicles.* In cavalry, vehicle repair is performed onsite, whenever possible. Recovery and repair are also accomplished at the lowest capable level. If repair is beyond troop/com-

pany/battery capability, it is repaired onsite by the squadron maintenance platoon or DS contact team. If evacuation is required, the vehicle is either towed to the squadron supply route or to a predesignated maintenance collection point. In a regiment, vehicles of troop-size units not organic to a squadron, which can't be repaired by unit personnel, are repaired onsite or evacuated by the supporting DS maintenance unit. In air cavalry squadrons, vehicles beyond the repair capability of the troops are repaired by the supporting DS maintenance contact team onsite, when possible. If evacuation is required, it is performed as discussed on page 8-3.

- *Aircraft.* Aircraft are repaired in the forward area, if possible. If extensive repair is required, they are evacuated to the supporting maintenance facility. Evacuation is the responsibility of the supporting aircraft intermediate maintenance unit. It is accomplished by either air or ground transportation. An air cavalry troop may be authorized to air evacuate LOH's with organic utility helicopters.
- *Signal.* Signal equipment (except cryptographic) beyond the repair capability of a troop/company/battery is evacuated either to the squadron communications platoon or to a maintenance collection point. In a regiment, troop-size units not organic to a squadron evacuate equipment directly to the DS maintenance unit. Repair and evacuation of cryptographic equipment is accomplished through cryptographic channels.

- **Medical.** Medical equipment requiring maintenance is evacuated through medical channels to a medical unit capable of repair.
- **Weapons.** Weapons beyond the repair capability of a troop/company/battery are evacuated to the squadron maintenance platoon for repair or evacuation to the supporting forward support company. Air cavalry squadrons and troop-size units in a regiment not organic to a squadron evacuate items to the supporting DS maintenance facility.
- **Cannibalization.** In combat, a squadron commander is usually given authority to cannibalize damaged equipment which must be evacuated or destroyed. Cannibalization *must not* be used to bypass proper supply procedures or to replenish a unit's basic load of repair parts. Such action distorts the recorded demand and can result in serious shortages.

PERSONNEL SERVICES

Personnel services deal with personnel procurement and management, safety management, personnel replacements, passes, leaves, recreational services, promotions, reductions, awards and decorations, postal services, PX services, religious and morale activities, finance services, legal assistance, welfare assistance, and nonappropriated funds. Most personnel services to cavalry units organic to a division are provided by the adjutant general company and the finance

company of DISCOM. Armored cavalry regiments and separate air cavalry squadrons are normally provided support from COSCOM to perform personnel services. The air cavalry squadron of the ACCB receives personnel support from the headquarters and headquarters company in the brigade support battalion.

MEDICAL SUPPORT

The basic principles of medical treatment and evacuation in cavalry are:

- Rearward medical units evacuate patients from forward medical units.
- Each medical installation sorts and classifies patients for treatment, further evacuation, or return to duty.
- Provide medical support as close to forward elements as time, distance factors, and the tactical situation permit.
- Return maximum number of personnel to duty.
- Evacuate patients no farther to the rear than necessary.

Patients receive emergency medical care from supporting aidmen from the squadron/regimental medical platoon. Patients requiring more treatment are evacuated to the squadron/regimental aid station. The ambulance (tracked or wheeled) from the medical platoon is used for evacuation from a fire swept area. The squadron/regimental aid station performs only essential medical procedures necessary to preserve life, limb, or eyesight, or to stabilize the patient for further evacuation. Patients requiring more treatment are evacuated to the supporting medical unit by evacuation means tailored to the tactical capabilities and organization of the supported unit.

TRANSPORTATION

Additional transport may be required to supplement a cavalry unit for such requirements as:

- Evacuating large numbers of PW's and/or civilians.
- Evacuating large amounts of captured materiel.
- Hauling more than the basic load of class III and IV.
- Moving large amounts of barrier materiel.
- Evacuating large amounts of damaged materiel.

Requests for additional transport by a divisional squadron are made through S4/G4 channels to the division transportation officer. A regiment or separate air cavalry squadron forwards requests for additional transport to the COSCOM movement control center. In the air cavalry squadron of the ACCB, requests for additional transport are forwarded to the brigade materiel management center (BMMC).

BATH AND CLOTHING EXCHANGE SERVICES

Bath and clothing exchange services are normally provided either on an area basis by units of the COSCOM, or by teams in augmentation to a DISCOM. Coordination is accomplished through S4/G4 channels.

QUARTERMASTER GRAVES REGISTRATION

Graves registration involves the collection, identification, evacuation, and security of dead soldiers and their personal effects. Graves registration teams are usually provided to a DISCOM, a regiment, and the ACCB. A separate air cavalry squadron receives a graves registration team from COSCOM. Graves registration is a staff function of S1/G1.

MAPS

A regiment or squadron S2 determines and forwards requirements for maps to the S4 for requisition. In a regiment, each squadron forwards the requests to the regimental S4 for consolidation and forwarding to the corps topographic company. Divisional cavalry squadrons forward requisitions to the supply and transport battalion of DISCOM. In the air cavalry squadron of the ACCB, requests are forwarded to BMMC. Separate air cavalry squadrons forward requests to the corps topographic company. Procedures for issue of maps are the same as for class II supplies.

SUMMARY

Combat service support for cavalry primarily concerns supply, transportation, maintenance, and personnel, medical, and administrative services.

All cavalry units, except platoons, have combat service support elements which provide their immediate needs and interface with the combat service support chain. Combat service support elements usually organize into trains for combat.

Nonorganic combat service support is provided by COSCOM or DISCOM. The ACCB air cavalry squadron receives support from the ACCB support battalion.

The basic principles of cavalry combat service support are command, impetus to the front, maintaining reserves, and planning.

The *supply* system requisitions, distributes, and stores supplies. Resupply is accomplished by the supply point method and/or unit distribution method.

Additional *transportation* to supplement a cavalry unit is available through the COSCOM movement control center.

Maintenance is a continuing requirement for cavalry. During tactical operations, vehicles are repaired around the clock. There are four kinds of maintenance:

- Organizational maintenance is performed by the using unit.
- DS maintenance is performed by the supporting DS maintenance unit.
- GS maintenance is performed by the GS maintenance unit supporting the DS maintenance unit.
- Depot maintenance facilities repair items beyond the capability of GS maintenance units.

Personnel services deal with personnel procurement and management, safety management, personnel replacements, passes, leaves, recreational services, promotions, reductions, awards and decorations, postal services, PX services, religious and morale activities, finance services, legal assistance, welfare assistance, and nonappropriated funds.

Patients receive emergency *medical care* from supporting aidmen from the squadron/regimental medical platoon. Patients requiring more treatment are evacuated to the squadron/regimental aid station.

Administrative services are provided by COSCOM, DISCOM, and ACCB.

**OPERATIONS IN ACTIVE NUCLEAR
CONDITIONS**

The primary purpose of nuclear, biological, and chemical (NBC) weapons is the same as for any other weapon; that is, to produce casualties, destroy or disable equipment, and generally disrupt operations. Chemical and biological agents and nuclear weapons may be used separately or in combination and when used, normally supplement conventional weapons. This chapter describes operations in active nuclear conditions. Operations in active chemical and biological conditions are discussed in appendix I. *No treaty or international agreement exists to prohibit the use of nuclear weapons in warfare. If an enemy has nuclear weapons, cavalry units must be prepared to operate in a nuclear environment at the outbreak of hostilities.* The enemy might use nuclear weapons from the start, or he might attack in a conventional manner and use them later.

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OPERATIONS IN AN ACTIVE NUCLEAR ENVIRONMENT

Cavalry units, because of the dispersion normal to their operations, are usually not good nuclear targets. Exceptions are concentrations of aircraft and regimental or squadron *CP*'s, and a strongpoint of resistance which can't be easily bypassed. Preventive measures center around maintaining as much dispersion as possible, prior training, and frequent relocation of aircraft and regimental and squadron *CP*'s. After nuclear warfare starts, the combat power of cavalry can be considerably increased by using nuclear fires against strongpoints or concentrations of enemy armor moving to contact or contained against an obstacle. *Although nuclear weapons are tremendously destructive, there are defenses against them.* The more each cavalryman understands about what a nuclear weapon can and cannot do, the more effective he will be on the nuclear battlefield, and the greater his chances of survival. The key is training which stresses:

- Discipline.
- Camouflage, cover, and concealment.
- Dispersion.
- Immediate reaction to a nuclear attack warning or a nuclear attack itself.
- Tactics and movement techniques discussed later in this manual.

- Being prepared to conduct area damage control operations.
- Being prepared to conduct radiological monitoring and survey.
- Knowing how to use a nuclear weapon to gain a tactical advantage.
- Knowing how and being prepared to implement decontamination procedures.

Cavalry can expect to fight on the nuclear battlefield essentially in the same manner as on the conventional battlefield. It should be expected that combat service support and communications will be disrupted more than on the conventional battlefield and that cavalry units may be isolated for extended periods. The larger force of which the cavalry unit is a part concentrates forces only when absolutely necessary, to avoid creating a lucrative nuclear target. However, the tactics used by cavalry are the same it uses on the conventional battlefield; that is, full use of cover and concealment, overwatch, and suppression. For these reasons, this chapter describes characteristics of nuclear weapons, their effects on equipment and personnel, and protective measures to be taken by cavalry during operations in active nuclear conditions. First, however, it is necessary to describe what to expect from the enemy during nuclear operations.

THE ENEMY IN NUCLEAR BATTLE

Threat forces with nuclear weapons plan for their use in both offensive and defensive operations as the basis of all fire planning. Nuclear attacks are combined and coordinat-

ed with conventional fires and air attacks, and exploited rapidly by ground forces. Nuclear weapons may also be used with chemical and/or biological agents.

Offense. In the attack, Threat tactics are similar to those used on the conventional battlefield; that is, the enemy attempts to overwhelm the defense with the weight and speed of his attack, both day and night. The attack is on a broad front, with formations moving on independent axes, accepting the risk of open flanks. To minimize this danger, the enemy will neutralize ground dominating his axes of advance by nuclear strikes.

To avoid presenting worthwhile nuclear targets, the enemy disperses his forces and concentrates only for short periods. He may close with the defender not only to destroy him, but also to ensure that the defender can't

use nuclear weapons without endangering his own forces. Primary nuclear targets for attacking Threat forces are command control systems, logistics systems, nuclear delivery means, and large concentrations of troops.

Defense. In the defense, Threat forces fight on the nuclear battlefield the same as they do on the conventional battlefield. The only difference is that defending Threat forces are more widely dispersed on the nuclear battlefield than on the nonnuclear battlefield. Primary nuclear targets for defending Threat forces are the same as when they are attacking.

CHARACTERISTICS OF NUCLEAR WEAPONS ———

Blast, thermal radiation (heat and light), and nuclear radiation are hazards from nuclear weapons. Except for nuclear radiation, they are similar to high explosives, but a nuclear detonation is many times more powerful than TNT bombs. Nuclear weapons produce two kinds of nuclear radiation hazards: *initial radiation* which is given off during detonation, and *residual radiation* which remains on or falls back to earth after detonation. Residual radiation comes from fallout from surface or subsurface bursts. The explosion lifts tremendous quantities of earth particles into the nuclear cloud formed at the time of detonation. This highly radioactive material eventually falls back to earth around and downwind from ground zero.

■ *Effects on Personnel.*

- High winds, flying debris, and collapsing shelters or foxholes cause blast injuries.
- Thermal radiation causes burns.
- Nuclear radiation causes sickness or death.

- The bright flash of light causes dazzle (temporary loss or reduction of vision). The flash of light can also cause permanent damage to the eyes of soldiers looking directly at the fireball at the time of detonation.

■ *Effects on Equipment.*

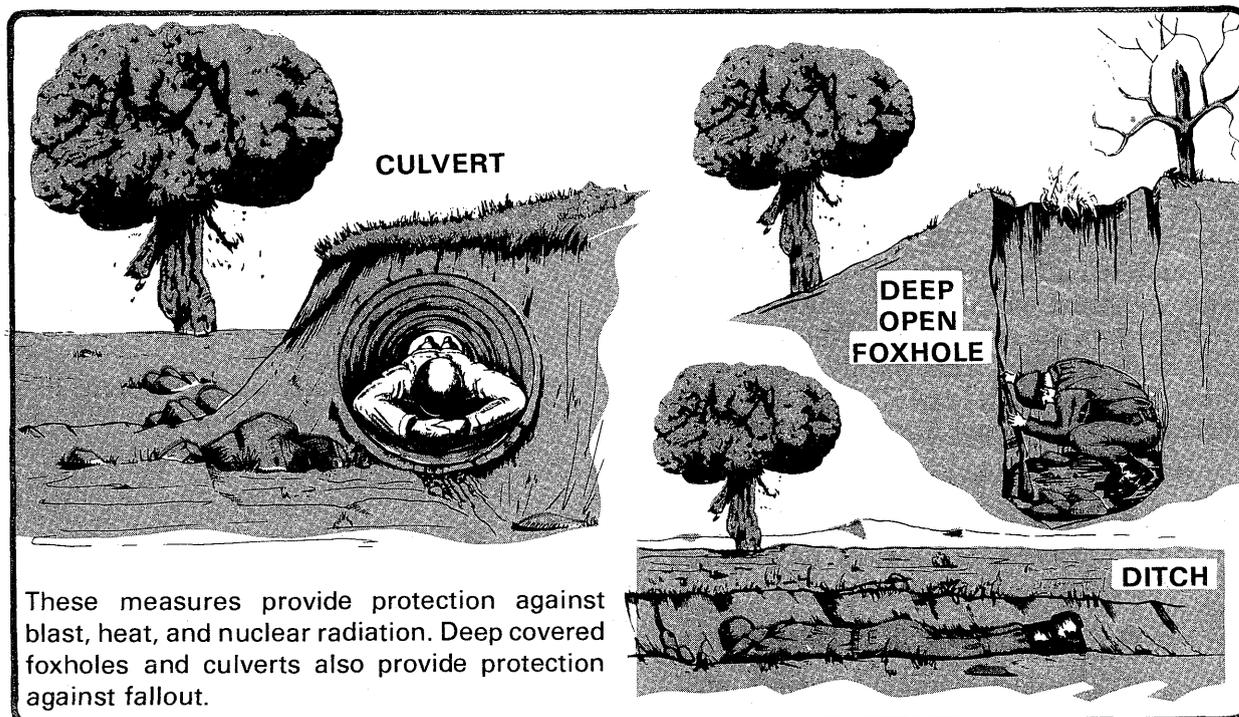
- Blast damage results from the violent dragging and tumbling effect caused by high winds. The blast wave can also crush sealed or partially sealed objects like barrels, fuel tanks, or helicopters.
- Heat ignites dry wood, canvas, and other flammable materials.
- The electromagnetic pulse may damage unprotected C-E equipment.

PROTECTIVE MEASURES

As stated before, a nuclear weapon, although a tremendously destructive device, is not a weapon against which there is no defense. The more each soldier knows about the capabilities of nuclear weapons, the more effective he will be on the nuclear battlefield, and the greater his chances of survival. Training must stress the interrelated importance of discipline, camouflage, cover, concealment, dispersion, and immediate reaction for battlefield survival.

- A tank provides protection roughly equivalent to that of a 4-foot deep foxhole with overhead cover. Tank crews may have to operate on the nuclear battlefield with hatches closed.
- Armored personnel carriers and scout vehicles provide about the same protection as a tank, except to a lesser degree against nuclear radiation.

Hazard from fallout may last for days and cover many square miles. Since nuclear radiation can't be detected by the physical senses, cavalry units have RADIAC instruments to measure radiation. When operating on the nuclear battlefield, radiological monitoring is included in all reconnaissance and intelligence activities according to procedures established by higher levels of command. After residual radiation has been detected by radiological monitoring, cavalry continues its mission, and if possible, relocates to minimize radiation exposure. If it is necessary to remain in the fallout area, armored vehicles button up completely with the crews inside. Shelters have overhead cover. The period of time a unit may remain in a contaminated area depends on the intensity of radiation and protection available. Time spent away from cover must be minimized. Once fallout has stopped, radioactive dust on shelters and vehicles must be brushed away, and decontamination is performed as soon as possible.



These measures provide protection against blast, heat, and nuclear radiation. Deep covered foxholes and culverts also provide protection against fallout.

Operations on a nuclear battlefield require that individual protective measures be performed without detailed direction. Unit standing operating procedures must include actions to take during both friendly and enemy use of nuclear weapons:

- *Enemy Strike.*
 - Carry no unnecessary items.
 - Secure equipment and ammunition.
 - Take advantage of natural shielding.

- *Friendly Strike.*
 - Orient your vehicle to face ground zero.
 - Tie down the antenna.
 - Close and lock hatches.
 - Traverse turret to rear and lock turret traversing mechanism.
 - Disconnect the antenna lead from the face of the radio set.

PROTECTIVE MEASURES FOR MOUNTED PERSONNEL

For detailed information concerning protective measures for mounted personnel against the nuclear Threat, see FM 21-40, *Chemical, Biological, Radiological and Nuclear Defense*.

For detailed information concerning decontamination procedures for mounted personnel, see TM 3-220, *CBR Decontamination*. A commander and a staff officer at regimental or squadron level should also be familiar with FM 101-31-1, FM 101-31-2, and FM 101-31-3 concerning nuclear weapons employment, doctrine, procedures, and effects.

SUMMARY

Although nuclear weapons are tremendously destructive, there are defenses against them. The key to survival in a nuclear environment is training which stresses discipline, camouflage, cover, concealment, dispersion, and immediate reaction.

Hazards from nuclear weapons are blast, thermal radiation (heat and light), and nuclear radiation. There are two kinds of nuclear radiation hazards: *initial radiation* which is given off during detonation, and *residual radiation* which remains on or falls back to earth after detonation.

Hazard from fallout may last for days and cover many square miles. Since nuclear radiation can't be detected by the physical senses, cavalry units have RADIAC instruments to measure radiation. Once fallout stops, radioactive dust on shelters and vehicles must be brushed away, and decontamination must be performed as soon as possible.

REFERENCES

INTERNATIONAL AGREEMENTS

	NATO STANAG	ABCA SOLOG	CENTO STANAG	SEATO SEASTAG
Land Minefields.	2001	1R		
Marking of Contaminated or Dangerous Land Areas.	2002	124		
Patrol Reports by Army Forces.	2003	6R		
Toxic Alarm System.	2004	26		
Bombing, Shelling & Mortaring Reports.	2008	5R2		
Bridge Classification Markings.	2010	24		
Operation Orders.	2014	17R		
Route Classification.	2015			
Military Symbols.	219			
Operational Situation Reports.	2020	16R		2020
Intelligence Reports.	2022	2R2		2022
Method of Describing Ground Location, Areas, and Boundaries.	2029			
Interrogation of Prisoners of War.	2033	69		
Techniques of Land Minefield Laying and Recording.	2036	18R		
Operational Road Movement Orders, Tables, and Graphs.	2041	51		
Standard Procedures for Establishing Communications.	2043	15R2		
Standard Procedures for Dealing with Prisoners of War.	2044	22R		
Rear Area Security and Rear Area Damage Control.	2079	48R	2079	2079
Battlefield Illumination.	2088	108	2088	

	NATO STANAG	ABCA SOLOG	CENTO STANAG	SEATO SEASTAG
Sign Posting of Radiologically Contaminated Areas.	2094	111		
Reporting Engineer Data in the Field.	2096	107		
Fire Coordination in the Land/ Air Battle.	2099		2099	2099
Principles and Procedures for Establishing Liaison.	2101	104		
Friendly Nuclear Strike Warning to Armed Forces Operating on Land.	2104	130		
Telecommunication Symbols.	2109			2112
Radiological Survey.	2112			2112
Offensive Air Support Operations.	2134			
Definitions and Regulations for Military.	2154			
Aircraft Marshalling.	3117			
General Rules Covering the Transport of Loads by Helicopter.	3468			

RECORDS AND REPORTS

In cavalry, reports are the primary means of providing information upon which plans and decisions are based. Reports must be accurate, timely, and complete. Negative information (THERE IS NO ENEMY AT . . .) is frequently as important as positive information. Standard procedures save time, contribute to completeness, and reduce confusion. Reports serve as the primary record of operational events.

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TYPES OF REPORTS

Cavalry units are primarily concerned with three broad categories of reports:

- Intelligence; counterfire; and nuclear, biological, and chemical warfare (NBC) reports.
- Operation reports.
- Administrative reports.

TRANSMISSION AND SECURITY

Means of transmitting reports and safeguarding information contained therein varies from theater to theater, depending on equipment available and local requirements. Care must be taken to encrypt information useful to the enemy transmitted over unsecure means.

INTELLIGENCE, COUNTERFIRE, AND NBC REPORTS

SPOT REPORT (SPOTREP)

A SPOTREP reports enemy and area information. It is generally used by company troop, battery, platoon, team, and below. Normally, the code words (Alpha, Bravo, etc.) are not used except when numerous reports are transmitted between radiotelephone operators.

SPOTREP FOR FORD, FERRY, OR OTHER CROSSING SITE

ALFA: Who is observer or source?*

BRAVO: What?

Length of crossing?

Width (usable)?

Bottom material?

Depth of water level (present, maximum and minimum)?

Speed of current?

Banks of approaches (material, height, and slope)?

Vessels and facilities (capacity, etc.)?

CHARLIE: Where and when?***

DELTA: Condition (of bottom, banks, etc.)?

Bypass (Add complete report if required.)?

ECHO: What are you doing?

EXAMPLE

(Squadron S2) THIS IS (Troop Commander).

(SPOTREP)

ALFA: (Adjacent unit contact party)

BRAVO: FORD. SIX-FIVE METERS LONG. ONE-TWO METERS WIDE. ROCK BOTTOM. ONE-HALF METER DEEP. CURRENT SLOW. APPROACHES TWO-ZERO PERCENT GRAVEL BOTH SIDES.

CHARLIE: FROM CHECKPOINT TWO-NINER DOWN THREE-HUNDRED. RIGHT ONE-FIVE-ZERO. TIME: TWO-FIVE-ZERO-SIX-ZERO-ZERO.

DELTA: GOOD CONDITION. NO ENEMY.

ECHO: CONTINUING MISSION. OVER.

SPOTREP FOR
BRIDGE, OVERPASS, CULVERT,
OR CAUSEWAY

ALFA: Who is observer or source?*

BRAVO: What?

Overall length?

Width of roadway?

Type and material?

Spans (number and length)?

Class (compute)?

Clearances (overhead and horizontal)?

CHARLIE: Where and when?***

DELTA: Condition?

Bypass (Add complete report if required.)?

ECHO: What are you doing?

EXAMPLE

(Troop Commander) THIS IS (Platoon Leader).

(SPOTREP)

ALFA: (Engineer Reconnaissance Team).

BRAVO: BRIDGE. ONE-EIGHT METERS LONG. SIX METERS WIDE. CONCRETE SLAB. CLASS SEVEN-TWO. THREE-SIX METER SPANS. CLEARANCES UNLIMITED.

CHARLIE: GRID MIKE-ALFA-EIGHT-SIX-SIX-NINER-SIX-FIVE.

TIME: TWO-FIVE-ONE-ZERO-ZERO-ZERO.

DELTA: GOOD CONDITION. NO BYPASS WITHIN FIVE-HUNDRED METERS. NO ENEMY.

ECHO: RETURNING TO YOUR LOCATION WITH MORE INFORMATION. OVER.

*Source: The actual origin of information, such as prisoners of war, local civilians, documents, etc.

**Where: Includes from-to distance information for route or trace of area; enemy locations sent in grid coordinates *in the clear* except behind friendly lines information locating friendly units or activities in code.

**When: State either time (date-time group) of observation or duration (from-to) of activity.

SPOTREP FOR
HIGHWAY, ROAD, TRAIL, OR
CROSSCOUNTRY TRACE

ALFA: Who is observer or source?

BRAVO: What?

Distance?

Width?

Surface material?

Alignment (bad curves or grades)?

Foundation (stable or unstable)?

CHARLIE: Where and when?

DELTA: Condition (of surface, shoulders, and drainage)?

ECHO: What are you doing?

EXAMPLE

(Platoon Leader) THIS IS (Team A).

(SPOTREP)

ALFA: (Team A).

BRAVO: ROAD FIVE METERS WIDE. CONCRETE SURFACE.

CHARLIE: FROM CHECKPOINT ONE-NINER TO CHECKPOINT SIX-ONE.
TIME: TWO-FIVE-ZERO-NINER-FIVE-ZERO.

DELTA: GOOD CONDITION. SUITABLE FOR USE BY FIRST BRIGADE. NO ENEMY CONTACT.

ECHO: APPLYING SUPPRESSIVE FIRES AND MANEUVERING TO ATTACK FROM FLANK.
OVER.

SPOTREP FOR
ENEMY INFORMATION

ALFA: Who is observer or source?

BRAVO: What?

How many?

How equipped?

CHARLIE: Where and when?

DELTA: Doing what (If moving, give direction, speed, and altitude.)?

ECHO: What are you doing?

EXAMPLE

(Troop Commander) THIS IS (Platoon Leader).

(SPOTREP)

ALFA: (Platoon Leader).

BRAVO: FIVE AGGRESSORS WITH MACHINEGUN.

CHARLIE: GRID MIKE-BRAVO-NINER-EIGHT-FIVE-FIVE-NINER-ONE.

TIME: TWO-FIVE-ONE-SEVEN-FOUR-TWO.

DELTA: DUG IN. FIRING.

ECHO: APPLYING SUPPRESSIVE FIRES AND MANEUVERING TO ATTACK FROM FLANK.
OVER.

**ENEMY SHELLING, BOMBING; OR NUCLEAR, BIOLOGICAL,
AND CHEMICAL (NBC) WARFARE ACTIVITY REPORT**

A report generally used by company, troop, battery, platoon, team, and below to report enemy shelling, bombing, and NBC warfare activity is known as a SHELREP, BOMREP, and NBC-1, respectively.



STANDARD FORMAT

HEADING: Precedence.
Date/time (local or Zulu time, state which)
Security Classification
From
To
Type of Report

ALFA: Strike serial number if known.

BRAVO: Position of observer (UTM or place).

CHARLIE: Direction measured clockwise from grid or magnetic north (state which) of the attack from observer (degrees or mils state which).

DELTA: Date/time of detonation or date/time attack started (local or Zulu time, state which).

ECHO: Illumination time (seconds) or time attack ended (local or Zulu, state which).

FOXTROT: Location of attack (UTM or place) or area attacked (actual/estimated, state which).

GOLF: Means of delivery, if known.

HOTEL: Type of burst-air, surface, or unknown (state which)—including height, if known (chemical or biological) or type of attack (Chemical or biological).

INDIA: Type and number of munitions or aircraft (state which)

JULIET: Flash-to-bang time (seconds).

KILO: Crater present or absent and diameter (meters), if known.

LIMA: Stabilized cloud-top angle or cloud-bottom angle (state which) or cloud-top height or cloud-bottom height (state which) measured at H + 10 minutes (degrees, mils, meters, or feet, state which).

MIKE: Stabilized cloud-top angle or cloud-bottom angle (state which) or cloud-top height (state which) measured at H + 10 minutes (degrees, mils, meters, or feet, state which).

SIERRA: Date/time of reading or date/time contamination (chemical or biological initially detected (local or Zulu time, state which).

X-RAY: Located area of contamination (UTM).

EXAMPLE:

(Squadron S2) THIS IS (ALFA Troop Commander).

NBC-1 (Nuclear).

BRAVO: LB 196400.

CHARLIE: GRID 060 Degrees.

DELTA: Z01405 AULU.

HOTEL: SURFACE.

JULIET: 60.

LIMA: 280 MILS.

SIERRA: 201500 (LOCAL)

X-RAY: LB 208303
LB 20208308
LB 203302
LB 203308.

Note: The item "Type of Report," and letter item D, H, and either B and C or F must always be reported; other items are optional.

RADIATION DOSE-RATE MEASUREMENT REPORT

Radiological monitoring or survey parties report data as quickly as possible. Radiological monitoring information is normally reported through command channels. Radiological survey data is reported as

directed. DA Form 1971-1-R, "Route Technique or Course Leg Technique (Ground and Aerial Survey)" is used for recording information collected (FM 3-12).

PATROL REPORT

Information collected by cavalry elements is normally submitted by SPOTREP's as events occur. The duration and activity of a patrol by aerorifle elements

may make a debriefing desirable. In such case, a debriefing report format helps ensure all information obtained is reported by the patrol.

PATROL BRIEFING REPORT

(Omit Items Not Applicable.)

(DESIGNATION OF PATROL)

(DATE)

TO:

MAPS:

A. SIZE AND COMPOSITION OF PATROL:

B. TASK:

C. TIME OF DEPARTURE:

D. TIME OF RETURN:

E. ROUTES (OUT AND BACK):

F. TERRAIN:

Description of the terrain—dry, swampy, jungle, thickly wooded, high brush, rocky, deepness of ravines and draws; condition of bridges as to type, size, strength, and their effect on the movement of armor and wheeled vehicles.

G. ENEMY:

Strength, disposition, condition of defenses, equipment, weapons, attitude, morale, exact location, movements, and any shift in dispositions. Time activity was observed and coordinates where activity occurred.

H. ANY MAP CORRECTIONS:

I. MISCELLANEOUS INFORMATION:

Including aspects of nuclear, biological, and chemical warfare.

J. RESULTS OF ENCOUNTERS WITH ENEMY:

Enemy prisoners and dispositions, identification, enemy casualties, and captured documents and equipment.

K. CONDITION OF PATROL, INCLUDING DISPOSITION OF ANY DEAD OR WOUNDED:

L. CONCLUSIONS AND RECOMMENDATIONS:

Including to what extent the mission was accomplished and recommendations as to patrol equipment and tactics.

Signature	Grade/Rank	Organization/Unit of Patrol Leader
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M. ADDITIONAL REMARKS BY DEBRIEFER:

Signature	Grade/Rank	Organization/Unit of Debriefer	Time
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N. DISTRIBUTION:

ROUTE, BRIDGE, TUNNEL, FORD, OR FERRY REPORT

In cavalry, a detailed report concerning a route, bridge, tunnel, ford, or ferry is generally completed at troop or squadron using information obtained from SPOTREP's and/

or reports prepared by supporting engineers. DA Forms 1248, 1249, and 1250 may be used. For additional information, see FM 5-34 and FM 5-36.

INTELLIGENCE SUMMARY (INTSUM)

An INTSUM is a summary of significant information obtained by a squadron or regiment for a specific period. The S2 prepares and distributes it to higher, lower, and adjacent units (FM 30-5).

- c. Potential targets for nuclear weapons.
- d. Nuclear activity.
- e. CB activity.
- f. Air activity.
- g. Other (new tactics, counterintelligence, etc.).
- 4. Personnel and equipment losses.
 - a. Personnel (KIA and WIA).
 - b. Prisoners of war.
 - c. Equipment destroyed or captured.
- 5. New obstacles and barriers.
- 6. Administrative activities.
- 7. New identifications.
 - a. Units.
 - b. Personalities.

FORMAT

(Omit items not applicable.)

- 1. Issuing unit (always included).
- 2. Time and date of issue (always included).
- 3. Summary of enemy activity for period.
 - a. Ground activity.
 - b. Trace of forward elements.

8. Enemy movements.
9. Estimation of number and types of vehicles.
10. Weather and terrain conditions.
11. Brief discussion of capabilities and vulnerabilities (always included).
12. Conclusions (always included).

EXAMPLE

(Regiment S2) THIS IS (Second Squadron).

ONE: TWO-SLASH-TWO-ZERO-ONE
CAV.
TWO: ZERO-TWO-ONE-SIX-ZERO-ZERO-ALFA.
THREE ALFA: PLATOON STRENGTH PROBING ATTACKS AT MIKE-BRAVO-TWO-ONE-SEVEN-NINER-NINER-TWO.
TIME: ONE-FOUR-FIVE-ZERO AND AT MIKE-BRAVO-TWO-TWO-ONE-NINER-NINER-THREE.
TIME: ONE-FIVE-ONE-FIVE.
THREE BRAVO: NO CHANGE.
THREE DELTA: TWO JET-FIGHTER-BOMBER AIRCRAFT ATTACKED TANK COMPANY AT MIKE BRAVO-TWO- ONE-ZERO-NINER-NINER-FIVE.

TIME: ONE-FOUR-FIVE-FIVE WITH CANNON AND ROCKETS.
FOUR ALFA: ESTIMATE ONE-ZERO KILLED AND TWO-ZERO WOUNDED.
FOUR CHARLIE: TWO BMP's WITH SAGGER'S AND ONE T-62 TANK DESTROYED.
SIX: SUSPECTED SUPPLY POINT AT MIKE-BRAVO-TWO-SIX-EIGHT-NINER-NINER-TWO.
EIGHT: ESTIMATED REINFORCED TANK COMPANY MOVING NORTH ON ROAD FROM VICINITY MIKE-BRAVO-TWO-SEVEN-TWO-NINER-NINER-EIGHT AT ONE-TWO KILOMETERS PER HOUR, ESTIMATED TIME: ONE-FIVE-TWO-FIVE.
NINER: NO CHANGE.
ONE-ZERO: NO CHANGE.
ONE-ONE: ENEMY CAPABLE OF ATTACKING IN REINFORCED COMPANY STRENGTH IN SECTOR BEFORE ONE-NINER-ZERO-ZERO.
ONE-TWO: EXPECT REINFORCED COMPANY STRENGTH ATTACK IN SECTOR BEFORE ONE-NINER-ZERO-ZERO AND INCREASING PRESSURE THROUGHOUT NIGHT.

OPERATION REPORTS

SITUATION/STATUS REPORT (STATREP)

A STATREP is submitted by company/troop/battery to report their tactical situation and status. It is submitted after significant events and as otherwise specified by a squadron. A fragmentary report is submitted when the entire report is not required.

FORMAT

Report as of: (DTG)

ALFA*: Reporting unit (call sign).
BRAVO*: Location(s).

Company/troop report locations of immediate subordinate elements, command post, airstrip/heliport, trains, and observation post and radar site locations and primary sectors.

Platoons report only center of mass or front line trace and observation post locations.

CHARLIE*: Activity.

Brief summary of activity since last report.

DELTA: Personnel***

Losses since: (DTG) (in code):

DELTA ONE: Killed in action.

DELTA TWO: Wounded in action.

DELTA THREE: Missing in action.

DELTA FOUR: Captured.

DELTA FIVE: Nonbattle casualties.

DELTA SIX: Administrative losses.

ECHO: Ammunition.

Total ammunition required to replenish basic load (in code).

FOXTROT: Fuel.

Total fuel required in gallons by type (in code).

GOLF: Equipment.

Total vehicles and designated major items short; including all items not immediately available for action** (in code).

HOTEL: Remarks.

Any additional information required to complete the situation/status picture. Omit if not required.

*Indicates items of fragmentary report.

**See unit SOP for detailed method of reporting.

***For initial report upon attachment *only*, send complete PDS.

EXAMPLE

(Company Commander) THIS IS (First Platoon Leader).

(STATREP) TWO-SEVEN-ONE-FOUR-ZERO-ZERO.

ALFA: (First Platoon).

BRAVO: GRID MIKE-BRAVO-SIX-SEVEN-FIVE-TWO-TWO-THREE.

CHARLIE: CONTINUING ATTACK.

HOTEL: TWO-PAPA-WHISKEY LEFT

GUARDED AT CHECKPOINT TWO-TWO.
OVER.

(Squadron Operations) THIS IS (Charlie Troop Commander).

(STATREP) ONE-FOUR-ZERO-FOUR-ZERO-ZERO.

ALFA: (CHARLIE TROOP).

BRAVO: (FIRST PLATOON) GRID MIKE-ALFA-ONE-EIGHT-TWO-FIVE-SIX-

EIGHT TO ONE-EIGHT-SEVEN-FIVE-SIX-SEVEN/(SECOND PLATOON)

ONE-EIGHT-SEVEN-FIVE-SIX-SEVEN TO ONE-EIGHT-NINE-FIVE-SIX-

TWO/(THIRD PLATOON) ONE-NINE-ZERO-FIVE-FIVE-NINE TO ONE-

NINE-TWO-FIVE-FIVE/(COMMAND POST ONE-EIGHT-FOUR-FIVE-SIX-

NINE (OBSERVATION POST TWO) TWO-ZERO-EIGHT-FIVE-FIVE-NINE/

RADAR ONE-EIGHT-EIGHT-FIVE-SIX-THREE PRIMARY SECTOR AZIMUTH

ONE-ONE-EIGHT-ZERO MILS.

CHARLIE: ALL ELEMENTS CLOSED IN POSITION ONE-FOUR-ZERO-FOUR-

FOUR-EIGHT RECEIVING SPORADIC ARTILLERY FIRE.

DELTA: ONE-THREE-ONE-EIGHT-ZERO-ZERO.

DELTA TWO: ONE.

DELTA FIVE: ONE.

ECHO: NEGATIVE.

FOXTROT: ONE-TWO-HUNDRED DIESEL FIVE-HUNDRED MOGAS.

GOLF: ONE ONE-QUARTER-TON TRUCK.

HOTEL: IN CONTACT WITH BRAVO TROOP AT CONTACT POINT FIVE-NINE.

(SHELREP) FOLLOWS, WAIT.

OPERATIONAL SITUATION REPORT (SITREP)

A SITREP summarizing the tactical situation for a specific period is submitted to higher headquarters by a squadron or regiment (FM 101-5).

COMMAND REPORT

A command report is prepared and submitted as required by squadron and regiment for historical purposes (FM 101-5).

MINEFIELD REPORT

All cavalry units must report:

- Intention to lay mines.
- Initiation of laying.
- Completion of laying.
- Enemy mine warfare activity.

Minefields, when established by cavalry units, must be reported on DA Form 1355. This is usually done by squadron or regiment. Most often, cavalry units establish hasty protective minefields. A DA Form 1355-1 is prepared and submitted by each platoon. For more information see FM 5-34.

ADMINISTRATIVE REPORTS

Administrative reports are submitted as specified by higher headquarters. Most of the information required comes from company/troop/battery STATREP's (paragraph B-10).

STANDARDIZED INSTALLATION AND DIVISIONAL PERSONNEL REPORT SYSTEM (SIDPERS)

Personnel actions and strength accountability are accomplished according to SIDPERS. Preparation of DA Forms 2475-2, 3728, and 4187 at company/troop/battery level is prescribed in volume I of the *SIDPERS User's Manual*.

CASUALTY REPORT

Casualty reports are prepared by the casualty branch of the supporting personnel service unit normally located at division and regiment. Data concerning circumstances are forwarded to the casualty branch as prescribed.

PERSONNEL DAILY SUMMARY (PDS)

During combat operations, SIDPERS may not provide cavalry units timely personnel data. Regiment and squadron usually make a personnel daily summary (PDS) of their personnel status as of a certain time. It is prepared mostly from information received in STATREP's (FM 101-5).

COMBAT VEHICLE STATUS REPORT

A combat vehicle status report is usually submitted daily by a squadron. It is normally prepared from information in STATREP's (FM 101-5).

PERIODIC LOGISTICS REPORT

A periodic logistics report is submitted by squadron and/or regiment to show their logistics status (FM 101-5).

TACTICAL ROAD MARCH AND ASSEMBLY AREA

A combat unit moving to contact moves along the terrain. This is done using traveling, traveling overwatch, and bounding overwatch as described in chapter 4. At times, a unit moves from one assembly area to another to position itself for future combat operations. These movements are called tactical road marches. A tactical road march differs from a march to contact in that:

- It is conducted at a prescribed speed.
- A prescribed interval is maintained between vehicles.
- The primary consideration is the rapid movement of units.

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PLANNING

Movement planning consists of three steps which may be accomplished jointly and continuously. These steps are: determination of requirements for the move, analysis of organic and nonorganic movement capabilities, and establishment of unit movement priorities. The following factors are considered in movement planning:

- Organization of units and their equipment.
- Assembly of units and transportation means.

- Packing and marking of equipment and loading personnel and equipment.
- Control, coordination, and combat service support for the movement and arrival at the destination.
- Assembly of units and equipment at the destination.
- Security measures before, during, and after the movement.
- Enemy situation, geographic conditions, and weather.

TRAINING

The success or failure of a combat mission could very well depend upon the ability of units to move rapidly over great distances. Training is necessary to test and check unit loading plans, to develop and improve standing operating procedures

(SOP), to prevent wasted time and effort, and to maintain operational efficiency. Cavalry units should integrate tactical road marching and occupation of assembly areas into other types of training whenever possible.

STANDING OPERATING PROCEDURES

SOP's for tactical marches and occupation of assembly areas are usually written in the troop and squadron. A platoon SOP conforms to that of its parent unit and is seldom reduced to writing. Some of the routine items that may be included in the SOP are loading plans; composition of serials and march units; control measures; rates of march under various conditions; formations; communications; security measures; time intervals and distances; location of the command post during the march; schedule, duration, and tasks during halts; organiza-

tion of quartering and reconnaissance parties; and reporting instructions. Like vehicles should have the same stowage plan for equipment and ammunition. This prevents confusion during combat and recovery operations when personnel may have to move from one vehicle to another. Sectors for each vehicular mounted weapon should be prescribed throughout the column. Orders for a particular movement may modify or amplify the SOP to fit the requirements of a particular situation.

TACTICAL ROAD MARCH

This section provides guidance for planning and executing a tactical road march. The techniques and procedures discussed

may be adapted to meet the needs of any situation.

PREPARING FOR A TACTICAL ROAD MARCH

Movement Considerations. The basic considerations in planning any tactical road march are: The mission and tactical situation; what is to be moved (troops and equipment); and the type, number, and characteristics of vehicles available for the move. The success of a tactical road march depends upon the thoroughness with which it is planned.

March Planning Sequence. When preparing for a tactical road march, follow this sequence:

- Prepare and issue the warning order (issued orally at troop level and below).
- Prepare an estimate of the situation.
- Organize and dispatch reconnaissance and quartering parties (should follow SOP).
- Prepare detailed movement plans:
 - Organize the march.
 - Review reconnaissance information.
 - Compute march data.
 - Prepare a movement table.
- Prepare and issue the complete march order (issued orally at troop and below).

Warning Order. The commander issues a warning order for a movement as early as possible in order to give his units maximum time for preparation. The warning order alerts the units and should indicate the general purpose of the operation, the destination, and the approximate departure time. Fragmentary orders should follow the warning order to provide as much information as secrecy limitations permit.

Estimate of the Situation. The purpose of the estimate of the situation is to find the best way to accomplish the move. The estimator considers all circumstances affecting the move and analyzes and compares possible courses of action.

The estimate is as thorough as time and circumstances permit. The estimate should result in a recommendation (staff officer) or decision (commander) on the route (scheme of maneuver) and the organization of the march column.

Route Reconnaissance. A route reconnaissance is conducted to confirm and supplement data obtained from map studies, higher headquarters, and air reconnaissance. Speed of movement is often closely related to accuracy of reconnaissance.

Route reconnaissance is performed to determine the capacities of underpasses and bridges; locate culverts, ferries, and fords; and identify critical points and obstacles. Prior location of critical points can prevent congestion and aid security.

Instructions to the route reconnaissance party usually state the nature and extent of information required and the time and place the report is to be submitted.

Quartering Party. A quartering party should precede the main body whenever possible. A squadron quartering party is normally composed of a quartering officer (S1 or headquarters troop commander), a security element if the tactical situation requires, communications and medical personnel, and the necessary staff section and subordinate representatives. Its purpose is to reconnoiter the new area, make necessary improvements on entrances and routes, and guide march elements into the new area. The commander

of the quartering party must be told the route, order of march, and estimated time of arrival of the main body. A troop quartering party is usually led by the first sergeant and consists of one or two representatives from each platoon and the troop headquarters.

It is desirable that the same soldiers be used regularly on quartering party assignments and be trained in mine detection and removal. The quartering party should have sufficient guides and markers, and necessary pioneer tools to improve the new area. As march elements clear the release point, quartering party members guide them to selected or designated assembly areas.

MARCH COLUMNS

A tactical march may be conducted in close column, open column, or by infiltration. March techniques vary depending on the situation.

Close Column. Vehicles are about 25m apart during daylight. At night, vehicles are spaced so that the driver can see two lights in the blackout marker of the vehicle ahead.

Close column is normally used for marches during darkness, under blackout driving conditions. This method of marching takes maximum advantage of the traffic capacity of the routes, but provides little dispersion.

Normally, vehicle density is about 30 vehicles per kilometer along the route of march.

Open Column. Distance between vehicles is increased to provide greater dispersion and varies from 50-100m, or greater if the situation requires.

Open column is normally used during daylight. It may also be used at night using infrared lights or during moonlit nights on good routes, using blackout lights.

Normally, vehicle density is about 15 vehicles per kilometer when vehicles are 50m apart, 12 vehicles per kilometer when the distance is 75m, and 10 vehicles per kilometer when the distance is increased to 100m.

Infiltration. Vehicles are usually dispatched individually, in small groups, or at irregular intervals at a rate that keeps the traffic density down and prevents the undue massing of vehicles.

Infiltration is the best passive defense against enemy observation and attack. It is suited for tactical marches when sufficient time and road space are available and when maximum security, deception, and dispersion are desired.

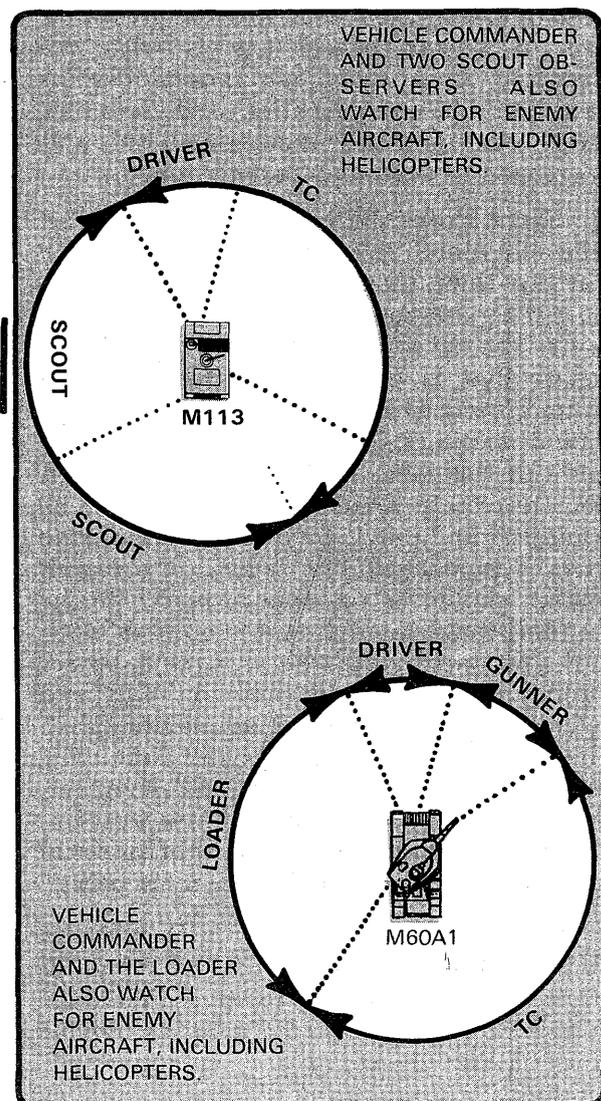
MARCH ORGANIZATION

A march column includes all elements using the same route for a single movement under the control of a single commander. Whenever possible, a battalion task force marches over multiple routes to reduce closing time. A large column may be composed of a number of subdivisions, each under the control of a subordinate commander. March columns, regardless of size, are composed of three elements: a head, a main body, and a trail element.

- The *head* is the first vehicle of the column and normally sets the pace.
- The *main body* is made up of the major elements of column serials and march units.
 - A *serial* is a major subdivision of a march column. A serial is organized as a single unit under one commander for planning, regulation, and control. A battalion task force usually forms into a serial.
 - A *march unit* is a subdivision of a serial and is normally a squad, section, platoon, company, troop, or battery. It moves and halts under the control of a single commander using voice, visual signals, or radio when no other means of communication can be used.
- The *trail party* follows the march column and includes personnel and equipment necessary for emergency vehicle repair and recovery, medical aid and evacuation, and unscheduled refueling.

The commander does not have a prescribed place in the column. He positions himself where he can best control the operation.

Vehicle commanders assign *sectors of observation* to their personnel so that there is 360° observation around their vehicles. Each vehicle commander designates *an air guard* to provide air security. Specific vehicles may be designated as air guard vehicles and their entire crews orient only on air observation.



MARCH COLUMN CONTROL

Column control is maintained through the chain of command. Commanders of serials and march units are responsible for controlling their elements. Each uses his staff or representatives to assist as he may direct. Ground vehicles, aircraft, route marking guides, and military police may help control and coordinate the march.

Each unit marching as part of a larger element maintains liaison with the preceding unit. A liaison officer travels with the preceding unit, keeps his commander informed of that unit's location, and gives him early warning of any unscheduled halt and the reason as soon as it is determined.

Start Point (SP). An SP provides all units of a march column a common point for starting their movement. When units use more than one route, each route has a start point. The SP is a place along the route of march that is easily recognizable on the ground, such as a road intersection. An SP should not be in a defile, on a hill, or at a sharp curve in the road. It should be far enough from assembly areas to allow units to be organized and moving at the prescribed rate when it is reached. No element of a march column should be required to march to the rear or through another unit in order to reach it. Before starting a march, each major unit of a serial reconnoiters its route to the SP and determines the exact time required to reach it. The movement order states the time each serial will arrive at and clear its SP. However, the serial commander determines and announces the times for major units of his serial to arrive at and clear the serial start point.

Release Point (RP). An RP provides all units of the march column a common point for reverting to the control of their parent unit. The RP should be on the route of march

and easily recognizable on the map and on the ground. Guides meet units as they arrive at the RP and lead them to the new areas. Multiple routes and cross country movement from there to assembly areas enable units to disperse rapidly. In selecting an RP, avoid hills, defiles, and sharp curves. No unit should be required to countermarch or pass through another unit to reach its new position.

Critical Points. Critical points on a route are those points used for reference in providing instructions, where interference with movement might occur, or where timing might be a critical factor. The route reconnaissance report or a map study should provide the march planner with information to designate critical points along the route of march and distances from one critical point to another.

Restrictions. Restrictions are points along the route of march, such as bridges, intersections, ferries, or bypasses, where movement may be limited or obstructed during specified periods. The march planner should start the move early enough to pass before the restriction begins, delay the start of the move to pass the restriction after it has ended, or plan to halt the column along the route until the restriction is over.

Communications. Messengers are the primary means of communication during road marches. Visual signals are also used. Because the enemy has good radio direction finding equipment, radio is used only in emergencies and when no other means of communication is available. Road guides can also pass messages from one march unit to a following march unit. Because of the need to stay off the radio, road guides are very important in controlling the speed of march units and the intervals between them.

Traffic Control of the March. Traffic control is normally provided by the headquarters controlling the march. Military police traffic control posts may be located at critical points along the route to provide orientation and minimize delays caused by other columns, civilian or refugee traffic, congested areas, or difficult terrain. Movements on multiple routes during periods of poor visibility, major intersection defiles, and detours along routes increase traffic control problems.

Road guides may augment and support the military police effort. Road guides should be posted in pairs, one to direct traffic while the other provides security. Their equipment should provide for identification during hours of darkness. Guides are normally posted by an advance party of the moving unit.

Control of Column Speed. Elements in a column of any length encounter many different types of routes and obstacles simultaneously, resulting in different parts of the column moving at different speeds at the same time. This can produce an undesirable accordion action or whip effect. The movement order gives march speed which is an *average* rate of march maintained by march elements. The movement order also gives maximum catchup speed for safety and to reduce "column whipping."

To control whipping, the leading vehicle must not exceed the authorized maximum speed of the slowest vehicle in the column, especially after negotiating an obstacle. To minimize vehicle congestion on the near side of an obstacle, vehicle commanders and drivers must be alert and maintain the prescribed minimum distance between vehicles. To further reduce whipping and to

maintain proper march distance, each vehicle must reduce or increase speed gradually.

Vehicles that have dropped out of the column for any reason should return to their positions only when the column has stopped.

Halts. Halts are made for rest, personal comfort and relief, messing, refueling, maintenance and inspection of equipment, allowing other traffic to pass, and for making adjustments in schedules. The time and duration of halts are usually established in the movement order or prescribed in the unit SOP.

- *Short halts* for rest are usually taken for 15 minutes after the first hour of marching and for 10 minutes every 2 hours thereafter. The prescribed rate of march includes the time required for short halts. When possible, march elements on the same route stop at the same time. Route characteristics may make it necessary for the halt to occur in one particular part of the route rather than simultaneously at a fixed time.
- *Long halts* are planned in advance requiring that additional time be specifically allocated and added to the total travel time. Locations for long halts are normally selected to allow all vehicles to clear the road and permit proper dispersion.

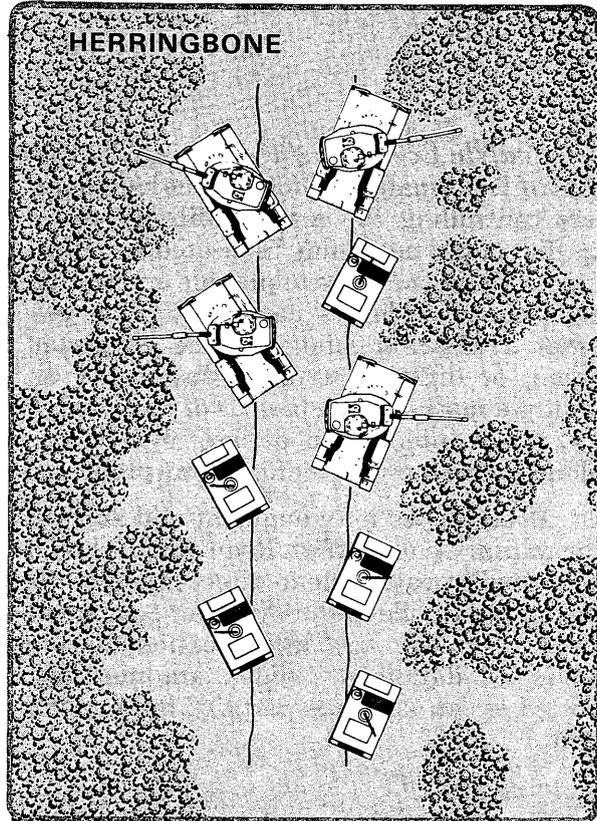
Unit SOP's should prescribe actions to be taken during halts. Vehicular crews perform during-operation maintenance services at scheduled halts. Whenever unscheduled halts occur, a vehicle commander makes contact with the vehicle to his front, and movement commanders take appropriate action to determine and eliminate the cause of the halt.

Halts for refueling should be scheduled in *advance*. This enables march unit commanders to make definite plans for refueling.

It may be desirable to temporarily clear the route of march to shorten the column. When terrain permits, units do this by coiling on each side of the route. A coil is a circle of vehicles with weapons oriented outward. If sufficient area is not available or condition of the terrain prevents coiling, a *herringbone* is formed.

The first priority at a halt is to establish local security. Observation posts are established and sectors of fire are assigned to each platoon, section, and squad.

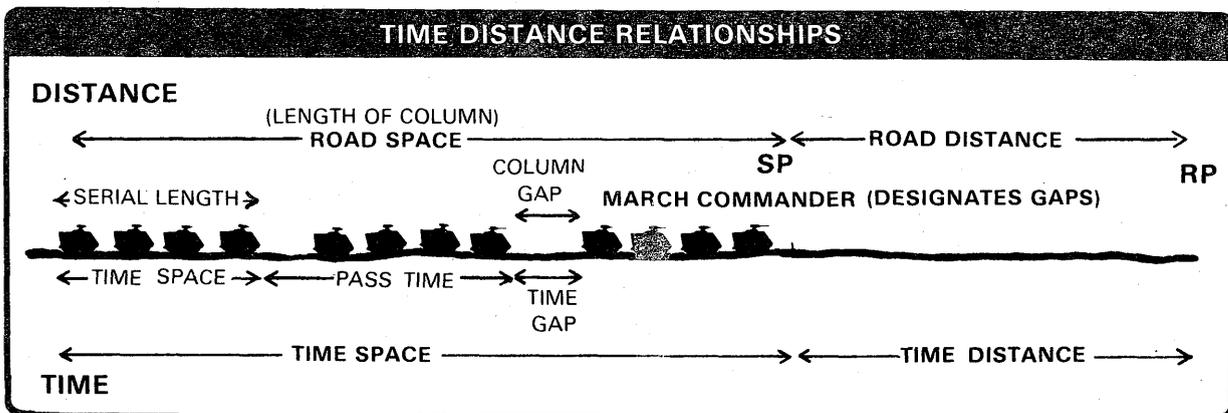
Disabled vehicle halts must not obstruct traffic. The crew moves disabled vehicles off the road and reports their status immediately. The crew establishes security and posts aides to direct traffic. If the crew repairs the vehicle, it rejoins the *rear* of the column. If the crew can't repair the vehicle, it is recovered by the trail party.



MARCH TERMS, MOVEMENT FORMULAS, AND COMPUTATIONS

An understanding of certain march terms is necessary in order for the planner to develop detailed movement plans. These terms together with basic factors of distance, rate, and time are transformed into move-

ment formulas. Formulas are applied to known data to derive information necessary to prepare a time schedule. The time schedule regulates departures and arrivals of march elements.



Time and Distance Relationship. The relationship between time and distance is the basis for march planning. The planner must determine how far the column is to travel (distance) and how long it will take to make the move (time). He must know the space (length of column) the column will occupy on the route. He must also include in his computations the safety factor of distance (road gap) or (time gap), which must separate march columns and their elements. Each term used for distance has its corresponding term for time. The length of a column in kilometers has an equivalent pass time in minutes. The road distance, how far in kilometers or miles, has a corresponding time distance, how far in time. The relationship between time and distance is shown next.

Distance Factors.

- *Vehicle distance* is the space between two consecutive vehicles of an organized element of a column.
- *Column gap* is the space between two organized elements following each other on the same route. It can be calculated in units of length or in units of time as measured from the rear of one element to the front of the following element.
- *Traffic density* is the average number of vehicles that occupy 1 mile or 1 kilometer of road space, expressed in vehicles per mile (vpm) or vehicles per kilometer (vpk).
- *Length of a column* is the length of a roadway occupied by a column, including gaps in the column, measured inclusively from front to rear.
- *Road gap* is the distance between march elements. It is the length

aspect of a column gap, and since it is more significant when the column is moving, it becomes a factor of time rather than distance.

Rate Factors.

- *Speed* indicates the actual rate of movement of a vehicle at a given moment, as shown on the speedometer in kilometers per hour or miles per hour.
- *Pace* is the regulated speed of a column or element as set by the pace setter in order to maintain the prescribed average speed.
- *Rate of march* is the average number of miles or kilometers traveled in any given period of time, including short periodic halts and other short delays. It is expressed as miles or kilometers in the hour (kmih).

Time Factors.

- *Arrival time* is the time the head of the column arrives at a designated point.
- *Clearance time* is the time the tail of a column passes a designated point.
- *Completion time (CT)* is the time the last vehicle of a column passes the release point.
- *Extra time allowance (EXTAL).*
 - Within a column moving under one identification serial number, an extra time allowance of 1 minute per 25 vehicles is allotted above the calculated pass time.

- In a column where the number of vehicles is over 600, the extra time allowance is 2 minutes per 25 vehicles.
- A serial of less than 25 vehicles is not allotted any extra time.
- EXTAL is equitably added to march unit pass times within a serial.

■ *Pass time (PST)* of a column is the actual time between the moment the first vehicle passes a given point and the moment the last vehicle passes the same point.

■ *Road clearance time* is the total time a column requires to travel over and clear a section of road. Road clearance time equals time distance plus column pass time.

■ *Time distance (TDIS)* is the time required to move from one point to another at a given rate of march. It normally represents the movement of the head vehicle of the column from the start point (SP) to the release point (RP).

■ *Time gap* is the time between rear and front of successive vehicles of elements as they move past any given point. It is the time aspect of column gap and may also be the conversion of road gap to time. There are no prescribed standard gaps. These depend on the size of serials and march units, the time available for the movement, and the tactics required for protection against air and nuclear attack.

Application of Movement Formulas.

Distance, rate, and time are the basic factors for movement computations. If two of these factors are known, the third may be easily found by dividing or multiplying one by the other.

- *Rate* is determined by dividing distance by time.

$$R = \frac{D}{T}$$

- *Distance* is found by multiplying rate by the time.

$$D = R \times T$$

- *Time* is calculated by dividing distance by the rate.

$$T = \frac{D}{R}$$

Determination of Pass Time, Time Distance, Arrival Time, and Completion Time.

- ***Pass Time (PST).*** Pass time is calculated by taking the total number of vehicles multiplied by 60 and dividing by vehicle density multiplied by speed. To this figure are added extra

time allowance (EXTAL) and time gaps between march elements. This formula may be used to quickly calculate pass time for an entire serial or march column.

$$PST = \frac{\text{No. of Vehicles} \times 60}{\text{Density} \times \text{Speed}} + \frac{\text{No. of Veh's}}{\text{No. of Veh's in Each Unit}} + (\text{No. of Gaps} \times \text{Minutes in Each Gap})$$

Example. Determine pass time (PST) of a serial of 150 vehicles organized into 6 march units of 25 vehicles each, traveling at a

speed of 24 kmph, with a density of 15 vehicles per kilometer (vpk), and a 2-minute time gap between march units.

$$PST = \frac{150 \times 60}{15 \times 24} + \frac{150}{25} + (5 \times 2) = \frac{9,000}{360} + 6 + 10 = 25 + 6 + 10 = 41 \text{ minutes}$$

- NOTE: 1. Round off fractions of minutes to next higher whole minute.
 2. Extra time allowance (EXTAL) is allocated on the basis of 1

minute per 25 vehicles and added to serial pass time. EXTAL is equitably added to the pass times of each march unit in the serial.

A *pass time table* together with the extra time allowance table simplifies march planners mathematical processes. To prepare the time schedule for a serial, it is necessary to calculate pass time for each march unit. Using this table, it is a simple process to determine pass time for any march unit regardless of the number of vehicles, travel-

ing speed, or column density. The extra time allowance is then added to the calculated pass time to get the total pass time.

Pass time for a serial is determined by adding march unit pass times together, including gaps between march units. Examples are below the tables.

PASS TIME TABLE (SINGLE MARCH UNIT)

NUMBER OF VEHICLES IN MARCH UNIT	PASS TIME (MINUTES AND SECONDS)											
	16 KMPH/10 MPH				24 KMPH/15 MPH				32 KMPH/20 MPH			
	INTERVAL—METERS				INTERVAL—METERS				INTERVAL—METERS			
	25	50	75	100	25	50	75	100	25	50	75	100
30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	
1	:08	:15	:19	:23	:05	:11	:13	:15	:04	:08	:10	:12
2	:15	:30	:38	:45	:11	:20	:26	:30	:08	:15	:19	:23
3	:23	:45	:57	1:08	:15	:30	:38	:45	:12	:23	:29	:34
4	:30	1:00	1:15	1:30	:20	:41	:50	1:00	:15	:30	:38	:45
5	:38	1:15	1:34	1:53	:26	:50	1:03	1:15	:19	:38	:47	:57
6	:45	1:30	1:53	2:15	:30	1:00	1:15	1:30	:23	:45	:57	1:08
7	:53	1:45	2:12	2:38	:35	1:11	1:28	1:45	:26	:53	1:06	1:19
8	1:00	2:00	2:30	3:00	:41	1:20	1:41	2:00	:30	1:00	1:15	1:30
9	1:08	2:15	2:49	3:23	:45	1:30	1:53	2:15	:34	1:08	1:25	1:42
10	1:15	2:30	3:08	3:45	:50	1:41	2:05	2:30	:38	1:15	1:54	1:53
15	1:53	3:45	4:41	5:38	1:15	2:30	3:08	3:45	:57	1:53	2:21	2:49
20	2:30	5:00	6:15	7:30	1:41	3:20	4:11	5:00	1:15	2:30	3:08	3:45
25	3:08	6:15	7:49	9:23	2:05	4:11	5:13	6:15	1:34	3:08	3:55	4:42
30	3:45	7:30	9:23	11:15	2:30	5:00	6:15	7:30	1:53	3:45	4:42	5:38
40	5:00	10:00	12:30	15:00	3:20	6:41	8:20	10:00	2:30	5:00	6:15	7:30
50	6:15	12:30	15:38	18:45	4:11	8:20	10:26	12:30	3:08	6:15	7:49	9:23

The pass time (PST) table is used in conjunction with the extra time allowance (EXTAL) table to calculate the pass test times for single march units of a battalion task force serial. The pass time table is based upon the number of vehicles in the march unit (density), the interval between the vehicles, and the specified vehicular speed. The figures in this table are expressed in *minutes* and *seconds*. The extra time allowance table provides the EXTAL in minutes based upon the number of vehicles in the march unit (density).

Example 1: Determine the PST for a march unit of 29 vehicles at 50-meter intervals traveling at 40 kmph. Use the 40 kmph/25 mph division of the table and select the 50-meter interval/15 vehicle per kilometer (VPK) column. Find the PST for 25 vehicles (3 minutes). Next, find the PST for 4 vehicles (29 seconds). Add the 3 minutes to the 29 seconds, then round up to the next higher whole minute for a total of 4 minutes. Finally, use the Extra Time Allowance Table and determine the EXTAL for 29 (1 minute). Add 1 minute EXTAL to the 4 minutes PST for the march unit pass time of 5 minutes. To calculate the pass time for a battalion task force *serial*, add the march unit pass times together and include the time gaps between the march units. There will always be one less time gap than march units.

Example 2: Determine the PST for a serial of 4 march units (MU), each march unit with a PST of 5 minutes and a time gap of 2 minutes between march units. Add 5 minutes (MU1) + 2 minutes (time gap) + 5 minutes (MU2) + 2 minutes (time gap) + 5 minutes (MU3) + 2 minutes (time gap) + 5 minutes (MU4) = 26 minutes total serial PST.

PASS TIME TABLE (SINGLE MARCH UNIT)

PASS TIME (MINUTES AND SECONDS)													NUMBER OF VEHICLES IN MARCH UNIT
40 KMPH/25 MPH				48 KMPH/30 MPH				56 KMPH/35 MPH					
INTERVAL—METERS				INTERVAL—METERS				INTERVAL—METERS					
25	50	75	100	25	50	75	100	25	50	75	100		
30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK	30 VPK	15 VPK	12 VPK	10 VPK		
:04	:08	:08	:09	:03	:05	:06	:08	:03	:05	:06	:06	1	
:08	:15	:15	:18	:05	:11	:13	:15	:05	:09	:11	:13	2	
:11	:22	:23	:27	:08	:15	:19	:23	:07	:13	:17	:20	3	
:15	:29	:30	:36	:11	:20	:26	:30	:09	:18	:22	:26	4	
:18	:36	:38	:45	:13	:26	:32	:38	:11	:22	:27	:33	5	
:22	:44	:45	:54	:15	:30	:38	:45	:13	:26	:33	:39	6	
:26	:51	:53	1:03	:18	:35	:44	:53	:15	:30	:38	:45	7	
:29	:58	1:00	1:12	:20	:41	:50	1:00	:18	:35	:41	:52	8	
:33	1:05	1:08	1:21	:23	:45	:57	1:08	:20	:39	:48	:58	9	
:36	1:12	1:15	1:30	:26	:50	1:03	1:15	:22	:43	:54	1:05	10	
:54	1:48	1:53	2:15	:38	1:15	1:34	1:53	:33	1:05	1:21	1:36	15	
1:12	2:24	2:30	3:00	:50	1:41	2:05	2:30	:43	1:26	1:48	2:09	20	
1:30	3:00	3:08	3:45	1:03	2:05	2:36	3:08	:54	1:48	2:14	2:41	25	
1:48	3:36	3:45	4:30	1:15	2:30	3:08	3:45	1:05	2:09	2:41	3:13	30	
2:24	4:48	5:00	6:00	1:41	3:20	4:11	5:00	1:26	2:52	3:35	4:18	40	
3:00	6:00	6:15	7:30	2:05	4:11	5:13	6:15	1:48	3:35	4:28	5:22	50	

EXTRA TIME ALLOWANCE (EXTAL) TABLE (SINGLE MARCH UNIT)

NUMBER OF VEHICLES IN MARCH UNIT	0—12	13—37	38—62	63—87	88—112	113—137	138—162	163—187	188—212	213—237	238—262
EXTAL IN MINUTES	0	1	2	3	4	5	6	7	8	9	10

- Time Distance (TDIS).** Rate of march is an average number of miles or kilometers traveled in a given period time (see the Time Distance Table). Time distance is determined by dividing the distance to be traveled by the rate of march.

Time distance *does not* include time for long delays or extended scheduled halts. This formula can be used to quickly calculate time distance:

$$TDIS = \frac{DISTANCE (KM)}{RATE OF MARCH (KMIH)}$$

Example. Determine the time distance of a serial traveling 135km at a speed of 24 kmph (rate of march 20 kmih).

$$TDIS = \frac{135 (KM)}{20 (KMIH)} = 6.75 \text{ HOURS}$$

$$TDIS = 6 \text{ HOURS AND } 45 \text{ MINUTES}$$

NOTE: Fractional parts of an hour are converted to minutes by multiplying the fraction by 60 and rounding off to the next higher whole minute.

A *time distance table* is a valuable tool to the march planner. It provides a listing of factors used to calculate time required to travel certain distances at specified vehicular speeds. Travel rates are expressed in vehicu-

lar speeds and corresponding rates of march. Travel factors are derived from the rate of march, which includes time for short periodic halts and other minor delays that might occur.

TIME DISTANCE TABLE

Speed Miles/Kilometers per Hour	Rate of March Miles/Kilometers in the Hour	Minutes to Travel 1 Kilometer	Minutes to Travel 1 Mile
10 mph 16 kmph	8 mih 12 kmih	5	7.5
15 mph 24 kmph	12 mih 20 kmih	3	5
20 mph 32 kmph	16 mih 25 kmih	2.4	3.75
25 mph 40 kmph	20 mih 32 kmih	1.84	3
30 mph 48 kmph	25 mih 40 kmih	1.5	2.4
35 mph 56 kmph	30 mih 46 kmih	1.3	2
40 mph 65 kmph	33 mih 53 kmih	1.13	1.8

This table gives the time required to travel 1 kilometer or 1 mile at specified march speeds. The travel times are calculated based upon rates of march (miles/kilometers in the hour) and includes time for scheduled short halts and time lost due to road and traffic conditions. The time for long halts must be added to the total travel time. Multiply the total distance to be traveled (miles or kilometers) by the travel time factor for 1 mile or 1 kilometer for the designated speed.

Example. Determine the TDIS for a column traveling 310 kilometers at a speed of 24 kmph.
 $310 \text{ (km)} \times 3 \text{ minutes} = 930 \text{ minutes}$, convert 930 minutes to 15 hours and 30 minutes.

- Arrival Time (AT).** In march planning, the release point is normally designated as the terminal point of movement. Arrival time at the release point is determined by adding time distance and any long scheduled halts to the start point (SP) time. It may also be calculated by subtracting pass time from completion time.

Example. Determine the arrival time for a serial with a start point (SP) time of 0800 hours, time distance of 6 hours and 45 minutes, and a scheduled halt of 1 hour.

	Hours	Minutes
SP Time	8	0
Time Distance	6	45
Scheduled Halt	<u>1</u>	<u>0</u>
	15	45

Arrival time is 1545 hours

- Completion Time (CT).** Completion time is calculated by adding pass time to arrival time. Completion time may also be determined by adding to start point (SP) time, time distance (TDIS), pass time (PST), and any scheduled halts.

Example 1. Determine the completion time for a serial with an arrival time of 1545 hours and a pass time of 41 minutes.

	Hours	Minutes
Arrival Time	15	45
Pass Time	<u>0</u>	<u>41</u>
	15	86

Completion time is 1626 hours.

Example 2. Determine the completion time for a serial with a start point (SP) time of 0800 hours, time distance (TDIS) of 6 hours and 45 minutes, pass time (PST) of 41 minutes, and a scheduled halt of 1 hour.

	Hours	Minutes
SP Time	8	0
Time Distance	6	45
Pass Time	0	41
Scheduled Halt	<u>1</u>	<u>0</u>
	15	86

Completion time is 1626 hours.

SPEED

Speed PW's to the rear to remove them from the battle area.

SAFEGUARD

Prevent escape and harm.

Before evacuating a PW, attach a tag to him.

PW TAG

DATE/TIME _____

PLACE OF CAPTURE (GRID COORDINATES) _____

CAPTURING UNIT _____

CIRCUMSTANCES OF CAPTURE
(HOW IT HAPPENED) _____

NOTE: Tags may be printed before combat or made out of materials at hand on the battlefield.

For evacuation and interrogation, take a PW to the platoon leader and then to an area chosen by the troop/company commander. If trained interrogators are available, the troop commander asks for information about the local tactical situation, then evacuates the

PW to the squadron S2 for more interrogation.

If a PW is wounded, turn him over to medical personnel and evacuate him through medical channels.

REMEMBER:

- Do *not* mistreat or hurt PW's.
- Follow the five S's in handling PW's.
- Use the proper channel for evacuating PW's, depending on their physical condition.
- Tag PW's before evacuation to the rear.

CAPTURED DOCUMENTS AND EQUIPMENT

Enemy documents and equipment are excellent sources of intelligence information. Documents may be official, such as maps, orders, records, and photographs; or personal, such as letters, diaries, and pay records.

If captured items are not handled properly, the information in them may be lost or delayed until it is useless. Evacuate captured documents and equipment to the next level of command as rapidly as possible. Tag each captured item.

TYPE DOCUMENT/EQUIPMENT _____

DATE/TIME CAPTURED _____

PLACE OF CAPTURE (GRID COORDINATES) _____

CAPTURING UNIT _____

CIRCUMSTANCES OF CAPTURE
(HOW IT HAPPENED) _____

NOTE: Tags may be printed before combat or made out of materials at hand on the battlefield.

Information contained on the tag helps speed up processing of the captured item and indicates its probable value. If the captured item was found on a PW, include the prison-

er's name on the tag and give the item to whomever the PW is given. Evacuate the item with the PW to the next higher headquarters.

OPERATIONS IN ACTIVE CHEMICAL OR BIOLOGICAL CONDITIONS

It is the policy of the United States not to use toxic chemical weapons first; however, they may be used if an enemy employs them against the United States. The United States will not use biological weapons under any circumstances. Threat forces, however, have both chemical and biological weapons so a cavalry unit may have to fight in active chemical and biological conditions. These weapons may be used separately, simultaneously, or with nuclear weapons. Regardless of their use, cavalry fights the same; that is, it makes full use of cover and concealment, overwatch and suppression. This appendix describes some of the characteristics of toxic chemical and biological weapons, their effects on men, equipment, and terrain; and protective measures used by cavalry when operating in active chemical and biological conditions.

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The enemy has great potential for chemical and biological warfare. The enemy's preparedness to use them is clearly illustrated by his training and widespread issue of protective devices as standard equipment. Chemical and biological agents can easily be disseminated over wide areas. Therefore, a cavalry unit must expect to be frequently subjected to them. All personnel, during training, should be required to perform their duties while masked for periods of 2-3 hours. Units should routinely practice decontamination measures as part of normal field training. SOP's setting forth warning signals and what to do must be developed from regiment through platoon. These procedures must be standard throughout a cavalry organization. They must be made known to units operating with or under control of the cavalry unit. For detailed information concerning chemical and biological agent detection and protective measures, see FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*. For detailed information concerning decontamination, see TM 3-220, *CBR Decontamination*.

CHEMICAL AGENT DETECTION

Chemical agent detection is conducted to detect the presence of toxic chemical agents. It is done by using a chemical agent detector kit, automatic chemical agent alarm, detection paper, and crayon (FM 21-40). Personnel must be instructed not to rely on odors to detect chemical agents because some highly lethal agents are odorless.

The enemy's emphasis on toxic chemicals requires constant alertness to ensure early warning regardless of a unit's situation. Whenever a chemical agent is detected, SOP warnings are given and all personnel mask

and take other protective measures as required (FM 21-40).

Chemical agent detection is a continuous requirement because of the enemy's great potential for use of toxic agents. It is done as described in FM 21-40 as a matter of routine by all cavalry units.

BIOLOGICAL AGENT DETECTION

Biological agents, during early stages of use, are usually difficult to detect. All soldiers must have an alert and questioning attitude toward any indication that biological agents may have been used. Casualties from a biological attack can be reduced by immunization, quarantine of contaminated structures and areas, rodent control, and using only designated sources of food and drink. The importance of good protective mask discipline and field sanitation must be emphasized (FM 21-40).

CHARACTERISTICS OF CHEMICAL AND BIOLOGICAL AGENTS

Lethal chemical agents are similar to poisonous compounds used in everyday life. Familiar chemical compounds are used to kill flies, mosquitos, and other insects. Chemical agents, however, are far more powerful, and are released to cover relatively large areas. They may be placed on a target as a gas, finely divided liquid or solid particles (aerosols), or liquid droplets. A mixture of agents can cause confusion and increase casualties. They can be disseminated by artillery, mortars, rockets, missiles, aircraft spray, bombs, and landmines. They may be odorless and colorless.

Biological agents are the same disease-producing micro-organisms (germs) naturally present around us every day. The intentional use of micro-organisms creates a disease hazard where none exists naturally. These biological agents may be dispersed as aerosols by generators, explosives, bomblets, missiles, and aircraft. Harmful micro-organisms may also be spread by the release of living insects, such as flies, mosquitos, fleas, and ticks.

Effects on Personnel:

- Chemical and biological agents may enter the body through the eyes, nose, mouth, or skin. They can produce incapacitation or death.
- Liquid agents may be dispersed on equipment, terrain, and foliage. The agent may remain for hours or days presenting a serious hazard to unprotected soldiers.

Effects on Equipment:

- Chemical and biological agents have little direct effect on equipment. Liquid chemical agent contamination on equipment can cause casualties or restrict its use until appropriate decontamination is accomplished.
- Emergency decontamination of vehicles and equipment is accomplished by crew members (FM 3-220, *CBR Decontamination*).

Effects on Terrain:

- Liquid chemical agents may restrict the use of terrain, equipment, and buildings.
- Decontamination of terrain is beyond the capabilities of a cavalry unit. Contaminated areas may either be bypassed, or crossed when indi-

vidual protective equipment is worn.

- Cavalrymen and equipment must be decontaminated after a mission in or involving the crossing of a contaminated area.

PROTECTIVE MEASURES IN CHEMICAL AND BIOLOGICAL WARFARE

A cavalry unit commander must train his men to apply protective measures against toxic chemical and biological attack. Standard operating procedures must provide for an adequate warning system; use of individual and unit protective equipment; procedures for prompt decontamination of individuals, equipment, and supplies; and prompt treatment of casualties.

A cavalryman's primary protection against *toxic chemical and biological* attack is his protective *mask*.

To be protected against *liquid chemical agents*, soldiers must wear *chemical protective clothing as well as masks*. Complete individual protection is provided by wearing the mask with hood, protective overgarments, protective socks with chemical resistant boots, and protective gloves.

Once chemical agents have been used or while the threat of chemical attack exists, the cavalry unit commander determines the level of protection required. This decision, called mission-oriented protective posture (MOPP), is based on the chemical threat, mission, work rate, and temperature. The cavalry unit commander specifies the degree of protection before a mission (FM 21-40). He may subsequently direct that the protection be modified, according to his estimate of the situation.

Information on enemy use of biological agents is disseminated by higher headquarters. A cavalry unit must promptly report unusual occurrences of diseases. The best

local defense against biological warfare is strict enforcement of preventive medical and sanitation measures and high standards of personal hygiene.

AREA DAMAGE CONTROL AND RADIOLOGICAL MONITORING AND SURVEY

Area damage control operations are measures taken after an enemy nuclear, chemical, or biological attack; unusually heavy bombing or shelling; or a natural disaster in order to minimize these effects. Forward of a brigade rear boundary, area damage control measures are designed to minimize interference with combat operations and loss of combat power. Area damage control measures behind a brigade rear boundary are usually oriented toward minimizing damage to combat service support and/or suffering of civilians. A cavalry unit—regiment through troop—may conduct or participate in area damage control while primarily involved in a tactical mission or with area damage control as the primary mission for a short period. In cavalry, a platoon participates in area damage control as part of its parent unit. A cavalry unit is most frequently involved in area damage control while conducting an area security operation. Detailed discussion of area damage control operations is contained in FM 31-85, *Rear Area Protection Operation*; FM 71-100, *Division Operations (Mechanized/Armor)*; and FM 54-2, *The Division Support Command and Separate Brigade Support Battalion*.

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AREA DAMAGE CONTROL

A cavalry unit performing area damage control operations must:

- Determine and report the condition of the unit or population center attacked.
- Assume control of survivors.
- Establish communications between an attacked unit and its next higher operational headquarters.
- Assemble combat capable elements and help them re-establish communications with their next higher operational headquarters.
- Evacuate casualties to casualty collection points or to appropriate medical installations. Casualty collecting points should be easily accessible to ground vehicles and helicopters.
- Evacuate vehicles and major items of equipment to maintenance/decontamination points.
- Perform limited decontamination, and conduct radiological monitoring and chemical agent detection (appendix I). A cavalry unit observing or having knowledge of mass destruction or mass casualties reports and continues its assigned mission. The unit should also anticipate a possible change in mission to counter the attack's effect on the plan of their higher headquarters. This reduces reaction time if a change of mission is required. For detailed information concerning chemical, biological, radiological, and nuclear defense, see FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*.

Radiological, and Nuclear Defense. For detailed information concerning decontamination, see FM 21-40, FM 3-12 (radiological decontamination), and TM 3-220 (chemical and biological agent decontamination).

Staff Responsibilities. The S4 has staff responsibility for area damage control planning. When the plan is implemented, staff responsibility for control passes to the S3. The S2 exercises staff supervision over the collection, processing, reporting, and dissemination of radiological monitoring information and meteorological data. The S1 has staff responsibility for maintaining records and reports reflecting the strength of the command as a result of radiation exposure.

Training. All cavalry units, regiment through troop level, should have SOP's in the event mass destruction and/or mass casualties are caused by enemy action or a natural disaster. These SOP's should be based on plans of the next higher echelon and periodically rehearsed. All cavalry units must be thoroughly trained in protective measures to reduce the effects of mass destruction and/or mass casualties. These measures are discussed in FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*.

Organization for Area Damage Control Operations. A cavalry unit committed to area damage control as a primary mission is usually used as organized. In this case, usual command and control procedures apply. Combat service support elements, assisted by combat soldiers, are committed as necessary. When cavalry conducts area damage control operations as part of another mission, it usually commits control and assessment teams (CAT) and rescue squads.

The primary purpose of a CAT is to provide centralized control to ensure prompt and decisive action when an entire TOE unit can't be used. A regiment and/or squadron headquarters provides a CAT. A regimental CAT is committed when area damage control operations require more than one squadron CAT. At times, medical mass evacuation and

heavy labor teams may be provided a squadron. These may be formed out of medical and engineer assets organic to the regiment, or in the case of a divisional squadron, from divisional assets. In either case, such teams are under the OPCON of the regimental or squadron CAT controlling the operation.

**TYPICAL ARMORED OR AIR CAVALRY REGIMENT OR SQUADRON
CONTROL AND ASSESSMENT TEAM (CAT)**

				
1 REGT (SQDN) XO 1 DRIVER	1 REGT (SQDN) C-E OFFICER 1 RADIO MECHANIC/ DRIVER DRIVER*	1 RADIOLOGICAL MONITORING AND SURVEY OFFICER 1 DRIVER**	1 LOGISTICS OFFICER 1 SUPPLY SGT 1 CLERK/DRIVER	1 MEDICAL SERVICE OFFICER 1 SENIOR AIDMAN 1 MEDICAL AIDMAN/ DRIVER***

*Command post carrier may be used, if available.

**Personnel and vehicle are as designated in unit SOP.

***In armored cavalry squadrons a medical aid station carrier may be used.

CONTROL AND ASSESSMENT TEAM:

- MOVES TO AREA OF DAMAGE ON ORDER.
- ESTABLISHES A CONTROL AND ASSESSMENT TEAM CP.
- DETERMINES AND REPORTS THE CONDITION OF THE UNIT OR POPULATION CENTER DAMAGED.
- ASSUMES CONTROL OF SURVIVORS.
- RESTORES COMMAND AND COMMUNICATIONS TO AFFECTED UNITS.
- RELEASES COMBAT EFFECTIVE UNITS TO TACTICAL COMMANDER.
- REQUESTS ADDITIONAL COMBAT SERVICE SUPPORT AS REQUIRED.
- DIRECTS AND CONTROLS THE OPERATION OF RESCUE SQUADS.

Rescue squads are formed in units from squadron through troop. A regimental headquarters does not normally form a rescue squad. Rescue squads are subordinate to CAT's.

TYPICAL ARMORED OR AIR CAVALRY SQUADRON RESCUE SQUAD



1 OFFICER
1 DRIVER



1 NCO SENIOR
RECOVERY
MECHANIC
2 RECOVERY
MECHANICS
1 TRACKED
VEHICLE
MECHANIC



1 AID STATION
ATTENDANT
1 AMBULANCE
DRIVER
1 AMBULANCE
ATTENDANT*



1 OPERATOR
1 ASSISTANT



2 DRIVERS
2 ASSISTANT
DRIVERS

*Squad may use a medic command tracked vehicle if casualties are high.

SQUADRON RESCUE SQUAD:

- OPERATES CASUALTY AND EQUIPMENT COLLECTION POINTS.
- PROVIDES LIMITED EMERGENCY MEDICAL TREATMENT.
- CONDUCTS RADIOLOGICAL MONITORING.
- HELPS COMPANY RESCUE SQUADS.

Each combat troop-size unit also establishes a rescue squad which is assembled on order and attached to a CAT.

TYPICAL ARMORED CAVALRY TROOP RESCUE SQUAD



1 OIC/NCOIC*
1 DRIVER
1 MEDICAL AIDMAN**



1 SCOUT SQUAD



1 SENIOR RECOVERY MECHANIC
1 RECOVERY MECH/DRIVER

*The vehicle is from troop headquarters and personnel are designated by unit SOP.

**An ambulance may also be included.

NOTE: A cavalry troop rescue squad follows the same organization as an armored cavalry troop except wheeled vehicles and a 5-ton wrecker are used. A tank company rescue squad is discussed in FM 71-1. A howitzer battery rescue squad is discussed in FM 6-20.

ARMORED CAVALRY TROOP RESCUE SQUAD:

- ADMINISTERS FIRST AID.
- RESCUES AND REMOVES CASUALTIES.
- EVACUATES VEHICLES AND MAJOR ITEMS OF EQUIPMENT.
- CONDUCTS RADIOLOGICAL MONITORING AND CHEMICAL AGENT DETECTION.
- PERFORMS LIMITED HASTY DECONTAMINATION.

TYPICAL AIR CAVALRY TROOP RESCUE SQUAD



1 OIC/PILOT
1 AERIAL OBSERVER*



1 PILOT
1 AERIAL OBSERVER*



2 PILOTS
1 MEDICAL AIDMAN
1 CREW CHIEF**

*The aircraft is from the aeroscout platoon. Personnel are designated by unit SOP.

**The aircraft and personnel are from either the troop headquarters reconnaissance platoon or the service platoon as designated by unit SOP.

AIR CAVALRY TROOP RESCUE SQUAD:

- ADMINISTERS FIRST AID.
- RESCUES AND REMOVES CASUALTIES.
- CONDUCTS RADIOLOGICAL MONITORING.

AREA DAMAGE CONTROL OPERATION

In case of nuclear attack, the headquarters committing a CAT must determine the probable ground zero (GZ) and the 2-RAD/hr contour line. This information will have to be calculated largely from reports of observing units and initial reports from survey teams. From reports and the assumed posture of the involved unit at the time of the burst, the CBR officer estimates GZ, type of burst (low-air, high-air, or surface burst), the destruction power of the weapon (for example, 20 KT), and the residual and/or induced fallout pattern. Based on this information, the

controlling CAT can designate the area of search and sectors of search, and designate locations of the CAT, CP, maintenance/decontamination point, and casualty collection point.

With exception of the GZ and the 2-RAD/hr contour line, the same control measures are used in all area damage control operations conducted by cavalry units. Sectors of search and location of elements are adjusted as necessary once actual conditions are determined.

Control and Location of Area Damage Control Elements. The assembly point is used to assemble the rescue squads and issue necessary instructions to start operations. It should be centrally located in respect to units providing rescue squads, and outside the contaminated or heavily damaged area.

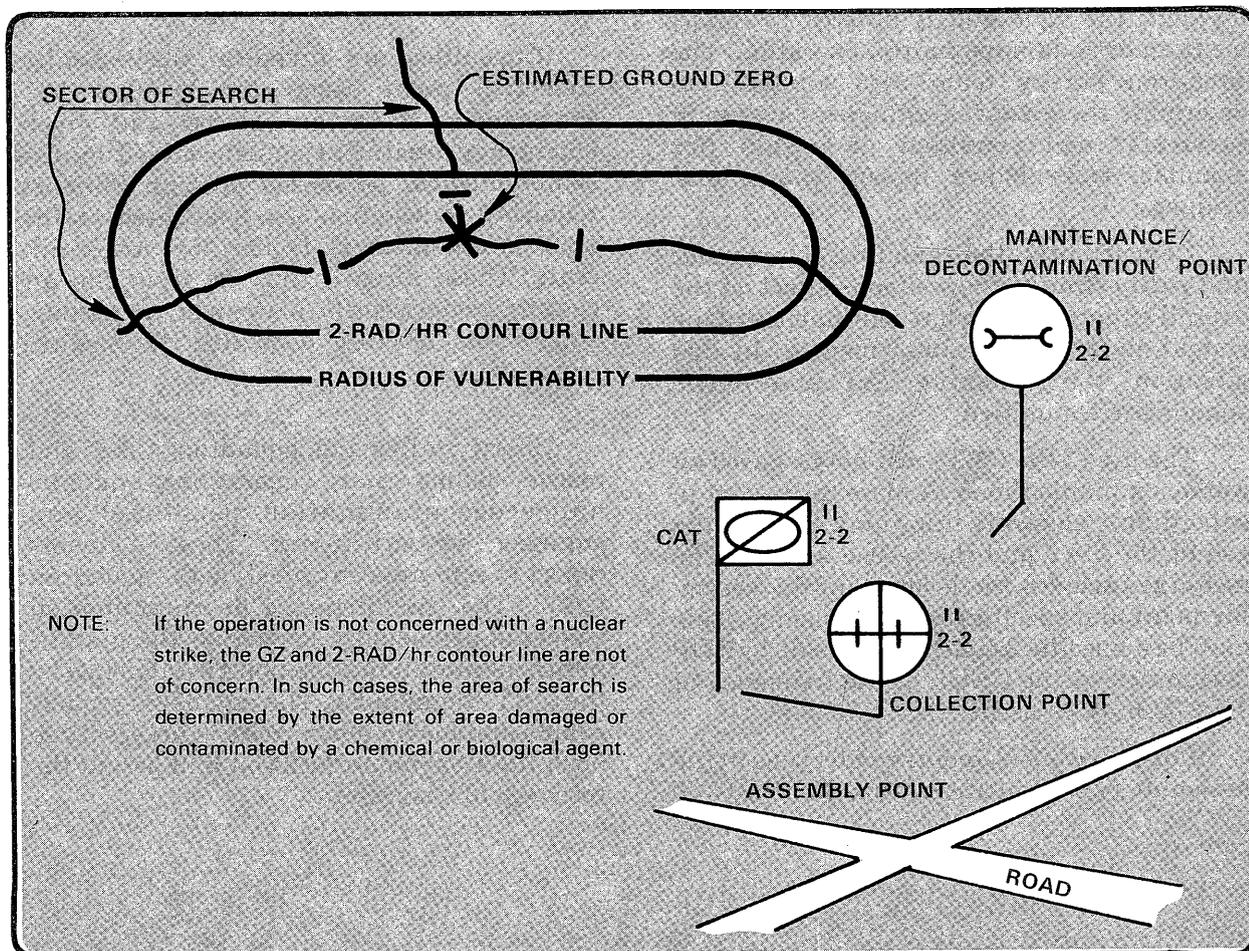
The area of search is based on the assumed posture of soldiers in the damaged area. If the damage was caused by nuclear weapons, the CAT considers whether the troops were protected and estimates the size of the nuclear weapons.

If damage was caused by nuclear weapons, GZ and the 2-RAD/hr contour line must quickly be estimated and refined as additional information is reported by radiological

survey parties. Because of the significance of any movement within the 2-RAD/hr contour line, the maximum allowable stay time for troops involved must be estimated and disseminated. All activity within the 2-RAD/hr contour line must be controlled by the CAT.

Sectors of search are subdivisions of the area of search. Sector boundaries should be easily distinguished terrain features.

Location of the CAT CP, maintenance/decontamination point(s), and casualty collection point(s) are designated by the CAT commander. The maintenance/decontamination point(s) should not be contiguous to casualty collection point(s). A casualty collection point should be easily accessible to both ground and air vehicles.



NOTE: If the operation is not concerned with a nuclear strike, the GZ and 2-RAD/hr contour line are not of concern. In such cases, the area of search is determined by the extent of area damaged or contaminated by a chemical or biological agent.

CONDUCT OF AN AREA DAMAGE CONTROL OPERATION

A method of conducting a squadron-level area damage control operation using a CAT and rescue teams after an enemy nuclear attack is described below. Radiological monitoring and survey are accomplished as discussed in FM 21-40 and later in this appendix.

The 2d Armored Cavalry Squadron, after participating in a covering force operation, is assigned an area security mission due to considerable guerilla activity. TF 2-32 Armor, a part of a brigade reserve, has been subjected to an enemy nuclear strike.

Initial reports from units observing the attack indicate the weapon was a 20-KT, low-air burst. Because of the tactical situation forward, the squadron is ordered to implement an area damage control operation. The squadron survey team also attempts to determine the extent of damage, location of survivors, and condition of terrain (for example, trees blown down), roads, and bridges.

Concurrently, the squadron commander and staff estimate the weapons effect on the overall situation and what contingency plans should most likely be implemented. In this situation, the squadron CAT and rescue squads are committed.

The use of the CAT must not be based on radio communications. A message is sent to subordinate elements informing them of the use of the CAT and the rescue squads. The message includes the location of the assembly point and specifies radio frequency. This may be a specific frequency set aside by SOP designated in the CEOI, or the frequency of TF 2-32 may be used.

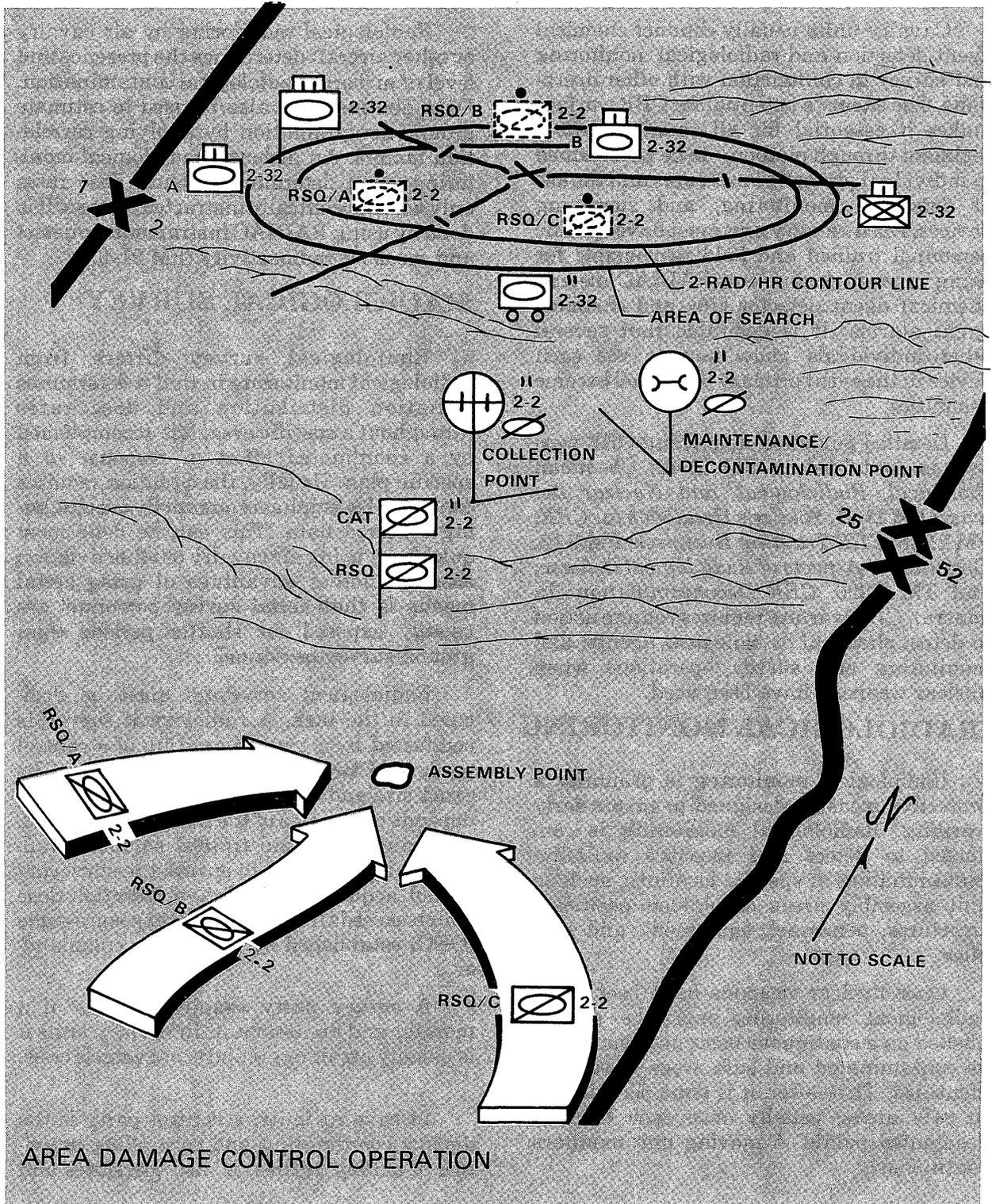
Participating elements rendezvous at the assembly point and are informed by the CAT

commander (squadron executive officer) of the location of the CAT command post, collection points, area of search, 2-RAD/hr contour line, and sectors of search.

During the operation, the CAT commander coordinates the activity of the rescue squads and reports to and requests additional assistance from the squadron's CP. Each rescue squad reports its entry and departure of the 2-RAD/hr area. The CAT must closely monitor such reports to ensure that rescue teams do not become overexposed. Combat capable elements of TF 2-32 are grouped at a rallying point established by the CAT commander. The senior line officer present among TF 2-32 re-establishes radio communications with the brigade.

Casualties are taken to the casualty collection point designated by the CAT commander. They are sorted and given emergency treatment as determined by the senior medical personnel present. Patients requiring evacuation are evacuated to the appropriate medical facility by Army aircraft. These aircraft may be from the air cavalry troop aerorifle platoon or, preferably, supporting aircraft dedicated to medical evacuation.

Shortly after the squadron CAT and rescue teams start operations, maintenance/decontamination personnel and engineer support arrive. These elements report to and are controlled by the squadron CAT. The maintenance/decontamination elements are usually located at the maintenance/decontamination point established by the CAT commander. The engineers remove rubble and blown down trees as necessary to open lines of communication and permit the recovery of casualties.



AREA DAMAGE CONTROL OPERATION

RADIOLOGICAL MONITORING AND SURVEY

Cavalry units usually conduct chemical agent detection and radiological monitoring and survey in conjunction with other operations. The enemy's potential for CBR warfare makes it essential for all cavalry units—regiment through platoon—to be well trained in individual protective measures and the use of detection, monitoring, and surveying devices. Each cavalry unit must have specific personnel trained and held responsible for using organic dosimeters, RADIAC meters, chemical agent detector kits, and chemical agent alarms. It is desirable that several other individuals know how to use each device in the event primary personnel become casualties.

Detailed guidance concerning CBR warfare is contained in FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense*; FM 21-41, *Soldier's Handbook for CBR*; FM 21-48, *CBR Training Exercises*; FM 3-12, *Operational Aspects of Radiological Defense*; and TM 3-220, *CBR Decontamination*. In general, CBR warfare requires routine action to detect chemical or biological agents, and monitoring and survey operations when nuclear weapons have been used.

RADIOLOGICAL MONITORING

Radiological monitoring is primarily a protective measure designed to ensure early warning. Radiological monitoring is conducted to detect and measure radiation contamination of specific locations, such as unit assembly areas or platoon positions, structures, personnel, equipment, and supplies.

Once nuclear weapons have been used, radiological monitoring must be accomplished on a continuous basis until such time as contaminated and safe areas have been identified. Thereafter, it is done periodically in safe areas, usually once each hour at designated points. A moving unit monitors continuously.

Radiological monitoring by air cavalry or other aircraft determines the presence and level of airborne radiological contamination. Data obtained can also be used to estimate ground contamination by applying correlation factors. An airborne radiological monitoring team determines ground dose rates only when specifically instructed to do so. It is done by using RADIAC instruments to detect and measure radioactivity (FM 21-40).

RADIOLOGICAL SURVEY

Radiological survey differs from radiological monitoring in that it determines radiation distribution and dose rates throughout a specific area. It is accomplished by a coordinated effort in response to a specific plan. Usually, the situation requires considerable emphasis on rapidly accumulating required data. This can be done most quickly by using air cavalry or other aviation assets. Another advantage of using aerial means is that aerial survey personnel are usually exposed for shorter periods than ground survey personnel.

Radiological surveyors must be dedicated to the task. A radiological survey is conducted by a team consisting of a control party and two or more survey parties. The exact size and composition of a survey team depends on the size of the area to be surveyed, command SOP, and trained soldiers available. It is important to ensure the surveyors do not acquire a cumulative radiation dose which exceeds the operational exposure guide (OEG) established by the theater commander.

A survey party usually consists of a monitor and an assistant. In cavalry units it is usually an air or ground scout vehicle crew.

In cavalry units, a control party is the agency coordinating and controlling activities of survey parties. It also correlates and

reports required data to the headquarters assigning the mission. Radiological survey operations conducted by cavalry may require more than one control party. In this case, coordination, control, and reporting follow usual command lines. For instance, a control party for a platoon's survey party is the platoon headquarters. The controlling agency for a platoon control party is its parent unit. At regimental and squadron level, a

radiological survey and control party is usually organized around staff officers having primary responsibility for nuclear warfare activities.

For a detailed discussion of radiological surveying see FM 21-40, *Chemical, Biological, Radiological, and Nuclear Defense* and FM 3-12, *Operational Aspects of Radiological Defense*.

TRAINING THE CAVALRY UNIT

When not involved in combat operations, the most important thing a cavalry unit does is train for combat operations. The principal publications setting forth training objectives for cavalry are ARTEP 17-55, *Armored Cavalry Squadron*; ARTEP 17-205, *Air Cavalry Squadron*; FM 21-6, *How to Prepare and Conduct Military Training*. The purpose of this appendix is to describe some techniques which can be used by the cavalry unit to gain the maximum possible benefits from the time and resources available.

Training to Defeat the Threat. Cavalry conducts opposing-force field training exercises. Troops maneuver two platoons against a third platoon. Squadrons maneuver two troops against a third, the two troops using Threat doctrine. *This trains units in Threat tactics and trains units to fight forces using Threat tactics.* From time to time the squadron/regimental commander should request that his parent unit coordinate opposing-force support for maneuver against the entire squadron/regiment.

Training During Periods of Limited Visibility. Threat forces are equipped with sophisticated night vision devices, as is the United States Army. Therefore, Threat forces can generally be expected to attack even during periods of darkness, fog, and snow. Cavalry must routinely train during periods of limited visibility—to defend and attack—to operate during periods of limited visibility just as during periods of unrestricted visibility. As a general rule, half the unit training should take place in darkness or bad weather.

Training for Continuous Operations. Soldiers must be trained to fight even when fatigued. The cavalry should conduct continuous field training for periods of 3, 4, and 5 days whenever possible. When this is not possible, fatigue can be added to training by conducting 24-hour exercises, starting with a move from garrison to the field training area shortly after 2400 hours.

Conducting Live-Fire Exercises. Cavalry conducts live-fire exercises as often as time and availability of training areas permit. Moving under cover of overhead indirect fire, adjusting indirect fire within a few hundred meters of protected bunkers or buttoned-up armored vehicles and firing machineguns over the heads of soldiers in trenches accustoms them to the battlefield environment and gives them confidence in supporting weapons and an understanding of the lethality of modern weapons.

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Learning to Survive in the Nuclear and Chemical Battlefield. Units learn to survive by training buttoned-up and in protective masks.

TRAINING THE STAFF AND LEADERS

There is often a tendency in any unit to concentrate on training subordinate units and neglect training the staff and individual leaders. For example, it is not necessary to wait until troops have progressed to a level of training and are ready to participate in squadron exercises before conducting training for leaders and the staff.

Staff and leadership training should parallel unit training so that when subordinate units are ready, the staff and leaders are ready.

Command post exercise in field or garrison can be conducted for the staff and all leaders down to platoon level.

Free play wargames can be arranged and conducted between units.

Tactical exercise without troops (TEWTS) can be used to train leaders. TEWTS are especially useful for training in such subjects as terrain appreciation and analysis, and map reading and tactics. Trainers should present situations and ask subordinate leaders, "How would you do it?" TEWTS can be conducted when the bulk of the troops are not available for training due to fatigue details or other commitments.

TRAINING WITH LIMITED TIME

Concurrent training during scheduled or

unscheduled breaks is a good way to cover new subjects areas and review previous training which can't be adequately covered during scheduled training. Lesson plans can be consolidated on 3x5-inch cards and carried by leaders at all times. When a break occurs, leaders can conduct classes as appropriate or as directed by their commanders. Some subjects appropriate for concurrent training are:

- Threat doctrine and vehicle identification.
- Radio telephone procedures.
- Battlefield first aid.
- Weapons maintenance and training.
- Crew drill for crew-served weapons.
- Map reading and terrain appreciation.
- Unit tactical SOP's.
- Fire commands.
- Air defense with small arms.
- Vehicle maintenance.
- FO procedures and indirect fire adjustment.
- Hand and arm signals.
- Platoon and troop SOP's.

Some subjects already covered during formal sessions can be integrated into follow-on training on a continuing basis. For instance:

- Land navigation. (EXAMPLE. SERGEANT JONES, WE ARE LOCATED AT GRID COORDINATES 123456. WHAT ARE THE COORDINATES OF THAT HILL OVER THERE?)

- Defense against NBC attack.
- Light and noise discipline.
- Road marches and assembly areas.
- Troop-leading procedures.
- Target acquisition.
- Terrain evaluation.
- Threat doctrine. (EXAMPLE. LT SMITH, WE HAVE JUST RECEIVED 6-8 ROUNDS OF 122-MM HOWITZER FIRE NEAR YOUR LOCATION AND YOUR OP HAS REPORTED SIGHTING TWO BRDM'S AND A PT-76. WHAT DOES THIS MEAN TO YOU?)
- Radiotelephone procedures.
- Communications without radio; that is, visual signals, pyrotechniques, and messengers.
- Command post exercises and simple war games can be conducted in garrison.
- Crew performance tests (tankers stakes and mechando courses) and leader reaction courses can be established in garrison locations.

GOOD TRAINING RESULTS FROM GOOD LEADERSHIP

Soldiers are strongly influenced by the example and conduct of their leaders. Leaders must live with their soldiers, share their dangers and privations as well as their accomplishments. Close personal contact reveals the desires; needs; and mental, moral, and physical conditions of soldiers. Good leaders avoid subjecting troops to useless hardships and unnecessary harrassment.

Interest in training can be stimulated by discussions initiated by leaders with their subordinates during breaks in training. During informal discussions, misunderstandings often come to light, new ideas for better training may be suggested, and understanding between seniors and subordinates increases.

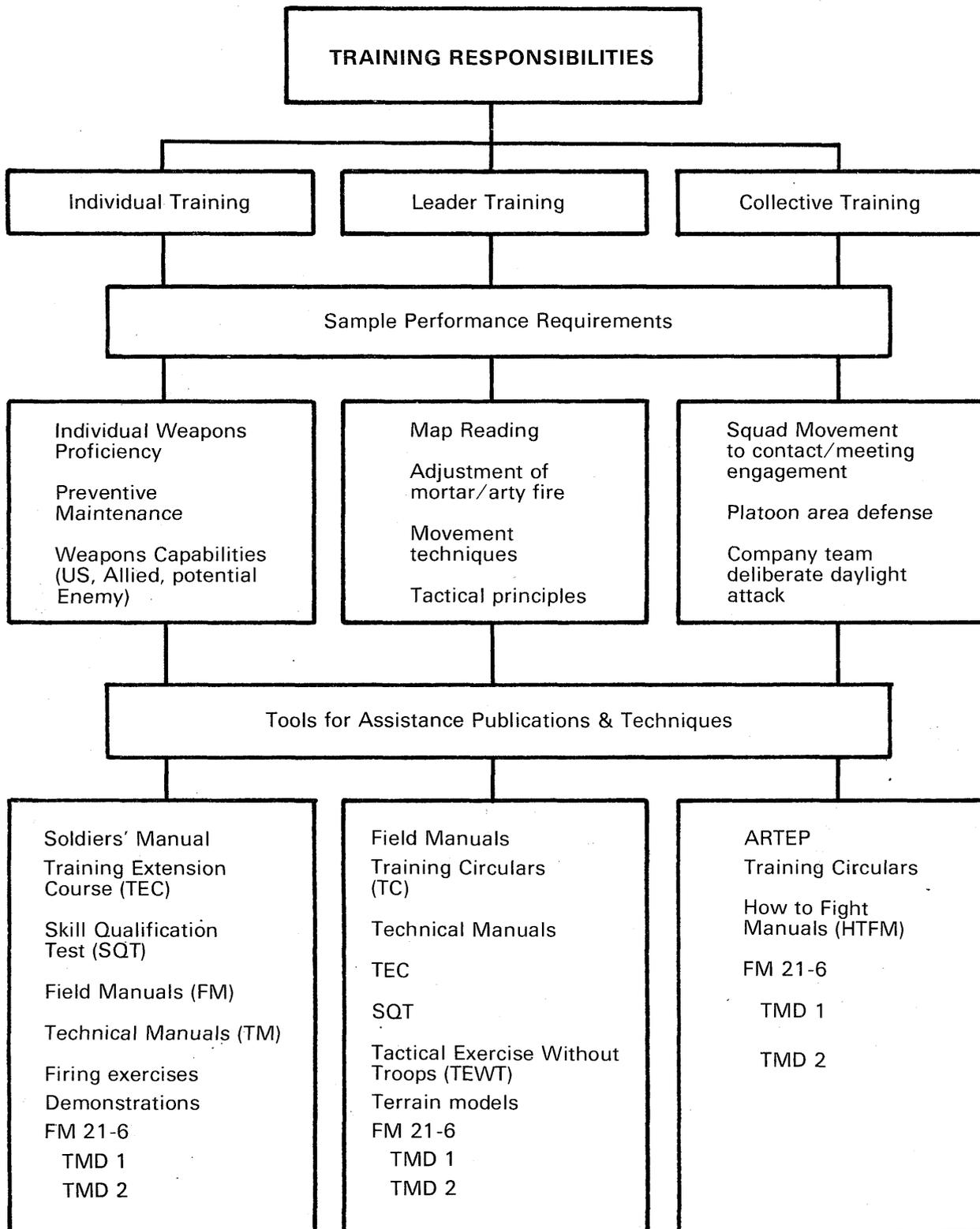
Men must be challenged to meet high standards set by leaders. Care should be exercised to ensure that standards are attainable. Competition promoted between crews and/or platoons motivates soldiers to strive for excellence, which is then properly recognized.

A poorly trained unit is likely to fail in a critical moment, probably in its first engagement. A well-trained unit is reflected in the outward appearance of its soldiers, the condition of its equipment, and its readiness for combat. Most of all, a well-trained unit is a reflection of the officers and noncommissioned officers who lead it.

TRAINING WITH LIMITED RESOURCES

Fuel shortages may limit the number of vehicles that can be moved to field training sites. When this is the case, good training can still be conducted.

- Depending on available fuel, some platoons can conduct field training while others train in garrison.
- Simple crew drill can be conducted in the motor pool.
- Simple terrain models and sand tables can be used in garrison.
- TEWTS can be conducted from terrain overlooking areas being used by other units or in areas which will not accomodate an entire troop.



LEADERSHIP

Leadership in cavalry is the art of influencing and directing men in such a way as to obtain their obedience, confidence, respect, and loyal cooperation in preparing for and executing combat operations and other missions. Leadership is based on knowledge of men. The primary duty of a leader is mission accomplishment. Everything else, including the welfare of his men, is subordinate to the mission. A cavalry unit must have high morale and esprit de corps. The basic foundation for morale and esprit de corps in cavalry is professionally competent, physically fit, brave leaders. No man should be a leader of cavalymen unless he places **honor, duty, country, and unit** before his welfare, comfort, and safety.

INGREDIENTS OF LEADERSHIP

Man, the Fundamental Instrument. Man is the fundamental instrument in war; other instruments change, but he remains relatively constant. Unless his behavior and elemental attributes are understood, gross mistakes are probable during planning and troop leading. In training the individual cavalryman, essential considerations are to integrate individuals into a group and to establish for that group high standards of discipline and professionalism without destroying individual initiative.

Physical Endurance and Moral Stamina. War is a severe test of the physical endurance and moral stamina of the individual cavalryman. To be efficient, a cavalryman must be well equipped, technically trained, physically qualified to endure the hardships of field service, and fortified by discipline based on high ideals. Strong men, inculcated with a proper sense of duty, a conscious pride in their unit, and a feeling of mutual obligation to their comrades in the group, can dominate the demoralizing influences of battle far better than men imbued only with fear of punishment or disgrace.

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Individual Worth of the Cavalryman. In spite of advances in technology, the worth of the individual cavalryman is still decisive. The dispersed nature of cavalry operations accentuates his importance. Each cavalryman must train to exploit a situation with energy and boldness and possess the idea that success depends upon his initiative and action.

Cohesion Within the Unit. Dispersion of cavalrymen caused by modern weapons and the nature of cavalry operations makes control difficult. Cohesion within a unit requires good leadership, discipline, pride in unit accomplishments and reputation, and mutual confidence and comradeship among its members.

Requirements of a Leader in Combat. Leaders of cavalrymen in combat, regardless of the echelon, must be cool and thoughtful with a strong feeling of the great responsibility imposed upon them. They must be resolute and self-reliant in their decisions, energetic and insistent in execution, and unperturbed by the fluctuations of combat.

A Good Cavalry Leader Knows and Cares for His Men. A good cavalry leader avoids subjecting his troops to useless hardships. He guards against dissipating their combat strength in inconsequential actions or harassing them through faulty staff management. He keeps in close touch with all subordinate units by means of personal visits and observation. He must personally know the mental, morale, and physical state of his troops; the conditions confronting them; and their accomplishments, desires, and needs. A cavalry leader should promptly extend recognition for services well done, lend help where help is needed, and give encouragement in adversity. A cavalry leader must be consider-

ate to the men he commands. He must also be faithful and loyal to his commander. A cavalry leader must live with his troops and share their dangers, privations, joys, and sorrows. By personal observation and experience, he will then be able to judge their needs and combat value. A cavalry leader who unnecessarily taxes the endurance of his troops will only penalize himself. The proper expenditure of combat strength is in proportion to the objective to be attained. When necessary for mission accomplishment, the cavalry leader requires and receives the complete measure of sacrifice.

Cooperation and Comradeship. A spirit of unselfish cooperation must be fostered among cavalry officers, noncommissioned officers, and men. The strong and capable must encourage and lead the weak and less experienced. If a feeling of true comradeship is firmly established on such a foundation, the combat value of a unit will increase accordingly.

Combat Value of a Unit. The combat value of a unit is determined in great measure by the soldierly qualities of its leaders and members and its will to fight. Outward marks of this combat value are found in the appearance of the men; the condition, care, and maintenance of the weapons and equipment; and the readiness of the unit for action. Superior combat value always offsets numerical inferiority. Superior leadership combined with a unit's superior combat value constitutes a reliable basis for success in battle. A poorly trained unit will usually fail in a critical moment due to demoralizing impressions caused by unexpected events in combat. This is particularly true in the first engagements of a unit. Therefore, training and discipline are of great importance. Discipline and pride derived from good training and leadership are the main cohesive forces in cavalry units.

Compatibility. A wise and capable cavalry unit leader makes sure that the men assigned to component groups of his unit are compatible, and that the composition of the groups is changed as little as possible. He will provide each group a leader in whom its members have confidence. He will see that demonstrated efficiency is promptly recognized and rewarded. He will set a personal example of military conduct, and apply the same rules of discipline to all.

Good Morale and Unity. Good morale and a sense of unit in cavalry can't be improvised; they must be planned and systematically promoted. They are born of just and fair treatment; a constant concern for the cavalryman's welfare; thorough training in basic duties; comradeship among men; and pride in self, organization, and country. Establishment and maintenance of good morale are the marks of good leadership.

Decisive Action. The first demand of war is decisive action. Cavalry unit leaders inspire confidence in their subordinates by decisiveness and the ability to gain material advantage over an initially numerically superior enemy. A reputation for failure in a leader destroys morale. The morale of a cavalry unit is that of its leader. A cavalry leader must remember that physical unfitness undermines his efficiency. Since a physically weak body keeps him from bringing a normal mind to the solution of his problems, he owes it to his men to preserve his own fitness.

MENTALITY OF A CAVALRY LEADER

Leaders of cavalymen at all echelons

must have mental mobility and responsiveness to command.

Mental Mobility. Mental mobility is the ability of a leader to project his thinking beyond the area of the immediate battle. Cavalry leaders must think in kilometers, remain aware of the tactical situation in adjacent areas, and know enemy tactics as well as the enemy knows them. Mental mobility includes:

- Boldness of concept and execution.
- Foresight and swift decisions.

In modern armor warfare, there is a definite requirement to take the calculated risk. Planning must be flexible to permit immediate adjustments when things do not go as originally planned. Cavalry leaders must be able to quickly adjust to frequent and drastic changes without undue excitement, worry, or frustration. A cavalry unit leader must visualize the probable outcome of a situation and be prepared to react accordingly as the situation develops. He must exceed the pace of the enemy and maintain at least a 5:1 loss ratio in his favor. Mental mobility must be combined with personal mobility. The cavalry unit leader must be proficient in operating from moving combat vehicles and Army aircraft. The essentials of command are carried in his head and his pocket.

Responsiveness to Command. A cavalry leader must be capable of accepting a mission-type order, clearly understanding its meaning, and immediately taking necessary action to execute the order. Efficient responsiveness in cavalry requires a highly developed degree of professional competence.

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By Order of the Secretary of the Army:

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