Chapter 2

BATTLE COMMAND

"The test of control is the ability of the leader to obtain the desired reaction from his command."

Infantry in Battle, 1939

Battle command is the art and science of battlefield decision making and leading soldiers and units to successfully accomplish the mission. Battle command includes visualizing the current state and the future state, then formulating concepts of operations to get from one state to the other at least cost. In addition to visualizing and formulating concepts, battle command encompasses assigning missions; prioritizing and allocating resources; selecting the critical time and place to act; and knowing how and when to make adjustments in the fight. The battle command system at the regimental level enables commanders to lead, prioritize, and allocate assets required to employ and sustain combat power. Cavalry commanders must observe, orient, decide, and act on their decisions quickly. Information is the key to the battle command process; therefore, the commander must have accurate and timely information upon which to base his decisions.

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Battle command of cavalry units is typically decentralized due to the size of the area of operations, vagueness of the enemy situation, and lack of information about the terrain. This places the burden of sound, timely decision making at the lowest levels. Leaders must develop a keen sense of situational awareness and constantly track the actions of subordinate units as well as those to the front, flank, and rear.

Section I. Command and Control System

FM 100-5 states that to command is to direct. Command at all levels is the art of motivating and directing soldiers and organizations into actions to accomplish the mission. Battle command incorporates two vital components—the ability to lead and the ability to decide. Both components demand skill, wisdom, experience, and moral and physical courage. Command requires the commander—

- To envision a desired end state.

- To clearly and concisely translate that vision into a statement of intent, providing a single and unifying effort.

- To formulate concepts.

- To provide the force of will to concentrate overwhelming combat power at the decisive point.

Commanders use control to regulate forces and functions on the battlefield to execute the commander's intent. As such, control involves—

- Defining limits.

- Computing requirements.

- Allocating resources.

- Describing interfaces.

- Monitoring status.

- Describing variances.

- Correcting deviations.

- Acquiring and applying the means to accomplish the commander's intent.

- Developing instructions from guidance.

- Measuring, reporting, and analyzing performance.

- Projecting change.

Control also has two vital components. First, control conforms to the principle of unity of command in which commanders typically control one echelon down and manage forces two echelons down. Second, control accounts for the dynamics of the battlefield. This part requires a reporting system to assess the situation routinely and frequently, thus enabling the commander to take action as appropriate.

The combination of command and control is referred to as the command and control system. The term *system* does not apply simply to the arrangement of equipment or use of equipment. It is an organized assembly of resources to aid planning, directing, coordinating, and controlling the organization in support of the mission. This process encompasses the personnel, equipment, communications, facilities, and procedures necessary to gather and analyze information, plan, and supervise the execution of operations.

The purpose of the command and control system is to implement the commander's will in pursuit of the objective. The system must be reliable, secure, fast, and durable. It must collect, analyze, and present information rapidly. It must communicate orders, coordinate support, and provide direction to the force. It must function despite the friction of battle—extraordinary stress, obscure situations, compressed time, competing demands, enemy interference, destruction of command posts, or loss and replacement of leaders.

Army doctrine places great demands on the command and control system. It must be responsive and flexible enough to facilitate freedom to operate, allow delegation of authority, and allow leadership to operate from any critical point on the battlefield.

Cavalry organizations are often required to begin their missions and to operate very soon after (or even before) the receipt of an operation order (OPORD). A command and control system permitting such flexibility and freedom to operate independently emphasizes certain specific operational techniques and command practices. First, it optimizes the use of time by routine use of warning orders, situation updates, and parallel/anticipatory planning. Second, it stresses standardized training in operations and staff practices to assure mutual understanding between leaders and units. Third, command and control eases execution of orders using standard language, symbols, and SOPs. Fourth, the system allows the commander to position himself wherever the situation calls for his personal presence without depriving him of the ability to respond to opportunities or changing situations.

The cavalry commander cannot expect constant or close supervision by his higher commander. Cavalry operations occur across wide areas and commanders normally operate with significant freedom of action. Close command direction is seldom possible, even when desired. Each commander in turn must provide his subordinates freedom of action for the same reason. Unity of effort is ensured by the intent of the commander assigning the mission. Each subordinate commander must

understand the intent of the commander two levels above him and the concept of his immediate commander. They exercise initiative within the latitude permitted to achieve the intent as battlefield conditions develop.

The extent and variety of the tasks confronting a commander require the cooperative endeavors of many people, the integration of many complex equipment systems, and a sensible division of work. The battle command system accomplishes these tasks through three interrelated components:

- Command and control organization.

- Command and control process.

- Command and control facilities and communications.

Section II. Command and Staff Relationships

COMMAND

Command is the authority that a commander lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources. It includes planning the employment, organization, direction, coordination, and control of the cavalry unit to accomplish assigned missions. It also includes the responsibility for health, welfare, morale, training, and discipline of the soldiers.

The commander is responsible for all that his unit does or fails to do. He cannot delegate this responsibility. The final decision and responsibility remain with the commander. Success, however, requires a commander who delegates authority and fosters an organizational climate of mutual trust, cooperation, and teamwork. He must also promote an understanding of procedures and a common basis for action.

The commander discharges his responsibilities through an established chain of command. He holds each subordinate commander responsible for the actions of his unit. When the commander assigns a mission to a subordinate, he also delegates the necessary authority and provides him with the resources, guidance, and support needed to accomplish the mission. The commander must allow the subordinate commander freedom of action. Combat does not provide the luxury of supervising subordinates in detail. The commander remains free to address the unit as a whole and to anticipate future actions. Subordinate commanders and leaders adhere to this philosophy.

The exercise of command is a reflection of the leadership style of the commander. Leadership is the process by which the commander influences others to accomplish the mission. Leadership provides purpose, direction, and motivation in combat. In peacetime training, the commander demonstrates his capability through frequent and personal contact with his subordinates. Once in combat, the commander's presence will often be felt over the radio. His personal presence is felt at the most critical location on the battlefield. At this point, his leadership is reinforced by the manner in which he controls the execution of the unit. How the commander uses this staff and the command and control system is a reflection of his leadership style.

STAFF

The staff is an extension of the commander. The staff assists the commander in decision making by acquiring, analyzing, and coordinating information. More importantly, the staff screens the mass of information available and presents only what is essential to the commander with a recommendation so he can make the best decision. The commander specifically delegates authority to the staff or particular staff officers. The authority he delegates is a factor of the commander's leadership style, staff officer's personality, mission of the unit, immediacy of the operation, and the relationship of the staff officers' functional area to the unit's primary mission. The commander delegates authority to the staff to take final action on matters within the SOP. This authority does not imply command by staff officers over subordinate elements of the regiment or squadron.

The staff is organized specifically to be a single, cohesive unit. All staff members must know not only their own functions and roles, but also the functions of the other staff members. The staff establishes and maintains a high degree of coordination and cooperation internally and with staffs of higher, lower, and adjacent units. Staff efforts focus on supporting the commander in the exercise of command and on helping him support subordinate commanders in the execution of their mission.

Staff activities center on five common functions to assist the commander:

- Provide timely and accurate information.

- Anticipate requirements and prepare estimates.

- Determine courses of action and make recommendations.

- Prepare plans and orders.

- Supervise execution of decisions.

Section III. Command and Staff Responsibilities

This section discusses how the commander organizes his staff to accomplish the mission. It includes the role and relationship of the staff, the authority and responsibilities of the staff, and the functional group of staff sections.

REGIMENTAL AND SQUADRON COMMANDER

"The real reason why I succeeded in my own campaigns is because I was always on the spot."

Wellington

The commander analyzes and restates the mission, designs the concept of operations, organizes the forces, and provides support to subordinate units. He issues mission orders with sufficient details for his subordinate to plan and lead their units. He acknowledges the professional competence and expertise of his subordinate commanders and allows them flexibility to accomplish their mission. He relies on his staff and subordinate commanders for advice and assistance in planning and supervising operations. He must understand their capabilities and limitations. He must train them to achieve his intent during his absence, the failure of communications, or changes in the situation.

When not in battle, the commander operates from the vicinity of the tactical operations center (TOC). At the TOC, he conducts his planning, interfaces with the staff, and rests. He frequently departs the TOC to conduct reconnaissance, inspect, receive orders, brief subordinates, and visit soldiers.

During battle, the commander positions himself where he can best make decisions during critical points of the battle. He positions himself to follow and influence operations and maintains communications with higher, lower, and adjacent units. He reacts immediately to direction from the corps, division, or regimental commander. When his organization or mission changes, he reorganizes as needed. Teamwork, functional SOPs, and a clear understanding of the mission permit subordinates to quickly translate a mission order into action.

The commander must know the enemy; his organization, his weapon systems, and how he fights. He must know the terrain over which his unit will fight and the adjacent terrain the enemy may use to support or reinforce. The commander must be aware of the operational limitations of his unit. He ensures air and ground cavalry efforts are fully synchronized to accomplish the mission.

Once the operation starts, subsequent orders and quick responses are the norm. The orders must be simple and clear to enable swift execution upon receipt. The commander prepares to accept mission orders, and without further detailed

instructions, takes action to execute the order within the intent of his commander. He limits the number of subordinates with whom he routinely deals. His staff refines raw data by filtering the information so the commander can focus on the combat critical information. The regimental commander fights squadrons and tracks troops. Squadron commanders fight troops and track platoons.

SUBORDINATE COMMANDERS

Assigned troop and company commanders answer to the squadron commander for the discipline, combat readiness, and training of the unit as well as the maintenance of its equipment. They must be proficient in the tactical employment of their units and those combat support elements. They must know the capabilities and limitations of their personnel and equipment. They must be intimately familiar with the capabilities and limitations of both air and ground cavalry operations.

During combat, the troop and company commanders have the same command responsibilities as the squadron commander. They continuously coordinate with each other and integrate air and ground operations without constant direction from the squadron commander. They provide current combat information to the squadron commander and remain flexible to execute missions upon receipt to meet changing situations on the battlefield.

SQUADRON STAFF

"A commander must accustom his staff to a high tempo from the outset, and continuously keep them up to it."

Erwin Rommel

The staff consists of those officers and enlisted soldiers who assist the commander in planning and supervising tactical operations. The staff reduces the demands on the commander's time and assists him by providing information, making estimates and recommendations, preparing plans and orders, and supervising the execution of orders issued by the commander. The staff synchronizes combat support and combat service support operations to ensure total integration of support with the commander's concept. The staff also assists subordinate commanders by anticipating problems, providing informal staff responses when appropriate, and providing assistance in functional areas. The organization of a typical staff is depicted in Figure 2-1. SOP defines the responsibilities of key personnel to preclude overlaps and to make sure all functions are adequately supervised. Detailed discussions of staff officer and section responsibilities are in FM 101-5.
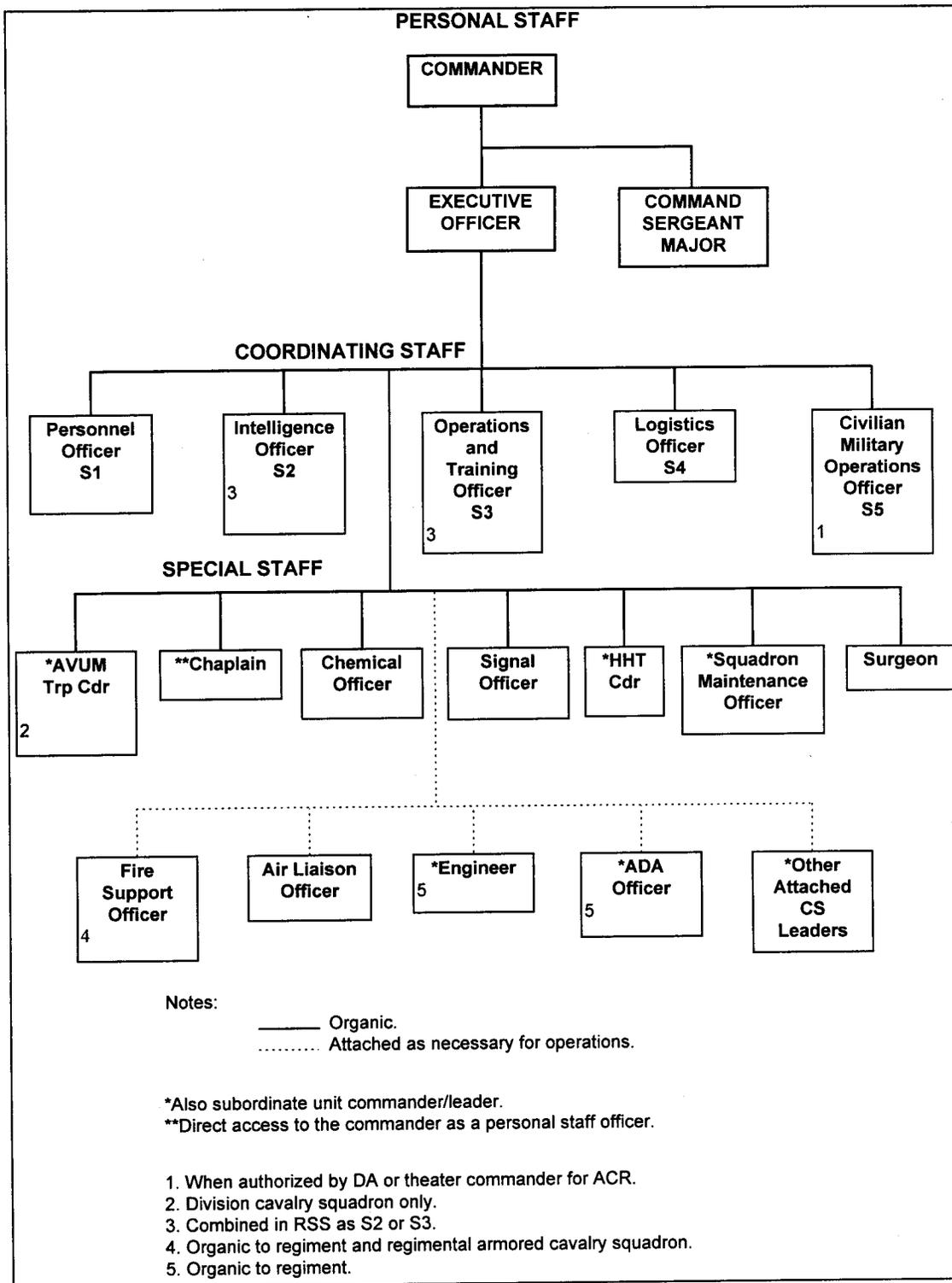
PERSONAL STAFF

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                          COMMANDER

              EXECUTIVE              COMMAND
              OFFICER                SERGEANT
                                     MAJOR
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COORDINATING STAFF

| Personnel Officer S1 | Intelligence Officer S2 3 | Operations and Training Officer S3 3 | Logistics Officer S4 | Civilian Military Operations Officer S5 1 |

SPECIAL STAFF

| *AVUM Trp Cdr 2 | **Chaplain | Chemical Officer | Signal Officer | *HHT Cdr | *Squadron Maintenance Officer | Surgeon |

| Fire Support Officer 4 | Air Liaison Officer | *Engineer 5 | *ADA Officer 5 | *Other Attached CS Leaders |

Notes:

———— Organic.

·········· Attached as necessary for operations.

*Also subordinate unit commander/leader.

**Direct access to the commander as a personal staff officer.

1. When authorized by DA or theater commander for ACR.
2. Division cavalry squadron only.
3. Combined in RSS as S2 or S3.
4. Organic to regiment and regimental armored cavalry squadron.
5. Organic to regiment.

Figure 2-1. Typical staff.

Executive Officer (XO)

The XO is second in command and the principal assistant to the commander. He performs a variety of functions. He is responsible for assignment of tasks and the efficient, coordinated, and prompt response of the staff. He directs, supervises, and ensures coordination of staff work except in those specific areas reserved by the commander, thereby freeing the commander from routine details. During combat operations, the XO is positioned in the TOC where he is responsible for its operation. The XO directs and coordinates combat support in consonance with the commander's plan and ensures continuous combat service support. The XO, assisted by the operations sergeant, maintains routine reporting, coordinates the activities of the liaison personnel, and is always planning ahead. The chemical, signal, and flight operations officers work directly for the XO. During lulls in the battle, the XO may go to the trains and personally determine the status of combat service support operations. He remains current on the tactical situation and is prepared to assume command on a moment's notice. The commander trains the XO and allows him to command during training exercises to prepare him to assume command in combat.

Command Sergeant Major (CSM)

The CSM is the senior noncommissioned officer (NCO) in the regiment and the squadron. He acts in the name of the commander when dealing with the other NCOs in the unit and is the commander's primary advisor concerning the enlisted soldiers. He is not an administrator, but must understand the administrative/logistical and operational requirements of the squadron. He is the most experienced soldier in the squadron and keeps his finger on the pulse of the command. He focuses his attention on any function critical to the success of the operation. This requires that the CSM have mobility; he must be able to move where the commander needs him most. The commander establishes a close relationship with his CSM and defines his responsibilities and authority. The CSM assists the commander in the following ways:

- Training troop first sergeants.

- Monitoring NCO development, promotions, and assignments within the squadron.

- Being directly involved in planning and assessing soldier training tasks. He ensures soldier training tasks are identified and trained to support the performance of collective (unit) mission essential task list (METL) tasks.

- Monitoring the level of proficiency of training and morale of subordinate units.

- Providing recommendations and expediting the procurement and preparation of replacements for subordinate units.

- Monitoring food service and other logistical operations.

- Conducting informal investigations.

- Assisting in controlling squadron movement through a breach in a critical obstacle or at a river crossing.

- Making coordination for a squadron passage of lines.

- Leading the squadron advance/quartering party during a major movement.

- Assisting in the combat service support effort during the battle when the XO is in the TOC or forward.

Adjutant (S1)

The S1 has primary responsibility for all personnel matters. The S1 normally operates from the combat trains command post (CTCP) collocated with the S4. He moves as necessary to accomplish his mission. He shares supervisory responsibility for logistics with the S4. The S1 and S4 must cross-train to enable them to conduct continuous operations.

The regimental S1 is assisted by the HHT adjutant general (AG) platoon, which handles personnel services, postal services, morale support, and administrative services for the regiment. The AG platoon operates out of the regimental support area.

The squadron level personnel and administrative center (PAC) operates in the field trains under the supervision of the PAC supervisor. The PAC maintains contact with the S1 on the administrative/logistics net from the field trains command post. The S1 will take selected members of the section forward with him to assist in operating the CTCP.

Intelligence Officer (S2)

The S2 normally remains at the TOC where he has the communications assets to coordinate intelligence activities. He keeps the XO updated on the enemy situation and works closely with the fire support element and assistant S3 to ensure information is passed between the staff. The S2 is responsible for collecting and providing current information and analyzed intelligence of tactical value concerning terrain, weather, and enemy for all commanders and the remainder of the staff to facilitate planning and execution of combat operations. He is the expert on the enemy and understands in detail how he fights. He is closely involved in planning subsequent operations. The S2 converts the information requirements of the commander into priority intelligence requirements (PIR) and ensures they are provided in the unit plan. He is also the facilitator of the intelligence preparation of the battlefield (IPB) process. Working with the commander, operations officer, and other staff officers, the S2 participates in the development of the decision support template.

The regimental S2 and the regimental S3 are assisted by the regimental analytical control element in analyzing and directing electronic warfare, intelligence, and OPSEC missions. The regimental TOC analytical control element is the nerve center of regimental intelligence and electronic warfare operations. The S2 staff section, regimental TOC analytical control element, and military intelligence (MI) company are the key elements of the regimental intelligence system.

Operations Officer (S3)

The S3 is the commander's principal assistant for matters pertaining to the organization, employment, training, and operations of the unit and supporting elements. He also has a special relationship with the commander and normally has direct access for functional area matters. He monitors the battle, ensures the necessary combat support assets are provided when and where required, and anticipates developing situations. The S3, assisted by his operations sergeant and assistant, maintains routine reporting, coordinates the activities of liaison personnel, and is always planning ahead. The S3 and S3 air/assistant S3 remain responsive to directives from higher headquarters, the commander or XO, as well as the needs of subordinate commanders and supporting organizations. The S3 ensures his soldiers and equipment are organized, trained, and maintained to support the XO in the TOC.

In battle, the S3 is normally in the command group or on a secondary avenue of approach, axis of advance, or with the supporting effort. If unit operations orient in several directions simultaneously, he may assume individual control of a part of the battlefield as directed by the commander. The S3 maintains close coordination with the S4 for combat service support status.

Supply Officer (S4)

The regimental S4 provides logistics information to the regimental commander and functions as the regiment's logistic planner. He coordinates with squadron XOs and S4s about the status of equipment and supplies. The regimental S4 has representatives in both the main and rear command posts. He personally participates in the planning process at the main command post. The regimental S4 coordinates with the regimental support squadron commander and his staff to ensure the regimental commander's logistics priorities are understood and supported.

Due to the unique environment of cavalry logistics, the squadron S4 is often employed differently from battalion S4s. Employment of the squadron S4 is discussed in greater detail in Chapter 10. The cavalry squadron S4 focuses on staff responsibilities that mirror the responsibilities of the regimental S4. He provides logistics information to the squadron commander. He functions as the squadron's logistics planner. He coordinates with troop first sergeants and XOs about status of equipment and supplies. He also coordinates with supporting units and higher headquarters staffs to ensure logistics support is continuous. The S4 is in charge of the CTCP.

Civil Affairs Officer (S5)

When authorized for the regiment, the S5 serves as the principal staff officer for the commander in all matters concerning the civilian impact on military operations and the political, economic, and social effects of military operations on civilian personnel. He has staff responsibility for those activities embracing the relationship among the military forces, the civil authorities, and people in the area of operations. The S5 has primary coordinating staff responsibility for the areas of civil affairs and civil-military operations. When the S5 is not authorized, the S3 usually assumes responsibility for these functions.

Air Defense Officer

The air defense officer (ADO) is the commander or leader of the organic, direct support, attached, or operationally controlled air defense artillery (ADA) unit providing support. In the regiment, he is the ADA battery commander. For regimental squadrons, he is the task organized platoon/section/team leader from the battery. In division cavalry, he normally comes from the division ADA battalion. The air defense officer is the commander's primary advisor on all air defense matters. The ADO, after coordinating with the S2 for the aerial portion of the IPB, provides the commander with recommended air defense priorities. He takes into account asset criticality, vulnerability, recoupability, and threat. The ADO works closely with the air liaison officer, fire support officer, and flight operations officer to coordinate A2C2 matters that have either direct or indirect impact on the regiment or squadron. Because of his duties, the ADO is not at the TOC continuously, but is present during planning and is part of the orders group. In the absence of an ADA unit, the unit S3 assumes responsibility for these functions.

Air Liaison Officer

The air liaison officer is an Air Force officer who is a member of the tactical air control party (TACP). The air liaison officer moves with the commander as part of the command group. He may serve as a forward air controller or have additional officers assigned to the TACP as forward air controllers. He advises the commander and staff on the employment of offensive air support, including close air support, battlefield air interdiction, joint suppression of enemy air defenses, aerial reconnaissance, and airlift.

Aviation Unit Maintenance (AVUM) Troop Commander

In division cavalry, the AVUM troop commander is responsible for preventive maintenance, repair, and parts replacement for aircraft and aviation equipment. He is also responsible for evacuation of unserviceable modules, components, and end items. He coordinates closely with the S4.

Chaplain

The chaplain and chaplain assistant compose the unit ministry team (UMT). The UMT operates out of the combat trains. The chaplain is not restricted to a fixed location within the unit. He moves as necessary to perform his duties. He normally has direct access to the commander. The UMT provides pastoral care, counseling, and advice to the commander on matters of religion, morale, and morals.

Chemical Officer

The chemical officer advises the commander on NBC defensive operations. He is the commander's primary advisor for decontamination, smoke/obscurants, flame, and NBC reconnaissance operations. The regimental chemical officer, along with his staff section, is responsible for coordinating NBC tasks among supporting NBC assets, including the regimental chemical troop. The squadron chemical officer, assisted by an NCO, also serves as an assistant operations officer in addition to NBC duties. Both officers (regimental/squadron) work directly for the S3 and are responsible for integrating NBC defense into all aspects of unit training.

Signal Officer

The signal officer is a signal corps officer. He normally works for the XO at regiment and at squadron. He operates from the TOC, advising the commander on all signal matters, including the location of command posts, signal facilities, best uses of signal assets, and the use of signal activities for deception. He monitors the maintenance status of organic signal equipment. Additionally, he coordinates the preparation and distribution of the signal operation instructions (S0I) and supervises the communications security accounting activities.

Engineer Officer

The regimental staff has an engineer officer and staff section. The engineer officer normally locates in the main command post under the direct supervision of the XO or he may be located in the regimental TOC. The regimental engineer advises and assists the regimental commander in all aspects of engineer planning, coordination, and execution. The regimental engineer is the terrain expert. He works closely with the S2 in the IPB process to develop an accurate detailed analysis of the effects of weather on terrain and how these effects impact on the mission. The regimental engineer determines the requirements for engineer support, to include recommending the support relationship. He is assisted by the assistant regimental engineer. The regimental engineer prepares engineer estimates and engineer portions of the plans and orders, to include the engineer annex. The engineer officer provides the commander and staff information on the enemy's engineer capabilities.

The squadron engineer is the commander or leader of the direct support, attached, or operationally controlled engineer unit supporting the squadron. For a regimental squadron, he comes from the regimental engineer company or a

supporting corps engineer battalion. For division cavalry, he normally comes from the division engineer brigade. He is the commander's primary advisor on all engineer matters. Because of his duties, he cannot be at the squadron TOC continuously. He is in the TOC during planning and is part of the orders group. In the absence of an engineer unit, the S3 assumes responsibility for engineer functions.

Flight Operations Officer

In division cavalry, the flight operations officer is part of the S3 section and works in the TOC for the S3. He is assisted by an NCO and flight operations specialist. He is the operations expert on army aviation in the squadron. He assists in planning and managing the integration of air cavalry in the squadron's scheme of maneuver. Some of his responsibilities are listed below.

- Coordinate with the aviation brigade for aviation support.
- Receive Army airspace command and control (A2C2) control measures and directives from the aviation brigade or division A2C2 element.
- Incorporate applicable A2C2 measures into the scheme of maneuver.
- Maintain A2C2 overlay in squadron TOC.
- Establish and monitor flight-following net (air traffic control net) for squadron aircraft, when required.
- Maintain squadron flying hour program and monitor crew endurance.
- Disseminate A2C2 changes to the air cavalry troop (ACT) and the AVUM (F Troop) commander.
- Assist in operations of the S3 section.
- Assist the S3 and the fire support officer (FSO) in planning required SEAD and J-SEAD fires.

Fire Support Officer

The FSO is the commander's principal advisor and coordinator for fire support matters. His primary duty is to help the commander integrate all fires to support the scheme of maneuver. This includes planning, coordinating, and executing fire support. He is also responsible for coordinating with the S3 and the flight operations officer for required SEAD and J-SEAD fires. He frequently moves with the commander during tactical operations to expedite fire support. The FSO coordinates the efforts of subordinate FSOs and maintains digital and voice communications to supporting artillery. The fire support section (FSS) assists the FSO. In the armored cavalry regiment, the regimental and squadron FSO and FSS are organic at each level. Troop FSOs and fire support teams (FIST) are organic to squadron howitzer batteries. In division cavalry, the fire support elements and troop FISTs are dedicated assets from division artillery.

HHT Commander

The regimental HHT commander serves as the headquarters commandant for the main command post and answers directly to the regimental XO. The HHT commander is responsible for the support, security, and movement of the main command post and for supporting all elements of the HHT. He normally delegates the function of maintenance support to the HHT XO and the function of supply to the HHT first sergeant. Although he is a unit commander, not a staff officer, the squadron HHT commander fulfills a unique role. Employment of the HHT commander and his relationship with the squadron S4 are discussed in Chapter 10.

Liaison Officer

Liaison officers are in the S3 section of the regiment and squadron. They represent the commander at the headquarters of another unit for effecting coordination and for promoting cooperation between the two units. Through personal contact, they facilitate the exchange of information and ensure mutual understanding and unity of purpose before, during, and after combat operations. Liaison officers operate from the TOC where they are normally briefed and debriefed by the XO or TOC shift leader.

Regimental Support Squadron Commander

The regimental support squadron commander is the regimental commander's main combat service support operator. He advises the regimental commander concerning supply, maintenance, field and health services, and implementation of the combat service support functions throughout the regiment. The regimental support squadron commander has operational control over all units and elements within the regimental support area for movement, security, terrain management, and synchronization of sustainment activities. He coordinates and implements plans for assigned rear operations responsibilities within the regimental support area. He usually works through the regimental XO and coordinates with the regimental S4. He is located in the rear command post.

Squadron Maintenance Officer (SMO)

The SMO is responsible for coordinating all activities including recovery, evacuation, repair, and replacement of combat equipment to sustain the operational readiness of the squadron. The SMO is responsible for all ground tactical equipment. The SMO coordinates and supervises the efforts of the squadron maintenance platoon and exercises staff supervision over unit maintenance in the troops. He also functions as the maintenance platoon leader. The maintenance warrant officer assists the SMO by providing technical assistance and supervision to the maintenance platoon. During combat, the SMO operates from the combat trains or a unit maintenance collecting point (UMCP). In the absence of the S4, he controls the combat trains.

Surgeon

The squadron surgeon advises and assists the commander on matters concerning the fighting strength of the command to include preventive, curative, and restorative care. He advises the commander on the combat health support of the command and of the medical threat present in the occupied or friendly territory within the commander's area of responsibility. He determines requirements for the requisition, procurement, storage, maintenance, distribution, management, and documentation of medical equipment and supplies. The regimental surgeon is normally located at the clearing station in the regimental support area. The squadron surgeon and the physician's assistant operate the squadron aid station located in the combat trains. The division cavalry surgeon is also a qualified flight surgeon.

TROOP AND COMPANY-LEVEL STAFF

The leaders at troop and company level perform functions similar to their squadron counterparts.

Troop XO

As second in command, the troop XO supervises operations from the troop command post. The XO is also assigned a combat vehicle so he can quickly assume command of the cavalry troop in case the commander becomes a casualty or if the mission requires his presence forward. He stays abreast of the tactical situation within the squadron and troop. He manages the flow of combat information between the troop and squadron. He advises the commander, represents him in his absence, and prepares to assume command. The XO ensures that organic and supporting combat support assets are continuously synchronized with the troop's scheme of maneuver. With assistance from the troop first sergeant, he plans and coordinates combat service support for the troop.

First Sergeant

The troop first sergeant is primarily responsible for sustaining the troop's ability to fight. He supervises the procurement and distribution of fuel, ammunition, food, water, clothing, equipment, replacements, and repair parts. He receives personnel replacements and assigns them to subordinate elements as needed. He ensures soldiers wounded or killed in action are evacuated by directing the combat medic teams. He is also responsible for the evacuation and recovery of damaged combat equipment. He leads the troop combat trains. He supervises NCO development and soldier training. As a troubleshooter and advisor, he assists the commander in tactical operations as needed.

Platoon Leader

The platoon leader is responsible to the commander for the discipline, combat readiness, welfare, and training of the platoon as well as the maintenance of its equipment. He must be proficient in the tactical employment of the platoon. He must also know the capabilities and limitations of the platoon's personnel and equipment. The platoon leader's responsibility in combat is twofold:

- Accomplish all missions assigned to the platoon in accordance with the troop commander's intent.
- Preserve the fighting capability of the platoon.

Platoon Sergeant

The platoon sergeant leads elements of the platoon as directed by the platoon leader and assumes command of the platoon in the absence of the platoon leader. The platoon sergeant assists the platoon leader in maintaining discipline, training, and controlling the platoon in combat. He supervises the maintenance of equipment, supply, and other combat service support matters. He advises the platoon leader as required.

Mortar Section Sergeant

The mortar section sergeant is responsible for providing indirect fires to support the troop commander's concept of the operation. He trains, supervises, and maintains the mortar section and its equipment.

Supply Sergeant

The supply sergeant requisitions, picks up, transports, and issues or stores supplies and equipment for the troop. He normally leads the LOGPAC (logistics package). He supervises the troop supply section. He works closely with the first sergeant to accomplish these tasks. He evacuates enemy prisoners of war and assists in evacuating KIA (killed in action) remains.

Maintenance Sergeant

The maintenance sergeant supervises prompt recovery of damaged or inoperable equipment on the battlefield. He leads the troop maintenance section. He works closely with the first sergeant to accomplish these tasks.

Communications Sergeant

The communications sergeant prepares the troop command post and its assigned crew for combat operations. He assists the XO in the troop command post during combat operations. Where no command post is authorized, he operates out of the combat trains. Within his capability, he repairs communications equipment of subordinate elements. He is responsible for distributing the unit SOI and COMSEC equipment.

NBC NCO

The troop NBC NCO is responsible for troop NBC defense activities. He supervises radiological monitoring, chemical detection, and decontamination operations (less patient decontamination). He assists in maintaining NBC equipment and in training NBC equipment operators and decontamination teams.

Section IV. Command and Control Process

This section discusses the decision-making process. This process is how the commander and staff accomplish the mission. It is a cycle that begins and ends with the commander. It is the procedures and techniques the commander uses to find out what is going on, decide what action to take, issue instructions, and supervise execution.

PRINCIPLES

Military decision making is both an art and a science. The commander and staff continually face situations that involve uncertainties, questionable or incomplete data, and several possible alternatives. They must not only decide what to do, but also recognize when a decision is necessary. A systematic approach to problem solving assists in accomplishing the task. How a commander or staff officer arrives at a decision is a matter of personal determination; however, sound conclusions, recommendations, and decisions result only from a thorough, clear, unemotional analysis of all facts and assumptions relating to the situation. Subordinate commanders must have sufficient time to plan and prepare. Subordinate units require at least two-thirds of the available time to develop their plans.

TROOP-LEADING PROCEDURES

All unit commanders use troop-leading procedures to prepare their unit for battle (see Figure 2-2).
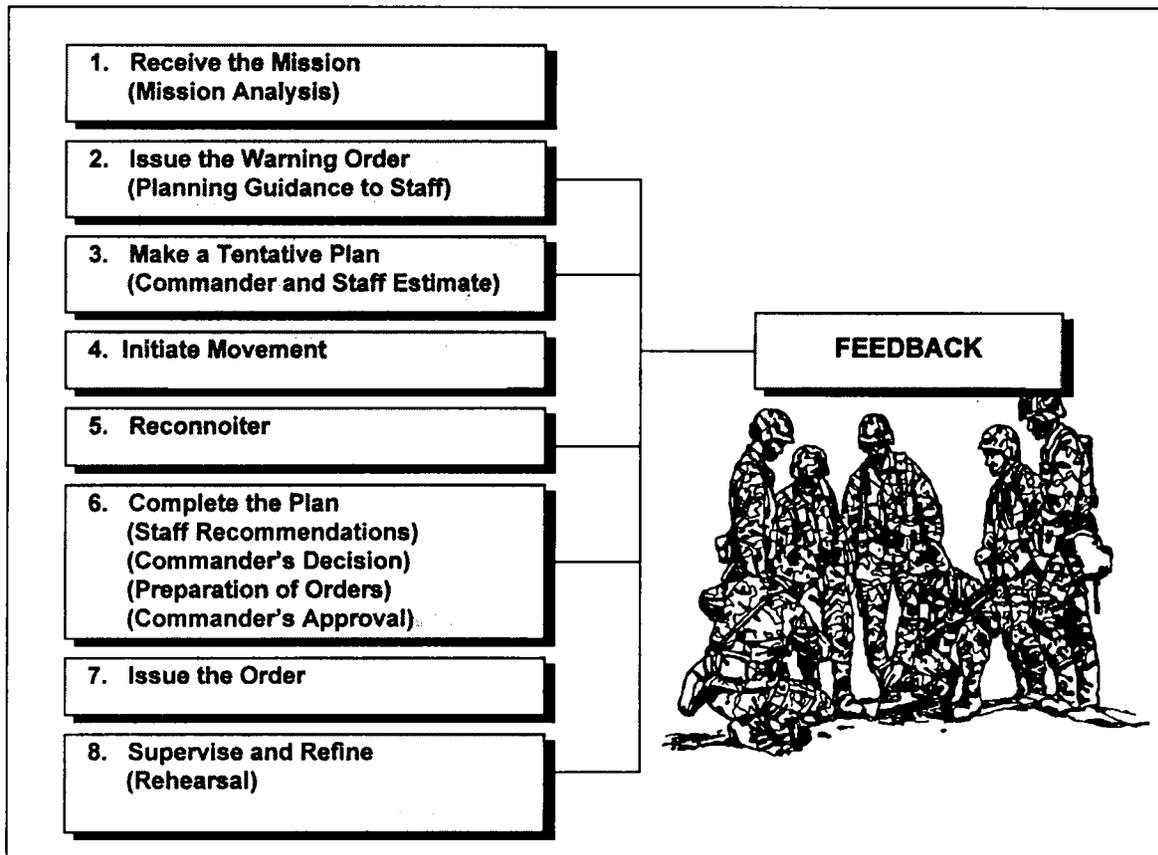
Figure 2-2. Troop-leading procedures with staff input.

Receive and Analyze the Mission

Upon receipt of an order, the commander conducts a mission analysis. He may be assisted by the XO or the S3 in this step. The commander determines the who, what, when, where, and why elements of the mission. He ensures he understands the commander's intent two echelons higher. His analysis should spell out the following:

- Specified tasks.
- Implied tasks.
- Essential tasks.
- Intent of the higher commander.
- Any constraints or limitations.

This step concludes with a restated mission statement.

Issue the Warning Order

The commander immediately issues a warning order after finishing the mission analysis. The warning order is a brief oral or written message that provides essential information to the staff and subordinates. This allows them to begin their planning and preparation to maximize the use of available time throughout the unit. A

warning order is critical at troop level to initiate precombat checks and to prepare for movement. The commander may follow up this order with additional guidance.

Make a Tentative Plan

During this step, the commander and the S3 use the restated mission, commander's guidance, and higher commander's intent to develop several possible courses of action.

There are tools commanders may use to choose a plan. The commander selects the tool he will use based on the time available and the size of his staff.

DECISION-MAKING PROCESS

The decision-making process is a systematic approach to decision making, which fosters effective analysis by enhancing application of professional knowledge, logic, and judgment. Decision making occurs within the context of the troop-leading procedures and encompasses the estimate of the situation (see Figure 2-3).
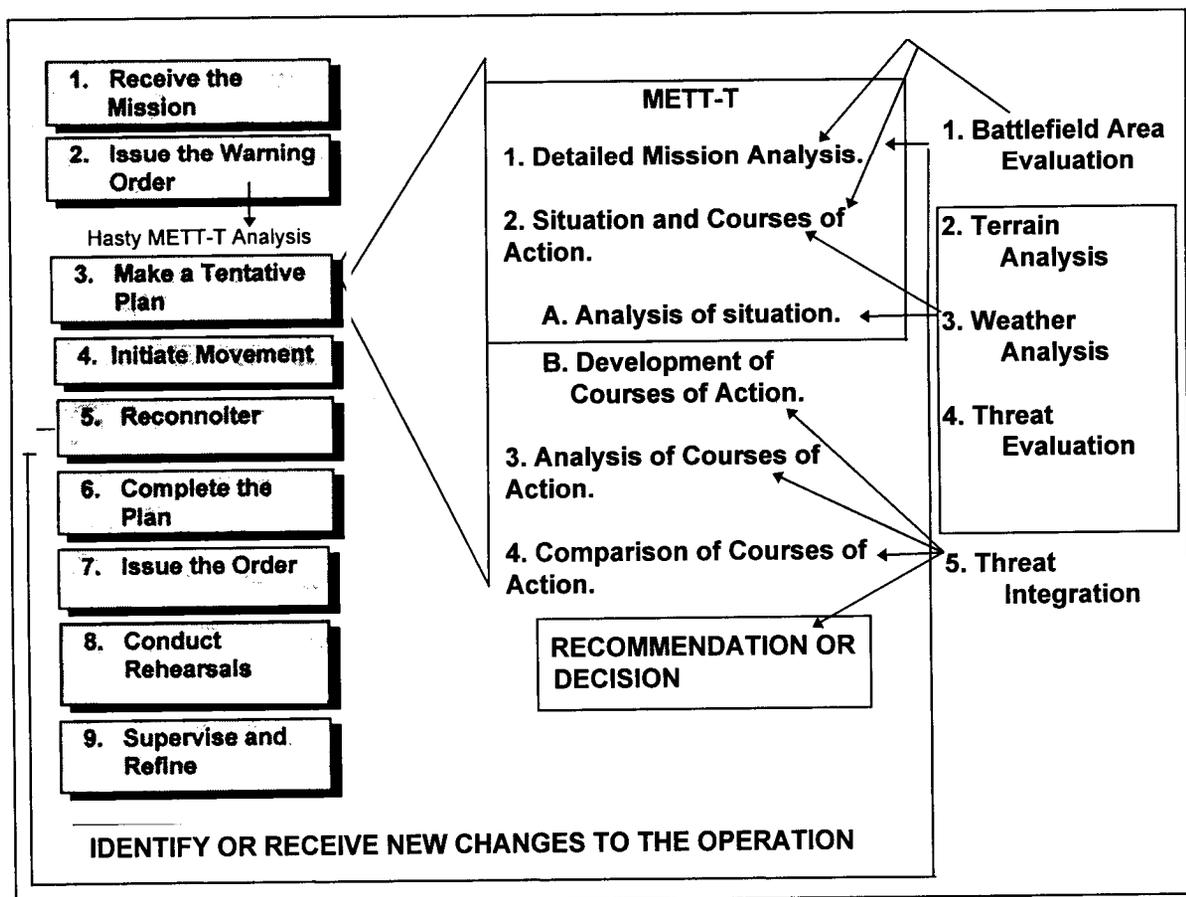

Figure 2-3. The military decision-making model.

This process consists of six broad steps, which are the foundation of decision making:

1. Recognize and define the problem.

2. Gather facts and make assumptions.

3. Develop possible solutions.

4. Analyze each solution.

5. Compare the outcome of each solution.

6. Select the best solution available.

The military decision-making process revolves around an established, proven, analytical procedure (see Figure 2-4). It is a continuous and sequential process that allows the commander and his staff to examine the battlefield and reach logical decisions. The key elements of the process areas follows:

- Estimate updates (information gathering).

- Mission analysis.

  – Restated mission.

  – Commander's guidance.

- Course of action development, analysis, comparison, and recommendation.

- Course of action approval.

- Preparation, approval, issuance of plans, orders, and fragmentary orders (FRAGO).
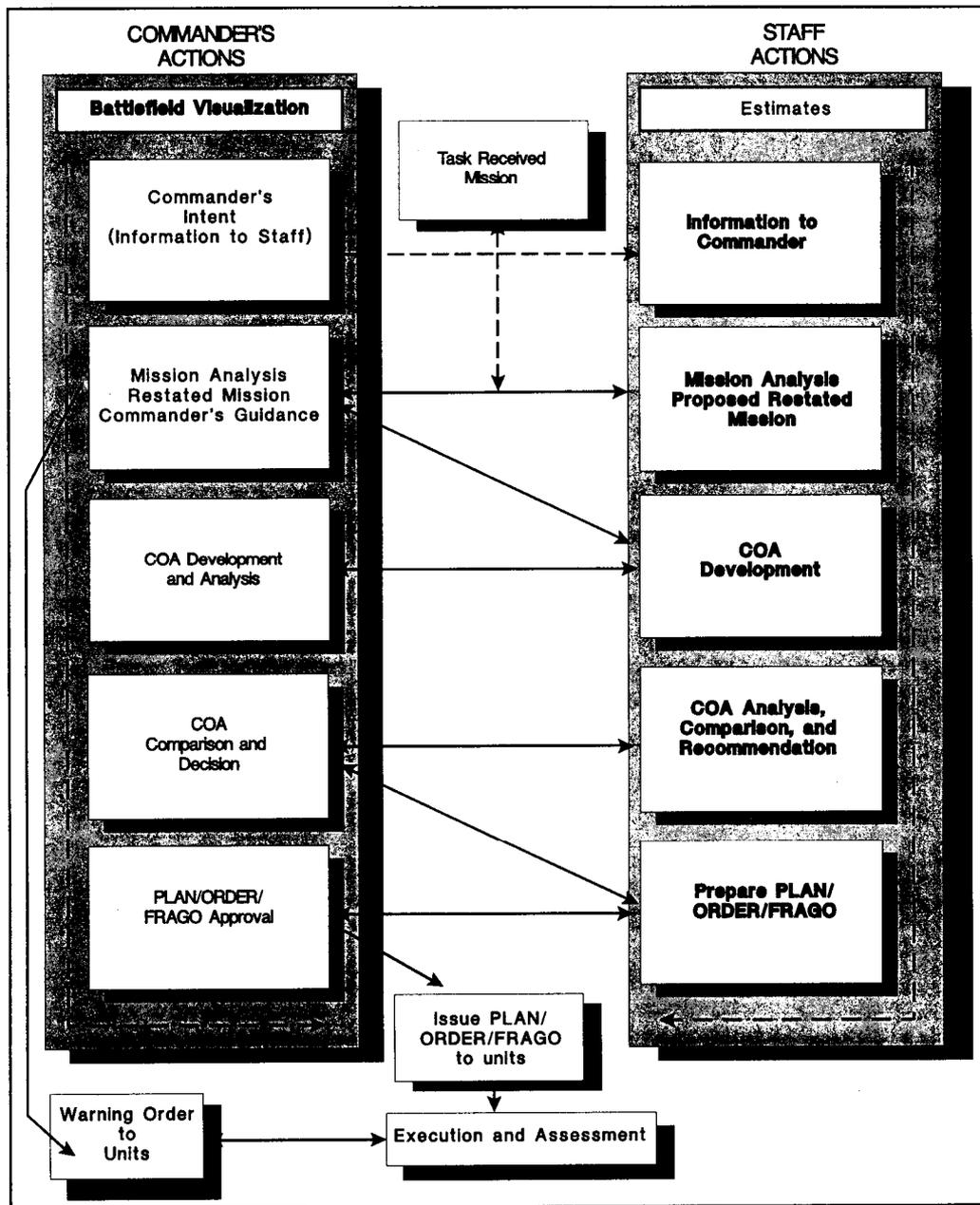
- Execution.

Figure 2-4. Decision-making process.

Both the commander and his staff prepare an estimate of the situation, although it lies first and foremost in the commander's mind. He prepares the commander's estimate (mentally or in writing) while continuing to collect information and analyze METT-T as well as other relevant factors that could affect the mission. He integrates his personal knowledge of the situation, his assessment of subordinate commanders, and any relevant details gained from his staff. Analysis and subsequent comparison of the developed courses of action help determine the best one to accomplish the

mission. Staff members help the commander by preparing their estimates. The different types of estimates are listed below.

- Personnel estimate.

- Intelligence estimate.

- Operations estimate.

- Logistics estimate.

- Civil-military estimate.

- Other staff estimates (prepared by special staff officers).

- Other staff estimates (prepared by special staff officers).

While the military decision-making model is a deliberate analytical process, the commander has the option to modify this process based on his needs and experiences. METT-T and unforeseen circumstances may make it difficult if not impossible to follow a deliberate process. Therefore, the commander must abbreviate or accelerate the military decision-making model in order to arrive at a logical decision in the shortest amount of time.

The military decision-making model provides a firm foundation for decision making during continuous operations. It is extremely important that the commander thoroughly understand and use the decision-making model in training. This process helps the commander and his staff apply thoroughness, clarity, sound judgment, logic, and the use of professional knowledge to a mission requirement. Effective decision making by competent, experienced, and confident battle commanders is key to the process. For a detailed discussion on military decision making, see FM 101-5.

Initiate Necessary Movement

While preparing the tentative plan, or immediately following, the commander initiates necessary movement of key elements and units. This movement may include those elements that assist in command and control of the operation, conduct reconnaissance, pre-position combat service support assets, or conduct liaison. The entire unit may be required to displace over a long distance to a forward assembly area.

Conduct Reconnaissance

The commander conducts a physical reconnaissance of the area of operations, movement routes, forward assembly area, and line of departure if possible. This reconnaissance includes subordinate organic and attached leaders. Reconnaissance may be conducted on the ground or in the air. Engineer reconnaissance is an integral part of this effort. The IPB saves valuable time by providing detailed terrain analysis, allowing leader efforts to focus on critical items. Time or the situation may

preclude a physical reconnaissance. In this case, a map reconnaissance is conducted. Again, the IPB is essential for a successful effort.

Complete the Plan

The commander uses information gained during the reconnaissance, new information from corps or division, and updated information from the staff to complete the plan. Changes to courses of action and completion of war gaming are conducted. The commander considers staff recommendations and makes his decision. At this point, the regimental/squadron commander delegates the authority for completion of the order to his staff, with the S3 or the XO having the ultimate responsibility to prepare the order for distribution. The commander may sign the finished order or delegate his S3 or XO to authenticate it in his name. Troop commanders normally prepare simple SOP-based oral orders.

Issue the Order

Ideally, the commander briefs the plan to the orders group on the ground chosen for the operation. Alternatively, the order can be briefed in the TOC or at a forward position. Overlays and copies of the order should be in the TOC or at a forward position and issued at the start so notes can be made on them during the briefing. When time is short, the order can be distributed by messenger or issued by radio. Methods of issuing the order include the written five paragraph order with overlays, overlay order, FRAGO, and oral FRAGO. The method selected reflects the amount of time available and the urgency of the mission.

Orders are communications—written, oral, or by signal—that convey instructions from a superior to a subordinate. The terms order, command, directive, and letter of instruction are synonymous for all practical purposes. Directive and letter of instruction normally apply to high levels of command and set broad goals, aims, or policies. An operation order implies discretion as to the details of execution whereas a command does not. Cavalry commanders use combat orders in issuing instructions. Combat orders have the following characteristics:

- Clarity.

- Completeness.

- Brevity.

- Recognition of subordinate commanders' prerogatives.

- Use of the affirmative form.

- Avoidance of qualifying expressions.

- Authoritative expression.

- Timeliness.

Figure 2-5 describes the type of combat orders that cavalry commanders use. FM 101-5 and supporting manuals discuss orders and formats.

TYPE	PURPOSE	PRODUCTS
OPLAN	Prepared prior to hostilities: contingencies general defense plan. Covers single operation or a series of connected operations carried simultaneously or in succession. Becomes OPORD when implementing conditions occur. Result of deliberate planning.	Five-paragraph format with all appropriate annexes. Contains assumptions.
OPORD	Directive issued for effecting coordinated execution of an operation. Includes tactical movement orders. Result of deliberate planning.	Five-paragraph format with annexes. Overlay order: overlay intent
WO	Preliminary notice of an action or order to follow. Gives subordinates time to plan and prepare. Used for all operations/orders.	No fixed format. Brief written/oral order.
FRAGO	Abbreviated form of OPORD used to make changes in missions to units or inform them of changes in the tactical situation. Used for mission orders. Result of hasty planning.	Brief. Written, overlay, or oral. Format highlights changes to five-paragraph order. Use existing graphics as much as possible.

Figure 2-5. Types of combat orders.

Immediately after the order is issued, the commander and staff answer questions from subordinate leaders. Once all questions have been answered, the commander gathers his subordinate leaders and conducts the confirmation brief. The confirmation brief is a tool the commander uses to ensure his subordinates understand the mission, his intent, and his guidance for the conduct of the operation. The confirmation brief adjourns when the commander is confident his subordinates understand their mission, his and the higher commander's intent, the concept of the operation, the scheme of maneuver, the timeline, and the type and location of the rehearsal.

Rehearse

Rehearsals are of paramount importance before executing any plan. Rehearsals help in the following ways:

- Clarify the commander's intent.
- Expose combat, combat support, and combat service support or disconnected activities in the plan.
- Reinforce the scheme of maneuver and fire support plan.
- Focus on actions and decision points critical to mission accomplishment.
- Ensure subordinates explicitly understand their missions, how their missions relate to one another, and how each mission relates to the commander's plan.
- Provide feedback to the commander.

Commanders/unit leaders conduct rehearsals at their appropriate levels. Rehearsals at all levels are key to ensuring understanding the concept of the operation, verifying specific responsibilities, timing actions, and identifying backup procedures to synchronize combat operations. Rehearsals should be as complete as time allows. In time-constrained situations, the rehearsal can be abbreviated to focus on the most critical events of the operation, as prioritized by the commander. Commanders should avoid a chronological mindset.

METT-T will determine the type or extent of the rehearsal. An accurate timeline issued in the warning order identifies and assists in the prioritization of tasks to be rehearsed. There are several techniques for rehearsing:

- Backbrief.
- Radio rehearsal.
- Sketch map rehearsal.
- Terrain model rehearsal.
- Key leader rehearsal.
- Full rehearsal.

See Appendix A for more information on rehearsals.

Supervise and Refine

This step requires the collective efforts of the commander, staff, and subordinate commanders. Prior to execution, backbriefs by subordinate commanders or leaders ensure the intent is understood, problems corrected, and coordination refined. Units conduct rehearsals of movements, drills, fire commands, and formations whenever possible. The commander must rely on his staff and subordinate commanders for assistance and advice in supervising and refining the plan during execution.

Plans are the initial basis of action, but the commander must expect considerable variation from them during execution of operations. The command and control system must allow the tactical leaders freedom of action to position wherever the situation calls for their personal presence without depriving them of the ability to control subordinates. The commander must retain mental flexibility and agility to change the plan during execution and to rapidly perform the steps of the troop-leading procedures to arrive at a decision and issue a FRAGO. The staff and subordinate commanders must be equally adept at gathering information, making recommendations, and executing subsequent orders. They must do this continuously, rapidly, and with brevity.

Higher commands will often order cavalry units to perform missions immediately or with very little planning time. These orders, normally issued after commencement of an operation, will be issued in fragmentary form. A FRAGO is an abbreviated form of an operation order that contains information of immediate concern to subordinates. A FRAGO has no specified format; however, commanders should use the five-paragraph operation order, abbreviated to address changes and modifications in the existing order, thereby eliminating the need for restating information contained in the base order. The commander must ensure he includes enough information for his subordinates to clearly understand his intent. If time and the situation permit, the commander should issue the FRAGO face-to-face with his subordinates. Commanders issue orders over the radio when distance prevents issuing the order face-to-face and time does not allow for a written order. A radio order normally contains the following elements:

- Changes to task organization.
- Situation.
- Concept—mission statements to subordinate units.
- Fire support.
- Coordinating instructions.
- Service support.
- Command and signal.

INTELLIGENCE PREPARATION OF THE BATTLEFIELD

IPB is the foundation of successful decision making. Each decision-making tool uses IPB, which is conducted continuously throughout the decision-making process. IPB develops intelligence about the enemy, weather, and terrain, which the commander and staff need to complete their planning. It enables the commander and staff to see, rather than visualize mentally, where both friendly and enemy forces can move, shoot, and communicate. It provides a graphic data base for comparing friendly and enemy courses of action. It serves as a graphic intelligence estimate. Weather and terrain overlays and enemy templates are the principal graphic products used to integrate the battlefield environment for the decision-making process. IPB is developed for both the area of operations and the area of interest. It is used in all

operations. IPB is a continuous process consisting of four steps that are performed each time IPB is conducted:

- Define the battlefield environment.
- Describe the battlefield effects.
- Evaluate the threat.
- Determine threat courses of action.

IPB integrates enemy doctrine with the battlefield effects—weather and terrain-as they relate to the mission and to the specific battlefield environment. It provides a basis for determining and evaluating enemy capabilities, vulnerabilities, and probable courses of action. Terrain and weather analysis and threat evaluation may be performed simultaneously or in sequence. Determining the threat courses of action is performed last by integrating weather, terrain, enemy, and friendly forces. Threat integration determines their combined effects on friendly combat operations.

IPB production is labor intensive. During peacetime, the S2 builds an extensive data base for each potential area in which a unit will operate. Once hostilities begin and current data becomes available, the intelligence estimate becomes dynamic, changing as the situation changes on the battlefield.

The S2 defines the battlefield environment. IPB done before an operation shows gaps in the intelligence data base, establishes the limits of the area of interest and identifies characteristics of the battlefield that will affect both the threat and friendly forces. When possible, requirements are satisfied before the operation begins. Remaining gaps in information frequently become priority intelligence requirements. IPB provides the basis for a dynamic collection plan and a guide for the effective employment of collection, reconnaissance, and surveillance resources.

The S2 does not conduct IPB in a vacuum. He is assisted by other members of the staff. He has access to the detailed products produced at higher headquarters and can routinely request the products he needs. He normally has a direct link to the TOC analytical control element at the higher headquarters.

Threat evaluation consists of a detailed study of enemy forces, their composition and organization, tactical doctrine, weapons and equipment, and supporting battlefield functional systems. Threat evaluation determines enemy capabilities and how they operate relative to doctrine and training or how they would fight if not restricted by weather and terrain.

Threat evaluation also includes an evaluation of threat high-value targets, critical nodes, and doctrinal rates of movement. High-value targets and movement rates are reevaluated during threat integration within the constraints imposed by the terrain and weather.

The threat information is now integrated into the analysis of the terrain and weather. Determination of threat courses of action relates enemy doctrine to the terrain and weather to determine how the enemy might actually fight within the specified battlefield environment. This integration is sequentially accomplished through the development of doctrinal, situation, event, and decision support templates (see Figure 2-6).
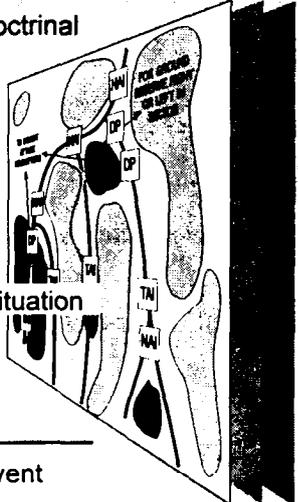
TEMPLATE	DESCRIPTION	PURPOSE
Doctrinal	Enemy doctrinal deployment for various types of operations without constraints imposed by weather and terrain. Composition, formations, frontages, depths, equipment numbers and ratios, and HVTs are types of information displayed.	Provides the basis for integrating enemy doctrine with terrain and weather data.
Situation	Depicts how the enemy might deploy and operate within the constraints imposed by the weather and terrain.	Used to identify critical enemy activities and locations. Provides a basis for situation and target development and HVT analysis.
Event	Depicts locations where critical events and activities are expected to occur and where critical targets will appear.	Used to predict time-related events within critical areas. Provides a basis for collection operations, predicting enemy intentions, and locating and tracking HVTs.
Decision Support	Depicts decision points keyed to significant events and activities. The intelligence estimate is in graphic form.	Used to provide a guide as to when tactical decisions are required relative to battlefield events.

Figure 2-6. Threat integration templates.

A template is a graphic illustration (normally drawn to scale) of enemy force structure, deployment; or capabilities. It provides a basis for seeing the battlefield and for command estimates and decisions affecting resource allocation. It is used as a comparative data base to integrate what is known about the enemy with a specific weather and terrain scenario. Templates enable the commander to visualize enemy capabilities, predict likely courses of action before combat, and confirm or refute them during combat. They provide a means for continuous identification and assessment of enemy capabilities and vulnerabilities.

Templates portray a variety of enemy characteristics such as disposition of forces, weapons, fortifications, and equipment. Battlefield functional systems, like artillery or engineers, may also be templated. Templates can be added to, changed, or deleted as the situation dictates.

Doctrinal templates are the primary products that result from threat evaluation, Doctrinal templates convert enemy order of battle data into graphic displays that model how the enemy might look according to doctrine and training without the effects of weather and terrain considered. They portray various enemy echelons and types of units for various capabilities and schemes of maneuver. Doctrinal templates are used to-

- Develop situation templates,
- Assist in identifying types of units.
- Identify gaps in intelligence holdings and in the collection plan.
- Assist in locating enemy units, weapons, equipment, unit boundaries, and high-value targets.
- Assist in locating and identifying command and control, combat support, and combat service support elements.

The situation template is basically a doctrinal template with the terrain and weather constraints applied. It shows how the threat forces might deviate from doctrinal dispositions, frontages, depths, and echelon spacing to account for the effects of the terrain and weather. These templates focus on specific mobility corridors. Situation templating is basically a visual technique. By placing a doctrinal template over a segment of a mobility corridor, the analyst adjusts units or equipment dispositions to depict where they might actually be deployed in the situation. Time and space analyses are important in developing situation templates. They are used to war-game the battlefield.

Situation templating is the basis for event templating. Event templating is the identification and analysis of significant battlefield events and enemy activities that provide indicators of the enemy course of action. By knowing what the enemy can do and comparing it with what he is doing, we can predict what he will do next. This is an important analysis factor in determining the enemy's posture and movement. Knowing when and where enemy activity is likely to occur on the battlefield provides indicators of enemy intentions, or verifies that projected events did or did not occur.

As the enemy force is visualized moving along a mobility corridor, critical areas become apparent. These areas are significant because they are where significant events and activities will occur. It is within these areas that targets may appear. These areas are designated as named areas of interest (NAI). An NAI is a point or area along a mobility corridor where enemy activity will confirm or deny a

particular enemy course of action. The NAIs must be observed to be effective. Therefore, the number and location of designated NAIs are tied to the unit's ability to observe them.

The event template depicts NAIs along each mobility corridor and the relationship of events along all mobility corridors. It provides a means for analyzing the sequence of activities and events that should occur for each enemy course of action and how they relate to one another. The event template is developed by mentally war gaming each enemy course of action from a start point to potential enemy objectives.

Event templating is the basis for decision support templating. The decision support template is essentially the intelligence estimate in graphic form. It relates the detail of event templates to decision points that are of significance to the commander. It does not dictate decisions to the commander, but it does identify critical events and threat activities relative to time and location that may require tactical decisions. It provides a structured basis for using experience and judgment to reduce battlefield uncertainties.

Areas along each avenue of approach and mobility corridor where the commander can influence enemy action through successful interdiction are called target areas of interest (TAI). The TAIs are usually areas that were earlier identified as NAI. They are areas where units can delay, disrupt, destroy, or manipulate the enemy force. They are also areas suitable for attacking high-value targets.

A TAI is an engagement area or point, usually along a mobility corridor, where the interdiction of threat forces by maneuver, fires, or jamming will deprive or reduce a particular threat capability. It can also cause him to abandon a particular course of action or require the use of unusual support to continue the operation. In the latter option, TAIs must be terrain-dependent to inhibitor deny movement.

Example TAIs include the following:
- Key bridges.
- Road junctions.
- Choke points.
- Drop zones and landing zones.
- Known fording sites.

Following the selection of TAIs, decision points are identified. The location of decision points is largely influenced by the availability and capability of friendly fire and maneuver systems; therefore, their selection is primarily an S3 function.

Decision points identify what battlefield events may require tactical decisions and when these decisions must be made so the commander can synchronize his forces. Decisions must be made early enough to ensure they can be implemented in

time to achieve the desired effects. Decision points equate time to specific points on the battlefield. They are determined by comparing times required to implement decisions, enemy movement rates, and distances.

A detailed discussion of IPB is in FM 34-130 and example IPB procedures are in FM 17-97 and FM 17-98.

Section V. Command and Control Facilities

The commander organizes his staff to accomplish the mission. He develops an organization that is flexible enough to meet changing situations. The facilities from which the commander and his staff operate are closely aligned with the command and control organization. They provide processing and transmitting information and orders necessary for effective command and control. They sustain the operation through continuity, planning, and coordination of combat support and combat service support. The command and control facilities used in a tactical situation are listed below.

- Tactical command post (TAC CP).

- Main command post.

- Combat trains command post (CTCP).

- Alternate command post.

- Rear command post.

These facilities are not distinct groups, nor are they appropriate for all levels of command. Overlap does occur and redundancy is necessary to ensure adequacy and survivability of the command and control system. Most functions performed in a command post fall into one of three mutually supporting groups: those that directly relate to the control and direction of the on-going battle, those that support the force, and those that relate to planning future operations. Figure 2-7 illustrates the relationship between command post facilities, their functions, and the command and control organizations. FM 71-100 and FM 101-5 provide techniques for organizing these facilities.

FUNCTION	FACILITY	REGIMENT	SQUADRON	TROOP
Command Support Current Operation	TAC CP Command Group	S3 (as required) S2/S3 Staff Rep (Others as Necessary)	S3 (as required) S2/S3 Staff Rep (Others as Necessary)	None
Control/ Sustain Current Operation; Operation Planning	Main CP/ TOC	XO; Staff Sections for S2, S3, S5, FSE, TACP, Engr, TOCSE; RSO; RS1/RS4 Attachments; Support	XO; Staff Sections for S2, S3, FSE, Engr, TACP, Flt Ops, Comm(-); SSO; Attachments; Support	CP; XO, Comm NBC
Sustain Current Operations; Planning	CTCP		S1, S4, Staff Sections for S1/S4	1SG, Cbt Trains
Assume CP Functions	Alternate CP	TAC CP, ALC, Rear CP, Sqdn CP	TAC CP, ALC, Trp CP	1SG, Plt Ldr
Sustainment; Admin Operations; Field Trains Command and Control	Rear CP	RSS TOC; RS1/ RS4 Rep	HHT CP	None

Figure 2-7. Command post echelons.

The following are some considerations that affect how the command and control facilities organize for combat operations:

- Missions, tasks, and resources must be in reasonable balance. The commander considers what must be done to accomplish the current mission and organizes and allocates sufficient resources to each element. The efficiency, effectiveness, and convenience of the commander and staff elements are important concerns.

- Functional responsibilities and authority must be clearly established. Functional grouping of staff sections, or elements of the sections, promotes efficiency and coordination. When the command and control facility is echeloned, the authority of each echelon must be clearly defined in SOPs.

- A smaller command and control element is more mobile, requires less time to setup and displace, and requires less transportation.

- Echeloning more than one command and control element allows the commander greater efficiency and effectiveness. This redundancy enables him to move freely while maintaining control, and makes his presence felt where needed most to provide leadership and to influence the battle.

- Communications with adjacent, subordinate, and higher headquarters and the ability to maintain communications during displacements must be provided. Echeloning command and control elements depends on good, continuous communications. The signal officer must be included in the early stages of planning for command post locations to ensure adequate communications.

- The commander must organize and train to do in peacetime what will be required in combat, not what is most expedient or convenient.

Command posts and their supporting communication systems are high-priority targets. They present radio frequency, thermal, acoustic, visual, and moving target signatures that are easy to detect. They must be made less vulnerable or risk destruction or disruption by electronic means. Some protective measures for command posts are as follows:

- Locate on reverse slopes to deny enemy direct or indirect fire effects,

- Locate in urban areas to harden and reduce infrared or visual signature.

- Disperse command post subelements.

- Displace frequently.

- Maintain redundant, separate facilities.

- Remote antennas.

- Use low power settings on radios.

Under most circumstances, survivability requires that a combination of techniques be employed. Survivability measures must also be balanced against the requirement for retaining effectiveness. While frequent displacement might reduce command post vulnerability, the command and control functions may be seriously degraded. This is particularly true if the enemy is capable of detecting and targeting a command post more rapidly than it can be set up.

COMMAND GROUP

The command group is located well forward, with appropriate communications means, to see and command the battle at the most critical point. The command group will generally consist of the following personnel:

- Commander.

- Air liaison officer.

- Fire support coordinator (FSCOORD) or fire support officer (FSO).

- S3 (as required).

- S2/battlefield intelligence coordination center (BICC) (as required).

- Engineer officer (as required).

The command group is not a permanent organization. It is organized and operated according to the commander and the needs of the current situation. It is highly mobile, displaces often, and may move continuously. Since cavalry frequently operates on wide frontages, the commander may place the S3 at a second critical location on the battlefield.

The command group fights the battle. It synchronizes the fight by arranging battlefield activities to achieve maximum effect on the enemy. It coordinates fires and movement in time and space to concentrate at the decisive point.

The commander positions himself so he can see the battle and issue appropriate orders at critical times. The air liaison officer either positions himself with the commander or locates where he can see the priority target area requiring close air support. The FSCOORD/FSO normally positions himself forward with the commander to facilitate synchronization of fires. The vehicle commander remains on the vehicle with the commander and the S3 and assists in operating radios, posting maps, repositioning, or freeing the commander and the S3 to concentrate on the battle.

TACTICAL COMMAND POST

Cavalry frequently operates over long distances, wide frontages, or extended depths. The commander maintains adequate internal communications over these distances as well as external links to the controlling headquarters. The TAC CP is the facility that supports this continuity of command and control. The TAC CP may serve as a long-term or temporary facility. The TAC CP, in some cases, may be viewed as a forward echelon of the TOC. Requirements for long-term operations dictate that the TAC CP cannot be formed at the expense of the TOC. The command group uses the TAC CP as a base. The regiment also operates a heliborne TAC CP as required. It is used by the commander or the S3 for fast-moving operations, extended frontages, or rapidly changing situations.

The S3 normally runs the TAC CP with the assistance of personnel from the S2 and S3 sections. Representatives of special staff officers may be present as required. The S3 positions the TAC CP well forward on the battlefield. It is highly mobile and relies on frequent displacement, small size, and comparatively low electronic signature to provide security. The TAC CP keeps a battle map the same as the TOC and provides the commander with a reasonably secure place to plan operations and issue orders.

The TAC CP controls the ongoing operation, provides the commander with critical combat information, and coordinates immediately available fire support. Additional functions of the TAC CP areas follows:

- Develop combat intelligence of immediate interest to the commander.
- Provide priorities and planning guidance for combat support and combat service support activities to the XO located in the TOC.

- Maintain communications to receive, process, and pass routine reports while the TOC displaces.
- Serve as net control station for command FM net.
- Serve as an alternate command post.

MAIN COMMAND POST

The main command post is composed of functional cells that serve as the control, coordination, and communications center for regiment/squadron combat operations. These functional cells include the headquarters cell, current operations cell, plans cell, intelligence cell, a fire support cell, and a combat service support cell. The corps normally provides the regiment with a variety of communications assets and intelligence system downlinks that become part of the main command post. Liaison officers from other headquarters report to and perform their duties at the main command post. The XO is responsible for operations at the main command post.

The location of the main command post varies according to the type of operation in which the unit is engaged. The primary considerations in positioning the command post are communications, accessibility, and survivability. The command post is arranged to facilitate work and security, to smooth traffic flow, to take advantage of cover, and to permit quick displacement. When possible, the command post is located in built-up areas using maintenance facilities, garages, or barns large enough to accommodate it. Support assets collocate at the command post; however, their vehicles and communications equipment are dispersed and camouflaged to reduce the electronic and visual signature. Where built-up areas cannot be used, the command post should be placed on a wooded reverse slope to provide cover and concealment from enemy observation and fires. Adequate road networks are needed to support command post traffic.

Detailed unit SOPs outline command post configurations and functions of individuals assigned. Configurations are flexible to accommodate terrain, the situation, and losses of equipment. Both hasty and long-term configurations are planned.

Tactical Operations Center

The TOC is the largest cell of the main command post. The TOC contains future, current, and close operations cells. The TOC is the principal planning organization for the unit. When the TAC CP is not deployed, the TOC controls close operations. Additionally, the TOC ensures combat service support operations remain integrated. The TOC provides information and assistance to the commander and his subordinate commanders. The TOC anticipates future combat support and combat service support requirements and pushes assets forward before needs are reported.

The TOC is responsive to requests and has a sense of urgency at all times. Other functions of the TOC are as follows:

- Collate information for the commander.
- Acquire and coordinate combat support assets.
- Provide reports to higher headquarters.
- Provide intelligence to subordinate units.
- Plan for future operations.
- Provide terrain management.
- Maintain communications.
- Monitor combat service support status.
- Provide target value analysis.
- Coordinate with adjacent units.

TOC PERSONNEL

The XO controls the TOC. It is composed of the S2 and S3 sections, the S1 and the S4 as appropriate, elements of the communications platoon, and the fire support element. It can also include engineer, air defense, and other representatives, depending on the mission of the unit. The nucleus of the TOC is the three functional areas of the S2, the S3, and the fire support element. Other elements are arranged around this nucleus.   Standardizing TOC configurations facilitates rapid displacement, establishment, and efficient operations. Internal arrangements must facilitate staff coordination, provide adequate work space and communications assets, and reduce the number of personnel physically present inside the TOC.

Personnel in the TOC monitor operations on a 24-hour basis. They maintain communications with organic, higher, and adjacent units to stay abreast of the situation; post maps; maintain records; and send reports as required.

TOC OPERATIONS

Available personnel are organized to provide effective, continuous operation of the TOC. Establishing shifts provides a sufficient quantity of personnel to operate the TOC and the required expertise to make decisions on major issues.

The standard shift evenly divides available personnel based on staff function and expertise. This method provides standardized teams, enhanced teamwork, and simplicity. Disadvantages include a break in the continuity of operations during shift change and possible absence of a key staff officer when needed. Adequate shift change procedures reduce continuity problems.

A variation of the standard shift is the heavy/light shift. This method places a majority of personnel on duty when significant activity is ongoing or anticipated. The light shift consists of fewer soldiers with those off duty remaining on call. This

method provides flexibility based on mission requirements and the presence of key personnel when needed.

The staggered shift staggers the times that personnel come on and off duty. Each soldier works a shift length based on section and duty requirements. This method precludes a break in the continuity of operations but may be more complex to manage and support.

Regardless of the method used, several considerations apply. The XO is not placed on a duty shift since he is second in command and works as necessary. Personnel who do not work permanently in the TOC are not integral parts of a duty shift. This includes liaison officers and any attached special staff officers who are unit leaders or commanders. Additionally, members of the command group and TAC CP are not included. These personnel integrate into the existing manning schedules when present at the main command post for an extended period. The XO uses replacement or wounded officers and NCOs as augmentation. Using replacement leaders on the staff initially integrates them into the unit with minimum disruption. They may replace current staff officers who assume leadership roles in subordinate units. Any manning method used must retain flexibility to accommodate personnel departing from the TOC for specific duties and to adapt to changing situations and available personnel. Needlessly disrupting the rest of personnel rapidly degrades their effectiveness.

Figure 2-8 illustrates advantages and disadvantages of the different manning methods.

METHOD	ADVANTAGES	DISADVANTAGES
Standard Shift	Simple	Lack flexibility
	Standardized	Break in continuity
	Balanced	Key personnel may be absent
	Shift Leaders	
Heavy/Light	Key personnel available when needed	Disrupt sleep plans
	Flexible schedule	Not balanced
	Shift leaders	Break in continuity
Staggered Shift	Continuity of operations	More complex
	Balanced	No fixed shift
		Class I difficult

Figure 2-8. TOC shift operations.

Support Elements

The regimental command post may have a large support element consisting of organic and corps communications assets, the S2 regimental TOC analytical control element, intelligence and EW system downlinks, a security force, maintenance, and supporting or attached unit representatives. Combat support troops and companies of the regiment do not collocate their command posts at the regimental command post. Squadrons normally have a small support element for security and service support.

Service support of the command post is the responsibility of the HHT commander. He normally accomplishes this by delegating his authority to the HHT first sergeant. Support is provided to the main command post, TAC CP, and command group.

Command Post Security

The TOC is a lucrative target. The first line of security for the TOC is to prevent the compromise of its location through OPSEC and COMSEC measures. These measures include the following:

- OPSEC.
  - Use covered and concealed locations or buildings.
  - Do not indicate TOC location by signs.
  - Post security and use protective wire and mines.
  - Do not allow vehicles to congregate in the vicinity of the TOC.
  - Camouflage against ground and air observation.
  - Enforce noise and light discipline.
- COMSEC.
  - Use low power and keep transmissions short.
  - Displace radio teletypewriter and air liaison officer to another location for transmissions.
  - Remote radios whenever possible (from outside of TOC area).

The actual defense of the command post is the XO's responsibility. The regimental XO delegates this responsibility to the HHT commander who serves as the headquarters commandant. The headquarters commandant's responsibilities include security, movement, service support, and maintenance. The squadron does not have an officer dedicated to this function. The squadron XO normally tasks a staff officer in the TOC to perform the duties of the headquarters commandant.

A perimeter defense is initially established around the TOC and manned by TOC and TOC support personnel. The perimeter includes fighting positions, antiarmor mines, anti-intrusion devices, and protective wire to supplement the fighting positions. For continuous operations, the sleep areas should be organized so that teams are near their positions on the perimeter.

Off-duty shift personnel from the TOC may be used for security duties along with other personnel working in the TOC area. The senior TOC NCO normally coordinates the security shift schedule. All personnel must understand their security duties. A high degree of security must be maintained during displacement. The priority of work for establishing security generally follows this order:

1 – Establish initial security.

2 – Position crew-served weapons and vehicles.

3 – Position remaining personnel.

4 – Clear fields of fire.

5 – Emplace obstacles.

6 – Prepare fighting positions.

7 – Establish wire communications systems.

8 – Prepare alternate and supplementary positions.

9 – Select and prepare routes for supply and evacuation.

The ground fires of ADA elements in the area may be integrated with the fire plan for the command post. The most important factors in defense of the command post are that all personnel know where their positions are and that positions are well prepared and tied into each other. An alarm to occupy fighting positions should be an SOP item and the occupation of these positions practiced. When attacked or threatened, security becomes the primary task of all personnel. TOC operations are degraded and continue at a minimum level until the command post is secured. The TAC CP or alternate command post assumes functions the TOC cannot perform.

Displacement

When the command post moves, it can displace as a whole, by echelon, or by bounds. When the move allows continuous communications, the command post will displace as a whole. When moving a long distance, or when the move to the proposed location will not allow continuous communications, the command post displaces by echelon. The TAC CP can be used in this role. The larger main command post at regimental level frequently displaces by echelon as a security measure.

The XO designates the location of the command post site. If the site is significantly different from that previously determined by the S3 or if none has been designated, the XO coordinates the location with the S3. The first echelon of the TOC moves with the quartering party under control of the headquarters commandant. The quartering party performs a reconnaissance of the area, selects the exact location, and establishes communications. Once the first echelon is operational, and local security is established, the area is marked for occupation by other vehicles, and guides are posted. The off-duty shift may operate the first echelon. All personnel train to perform its functions. The signal officer is normally a member of the quartering party and selects the exact location for the TOC based on communications considerations. This is particularly important when considering line of sight requirements for area communications systems.

COMBAT TRAINS COMMAND POST

The CTCP is composed of portions of the S1 and S4 sections and is under the S4's control. Its primary functions are to plan logistics support and coordinate with subordinate units, higher headquarters, and the headquarters of the supporting logistics unit. It tracks the current logistics status of subordinate units. The regimental operations support section is located with the main command post. The squadron CTCP may be located with the TOC, combat trains, field trains, or unit trains. It serves as the field trains command post or the alternate command post.

Continuous communications are maintained with supporting and subordinate units. S1 and S4 personnel cross-train in duties and basic functions to provide continuous operations. An operations situation map is maintained to facilitate logistical planning and to backup tactical command and control.

ALTERNATE COMMAND POST

The alternate command post assumes the functions of the main command post if it (specifically the TOC) is destroyed or rendered ineffective. The alternate command post may be the TAC CP if it is deployed, a CTCP, a squadron command post (regiment level), or a troop command post (squadron level). During normal operations, the CTCP eavesdrops on the tactical net and is familiar with the situation. The alternate command post carries the same maps, charts, and SOPs as the TOC. It should also be capable of monitoring the key radio nets. The unit SOP provides for assignment of an alternate command post. The alternate command post normally cannot duplicate all the communications means or command and control functions of the main command post, so the SOP dictates the essential nets and activities that must remain operational. Standardized procedures facilitate rapid assumption of the command post functions by the alternate.

REAR COMMAND POST

The rear command post for the regiment is composed of the regimental support squadron command post and elements of the regimental S4 and S1 sections. The rear command post sustains current operations, forecasts future combat service support requirements, conducts detailed combat service support planning, and serves as an entry point for units entering the regimental support area. The regiment materiel management center is normally collocated with the rear command post. It coordinates with corps staff and COSCOM for logistics support. The regimental support squadron command post may serve as the regimental alternate command post.

In the squadron, the field trains command post performs the same function as a rear command post. Normally, the field trains command post is provided by the HHT. It is composed of elements of the S1 and S4 sections and the HHT. It controls all assets in the field trains, ensures sustainment activities are moving forward to the

combat trains, and coordinates support requirements, When collocated with the regimental support squadron or a forward support battalion, the field trains command post and field trains are under operational control of the support unit commander for security, positioning, and movement. The field trains command post maintains landline communication with all elements in or collocated with the field trains. Communications are maintained with the CTCP and the combat trains to coordinate service support requirements. When the squadron is operating at an extended distance from the field trains, these communications may be routed through the support unit command post.

TROOP COMMAND POST

The troop command post is a lean facility. Controlled by the XO, it is manned by members of the troop headquarters. The troop command post essentially performs command and support functions for the on-going operation. Limited planning may be accomplished. The command post maintains communications with subordinate organic and supporting elements, squadron, and adjacent units and plays a key role in coordinating air and ground troop operations. The command post maintains close contact with the first sergeant in the troop combat trains to coordinate service support operations.

The air cavalry troop does not have a command post. Communications with the air cavalry are effected by talking to the commander or other officers in the aircraft, the troop first sergeant in his vehicle, or a nearby facility, such as the rear command post.

Section VI. Command and Control Communications

"The major-general commanding directs me to say that it is of the utmost importance to him that he receives reliable information of the presence of the enemy, his forces, and his movements."

George G. Meade
Orders to the Union Cavalry
30 June 1863

Communications are essential to cavalry operations. Fundamental to reconnaissance and security is the reporting of combat information. This information is of interest to other maneuver units as well as to corps or division staffs and requires widest dissemination possible by eavesdrop or other means. Cavalry frequently operates over long distances, wide frontages, extended depths, and great distances from the controlling headquarters. Communications must be redundant and long range to meet these internal and external requirements.

In division cavalry, operational requirements may employ the squadron under different controlling headquarters. These conditions require the squadron to have the flexibility to communicate on division as well as brigade nets. The squadron requires the equivalent communications capability of a brigade.

Communications, particularly electromagnetic, are subject to disruption. Disruption may result from unintentional friendly interference, intentional enemy action, equipment failure, atmospheric conditions, nuclear blast electromagnetic pulse, or terrain interference. To compensate for these, the commander should—

- Provide for redundancy in means of communication.
- Ensure subordinates understand his intent so they know what to do during communications interruptions.
- Avoid overloading the communications systems.
- Minimize use of the radio.
- Ensure proper signals security and communications security practices are followed.

RESPONSIBILITIES

All levels of command gain and maintain communications with the necessary headquarters and personnel. The traditional communications responsibilities are listed below.

- Senior to subordinate. A senior unit is responsible for establishing communications with a subordinate unit. An attached unit of any size is considered subordinate to the command to which it is attached.
- Supporting to supported. A supporting unit is responsible for establishing communications with the supported unit.
- Reinforcing to reinforced. A reinforcing unit is responsible for establishing communications with the reinforced unit.
- Passing to stationary. Forward passage of lines.
- Stationary to passing. Rearward passage of lines.
- Lateral communications. Responsibility for establishing communications between adjacent units may be fixed by the next higher commander or SOP. If responsibility is not fixed by orders, the commander of the unit on the left is responsible for establishing communications with the unit on the right. The commander of a unit positioned behind another unit establishes communications with the forward unit.
- Restoration. Regardless of the responsibility, all units take prompt action to restore lost communications.

MEANS OF COMMUNICATION

Cavalry uses the full spectrum of communications means.

Wire

Wire is normally used for internal communications within the command post, support areas, and assembly areas. It is the primary means of communication whenever the situation permits.

Messengers

Messengers are used between the command post, trains, and higher and lower headquarters. Although ground messengers are slower than other means of communications, air cavalry provides a rapid capability. Aviation messengers may be particularly useful in carrying administrative/logistics messages when en route to and from rear assembly areas. They can be used even if units are in contact and especially when jamming or interception hampers FM communication.

Sound and Visual

Sound and visual signals are in the SOI or the unit SOP. Signals not included in the SOI maybe established by SOP. The battlefield will have many sound and visual cues. Commanders and staff planners carefully determine how sound and visual signals will be used and authenticated. Sound and visual signals include pyrotechnics, hand-and-arm, flag, metal-on-metal, rifle shot, whistles, and bells.

Commercial Lines

Commercial lines are used when approved by higher headquarters. If the unit is forced to withdraw, existing wire lines, including commercial lines, are cut and sections removed so the enemy cannot use them.

Radio

Cavalry operations normally depend on radio as the primary means of communication. This is particularly so during reconnaissance and security missions. Net discipline and SOP minimize needless traffic. To avoid detection by enemy direction finding equipment, cavalry uses all other means of communication to supplement the radio. Once in contact, the primary means of communication will be FM voice. Radio communications include electromagnetic communications in FM, AM, UHF, and VHF spectrums.

ARMORED CAVALRY REGIMENT EXTERNAL COMMUNICATIONS

The armored cavalry regiment communicates on the corps nets as illustrated in Figure 2-9 and discussed below.

Corps Area Common User Network

The area common user network is the primary system for voice telephone, data, and hard copy communications in the corps area. The network is installed and operated by the corps signal brigade. It provides an interlocking network of communications facilities providing the means to exchange information throughout the corps. Individual circuits within the network are terminated by common user telephones, facsimile machines, and data terminals that are user owned, installed, and operated. The network is built on a series of communication nodes providing communications support to headquarters and units operating in the corps area. Command posts are connected to two or more nodes to ensure redundancy, reliability, and survivability of communications. The area common user network provides a limited mobile individual call capability as well as a conference call. The net is capable of passing secure traffic.

Corps Command Net

This is a secure FM voice net, controlled by the corps G3. It is a back-up means to the corps area common user system. If established by the corps G3, the regimental command group, TAC CP, and main command posts will monitor.

Tactical Satellite Communications Network

The corps signal brigade provides the regiment with a tactical satellite communications terminal that links it to the tactical satellite communications network. This network is used to provide critical command and control communications between the corps and its subordinate maneuver units, echelons above corps, and national command authorities. This terminal normally positions with the regimental main command post and operates under the control of the regimental signal officer.

NET / STATION	CORPS CMD FM	CORPS OI FM	CORPS ACU
Regt Cmd Grp	X	A	X
Regt TAC CP	X	X	X
Regt Main CP	X	X	X
Regt Rear CP	A		X
X - Enter net. A - Enter as required. O - Monitor.			

Figure 2-9. Regimental external communications nets.

Other Communications/Information Systems

The regiment is usually provided a ground terminal that provides a direct information link to corps side-looking airborne radar (SLAR) operating within the corps' area of operations. This ground terminal positions near the analytical control element in the main command post and passes information directly to the staff by landline or messenger. As the joint surveillance target attack radar system (JSTARS) is fielded, the ACR can expect to receive ground terminals from corps that also provide a direct information link to the aircraft. These terminals will also position near the TOC analytical control element and transmit information directly to the staff.

ARMORED CAVALRY REGIMENT INTERNAL COMMUNICATIONS

The armored cavalry regiment operates the internal nets discussed below and shown in Figure 2-10.

Regimental Command FM Net

This is a secure voice net, controlled by the regimental S3 in the TAC CP or the regimental XO in the main command post. It is the primary means used for command and control of all units assigned, attached, or under operational control of the regiment. Normally, only commanders, XOs, and S3s of subordinate units are permitted to communicate on this net.

Regimental Operations and Intelligence (01) FM Net

This is a secure voice net, controlled by the regimental S2 in the main command post. It is primarily used to collect and disseminate routine reports and information between command posts. It serves to keep the command net clear of anything but priority and urgent information.

Regimental Fire Support FM Net

This is a secure voice net, controlled by the fire support element in the regimental main command post. It is used to plan and coordinate employment of available indirect fires with subordinate squadron fire support elements and the fire support units providing support to the regiment. It is also used to monitor the status of available ammunitions, expenditures, and distribution of ammunition within the regiment's area of operations.

Digital Fire Direction FM Net

This is a digital net, used by the fire support element to prepare, coordinate, disseminate, and execute fire planning data by means of either the tactical fire direction system (TACFIRE), advanced field artillery tactical data system (AFATDS), or initial fire support automated system (IFSAS). The net is usually controlled by the supporting artillery unit, normally a direct support battalion or a field artillery brigade headquarters. The fire support element is provided a variable format message entry device (VFMED) that has a digital communications interface with the supporting artillery unit and subordinate fire support elements. The fire support element can also use the VFMED to transmit and receive battlefield information for the regimental commander and to conduct coordination by plain text if the command net is jammed or communications are lost with a subordinate squadron.

Regimental Administrative/Logistics (A/L) FM Net

This is a secure voice net, controlled by the regimental S4 in the rear or main command post. It is used primarily to plan and coordinate sustainment operations with subordinate units. Routine personnel and logistics reports are transmitted on this net. It is also used to monitor the status of personnel, equipment, fuel, and ammunition.

Regimental Command AM Net

This is an unsecure net that serves as a backup for the regimental secure FM command net. It is controlled by the regimental S3 in the TAC CP or TOC. It is used when the regiment is spread over wide frontages and FM secure communications with subordinate squadrons cannot be sustained.

Regimental Area Common User Network

This network is the primary system for data and hard copy communications in the regiment's area of operations. It may be used for command and for operations and intelligence traffic from the regiment to its subordinate squadrons in cases where FM voice communications cannot be established. The regiment should be provided with enough dedicated communications nodes so that all regimental and squadron main and rear command posts are supported. Without the dedicated nodes, vital combat information and logistics and other data traffic cannot be sent from squadron to regiment. This is because information would require too much time to transmit, making the unit vulnerable to radio electronic combat.

NET / STATION	REGT CMD FM	REGT OI FM	REGT A/L FM	REGT FS FM	REGT CMD AM	REGT ACU
Regt Cmd Grp	X	A		A		X
Regt TAC CP	N	X		X	X	X
Regt Main CP	X	N	X	N	N	X
Regt Rear CP	X		N			X
RAS	X	X	X	X	A	X
Support Sqdn	X	O/A	X	A	A	X
Separate Trp/Cos	X	X	A		A	X
ACS Cmd Grp	X					X
TAC CP	X	X		A	A	X
TOC	X	X	A	X	X	X
RS1/RS4		A	X		A	X
Rear CP			A			

N - Net control station.
X - Enter net.
A - Enter as required.
O - Monitor.

Figure 2-10. Armored cavalry regiment internal nets.

ARMORED CAVALRY SQUADRON INTERNAL COMMUNICATIONS

The armored cavalry squadron operates on the internal nets described below and illustrated in Figure 2-11.

Command Net

The command net is a secure FM net controlled by the S3 section at the TAC CP or TOC. It is used to command and control the squadron. All organic and attached units, fire support officer, air liaison officer, and supporting units operate in this net. The command net is used to send combat critical information to the

squadron commander or the S3 and to allow troop commanders and the squadron commander to talk to each other. The TOC can also operate a command AM net as a back-up means of communication over extended distances. Ground cavalry troops are equipped to enter this net.

OI Net

The 0I net is a secure FM net controlled by the S2 section of the TOC. All routine tactical reports and other intelligence matters are sent on this net. This net should be used to free the command net for command and combat critical traffic.

A/L Net

The A/L net is an FM net controlled by the S4 section in the CTCP. This net is used for A/L reports and coordinating maintenance operations. The first sergeant, TOC, squadron maintenance officer, and squadron field trains operate on the A/L net.

Fire Control Nets

The squadron fire control nets are part of the squadron fire control system. This system is used to control all indirect fire support within the squadron. Up to four nets may be used to control and coordinate fires. Internal nets are squadron and troop fire support, and external nets are a digital fire net and artillery command fire net. When the squadron has a direct support relationship with an artillery battalion, the battalion command fire net may become the squadron fire support net. The fire control system centers on the squadron fire support officer and his fire support net. This net is used to pass fire support coordination measures and information. Additionally, this net is used for back-up voice call for fire.

Troop Command

The troop command net is a secure FM net controlled by the troop XO in the troop command post. All organic and attached elements of the troop operate in this net. All tactical and logistics reports are forwarded to the troop command post on this net. Platoons operate on internal nets.

Troop Fire Support

The troop FIST controls this FM net. The troop FIST and mortars operate on the net to call for fires. An air cavalry troop commander or scout weapon team leader may enter the net as necessary to call for fire. Tank companies do not have this net.

NET STATION	SQDN CMD FM	SQDN CMD AM	SQDN OI FM	SQDN A/L FM	SQDN FS FM	ARTY FS (DIG)	TRP/ CO CMD FM	TRP FS FM
Sqdn Cmd Grp	X		A	A	XI	XI		
Sqdn TAC CP	N	X	X		X			
Sqdn TOC	X	N	N	O	N	X		
Sqdn CTCP	X		O	N				
Sqdn Rear CP	A			X				
Trp/Co Cdrs	X		O	A	A			A
Troop CP	X	X	X	O/A				O/A
Trp/Co Plts					A		X	A
Trp/Co FIST					X	X	X	N
Trp/Co 1SG				X			X	
Trp Mortars							X	X
HHT Cdr	X			X				

N - Net control station.
X - Enter net.
A - Enter net as required.
O - Monitor.
I - FSO operates on this net.

Figure 2-11. Regimental armored cavalry squadron internal nets.

AVIATION SQUADRON INTERNAL COMMUNICATIONS

The regimental aviation squadron operates the internal nets described below and illustrated in Figure 2-12.

Command Net

The regimental aviation squadron operates a command net on secure FM, UHF, and HF (AM) controlled by the S3 section in the air TAC CP, ground TAC CP, or TOC. It is used to command and control the squadron. All organic and attached units, fire support officer, air liaison officer (if present), and supporting units operate in this net. The command net is used to send combat orders to troop commanders, critical combat information to the squadron commander or S3, and to allow troop commanders and the squadron commander to talk to each other. The UHF command net is normally used for back-up command, US Air Force communications, and flight-following. The air cavalry and attack troop command nets are normally VHF or secure FM nets controlled by the troop commander.

OI Net

The OI net is a secure FM net controlled by the S2 section of the TAC CP. All routine tactical and intelligence reports are sent on this net. Routine coordination is conducted on this net. This net is used to free the command net for command and critical combat traffic.

A/L Net

The A/L net is a secure FM net controlled by the S4 section of the CTCP. This net is used for sending A/L reports and coordinating maintenance operations. The HHT and AVUM commanders and their subordinates execute logistics support using this net. Troop first sergeants coordinate logistics support on this net. Communications between the TOC and the CTCP are by face-to-face, messenger, or wire since they are normally collocated or in close proximity.

Fire Support Net

The squadron fire support net is used to control and coordinate all indirect-fire support. This net is used to pass fire support coordination measures and information. When the regimental aviation squadron has direct support artillery, calls for fire may be sent to a fire support officer or directly to the fire direction center on this net. The artillery unit command fire net may become the squadron fire control net. When air cavalry and attack troops cannot establish communications with an artillery unit, calls for fire may be relayed through the regimental aviation squadron fire support element on the fire support net.

General Purpose Net

The general purpose net is a VHF net controlled by the air TAC CP. It is used to talk aircraft-to-aircraft, freeing the on-board FM radios to monitor critical nets. It may be used as a command net or OI net for specific missions.

NET / STATION	SQDN CMD FM	SQDN CMD UHF	SQDN CMD HF (AM)	SQDN GP VHF	SQDN OI FM	SQDN A/L FM	SQDN FS FM	TRP CMD VHF
Cmd Grp	X	X		X	A			
Gnd TAC CP	N1		X		N		N	
Air TAC CP	X1	X1		N	A		X	
TOC	X	N1	N		X		X	
CTCP	X				A	N		
Trp Cdr	X	X		A	A	A	X	N
Trp/CP/1SG					O	X		
HHT Cdr	X					X		
AVUM Cdr	X					X		

N - Net control station.
X - Enter net.
O - Monitor.
A - Enter as required.
1 - Air TAC is NCS when deployed.

Figure 2-12. Regimental aviation squadron internal nets.

DIVISION CAVALRY COMMUNICATIONS

External Communications

External communications nets vary with the controlling headquarters (see Figure 2-13). The brigade nets illustrated include both ground and aviation brigades. As indicated, the squadron always enters certain nets, regardless of the command and control relationship in effect.

DIVISION CONTROL						
STATION \ NET	DIV CMD FM 5	DIV REAR CMD CMD FM	DIV CMD AM	DIV OI FM	DIV ACU	DIV A2C2 FM
Cmd Grp	X	X1		X	X3	
TAC CP	X2	X2		X2	X3	
TOC	O/A	O/A1	X	X	X3	X3
CTCP				O	X3	
Rear CP						

BRIGADE CONTROL					
STATION \ NET	BDE CMD	BDE OI FM	BDE A/L FM	DIV ACU FM	AVN BDE UHF
Cmd Grp	X	O/A	A		
TAC CP	X2	X			
TOC	O/A	X	O/A		X
CTCP		O	X4	X	
Rear CP			X4		

X - Enter net.
A - Enter as required.
O - Monitor.

Notes. 1. When performing rear operations.
2. When deployed; otherwise TOC.
3. Always active.
4. Net of brigade providing area support.
5. Division command FM is normally an on-call net.

Figure 2-13. Division cavalry squadron external nets.

Internal Communications

Nets for squadron and troop internal communications are shown in Figure 2-14 and described in the paragraphs that follow.

The command, OI, A/L, fire support, troop command, and troop fire support nets are the same as discussed under the regimental armored cavalry squadron.

The division cavalry squadron also operates a UHF aviation net. The S3 flight operations section is the net control station. This net is used for routine communications with aircraft, freeing the squadron FM command net for combat-critical communications. It is also used for disseminating A2C2 measures and as a flight-following net (when required).

Division cavalry ACTS operate internally on UHF and VHF nets. These radios are also used to communicate with other Army and Air Force aircraft supporting the squadron. The troop commander or senior airborne leader communicates on the squadron command net. The commander or another designated aircrew operates on the squadron OI net. Aircrews enter ground troop FM nets and the squadron fire support net as required for coordination. ACT aircraft "may also serve as a radio relay for ground cavalry units operating at extended distances from the supported headquarters. To do this, some ACT assets may operate between ground cavalry units and the supported unit's headquarters. They may enter the fire support net for fire support. The commander, when airborne, communicates with the first sergeant on the squadron A/L net. Due to the ACT's lack of communications equipment and the distance that is usually between the assembly area, the squadron TOC, and ground troops, the flight operations section acts as a vital communications link. Wire and messenger are predominant in rear assembly areas. When the troop is in a forward assembly area, communications with the squadron TOC or TAC CP are normally maintained by an aircrew on the ground at flight idle, with manpack radio, or by a single ship launch. The troop must remain responsive when in a forward assembly area.

NET STATION	SQDN CMD FM	SQDN CMD HF (AM)	SQDN OI FM	SQDN A/L FM	SQDN AVN UHF	SQDN FS FM	ARTY FS (DIG)	GND TRP CMD FM	GND TRP FS FM	AIR TRP UHF/VHF
TAC CP	N2		X			X				
TOC		X	N	N	O	N	N	X		
CTCP		X		O	N					
Rear CP	A			X						
Sqdn Atchs		X		X	X		X			
Air Trp	X		X	A	A	A	X	A	A	X
Gnd Trp Cdr	X		O	A		A		X	A	
Trp CP	X	X	X	O/A		O/A		N	O/A	
Plts							A		X	A
FIST							X	X	X	N
1SG					X				X	A
Trp Atchs									X	A
Mort								X	X	

N - Net control station.
X - Enter net.
A - Enter as required.
O - Monitor.
1 - FSO operates on this net.
2 - When deployed command NCS.

Figure 2-14. Division cavalry squadron internal nets.

COMMUNICATIONS SECURITY

COMSEC involves physical security, crypto security, and transmission security. COMSEC procedures must be covered in the unit SOP.

Physical security protects the crypto system and classified documents (including plain-language copies of messages and carbons) from capture or loss. Before an area is vacated, soldiers inspect for messages, carbons, cipher tapes, and copies of maps or orders. Wire lines are patrolled to prevent enemy tapping. When SOI codes or cryptographic equipment is lost or captured, the unit reports the facts promptly to the next higher command. The SOP must contain instructions for destruction of equipment and classified documents to prevent their capture or use by the enemy. Complete SOIs should not be carried forward of the squadron TOC. When necessary, the signal officer distributes extracts for use by forward elements. The SOP establishes priority for issue of SOIs and extracts.

Crypto security is maintained by using operations codes, numerical encryption devices, secure voice devices, and other secure communications equipment.

Transmission security limits the enemy's ability to listen to radio signals. Any signal transmitted can be intercepted and jammed by the enemy. All transmissions should be short and treated as if the enemy were listening. Net discipline is the responsibility of all users, but the net control station is responsible for policing the net. Brevity codes, the terrain index reference system, and coded reports all serve to reduce net traffic.

Section VII. Integrated Air and Ground Operations

Integrating air and ground operations is essential to cavalry operations. The regimental commander is responsible for integrating the regimental aviation squadron and armored cavalry squadron in regimental combat operations. The commander normally employs the aviation squadron as a squadron. It frequently performs missions over the same ground that ground squadrons are assigned. This dictates the development of techniques and procedures to provide effortless combined arms operations. An air cavalry troop may be placed under operational control of a ground squadron. This method ensures the squadron gets combat information immediately from the forward air elements. When the air troop is under the operational control of the ground squadron, the ground squadron commander bears the responsibility for integrating air and ground operations. Forming a habitual relationship between an air cavalry troop and a ground cavalry squadron is important in fostering effective integration.

Division cavalry is unique as the only battalion-level structure in the Army with organic air and ground maneuver assets. Integrating operations is a continuous requirement for all operations.

This section discusses the integration of air and ground cavalry from the perspective of the division cavalry squadron. It is applicable to the ACR squadron when employing an air cavalry troop under its operational control. The principles of synchronization discussed apply to the regiment as it integrates air and ground squadron operations.

CAPABILITIES AND LIMITATIONS

Air and ground troops are employed by the squadron to perform missions that are frequently the same or overlap. Mission profiles are similar. Each troop offers specific operational strengths that compensate for the other's weaknesses. Of particular note, all air cavalry assets now have improved night acquisition capabilities and increased lethality over previous air cavalry platforms. These capabilities must be exploited in future air-ground cavalry operations. When employed together in an integrated concept, the effectiveness of the air and ground units is enhanced and the tempo of operations is increased. Teamwork must be diligently trained to develop air and ground leaders who inherently understand the employment, capabilities, and limitations of each troop. Training also develops the close operational teamwork necessary for integrated operations.

Air cavalry capabilities and limitations are listed in Figure 2-15.

Ground cavalry capabilities and limitations are listed in Figure 2-16.

CAPABILITY	LIMITATION
Terrain independent movement	Degraded limited visibility operations
Speed	Lack detail in reconnaissance
Add agility to operations	Limited station times
Add depth to operations	Crew endurance
Increase tempo of operations	Aircraft maintenance requirements
Digital link	
Enhanced optics	
Elevated observation platform	
Video reconnaissance	

Figure 2-15. Air cavalry capabilities and limitations.

CAPABILITY	LIMITATION
Hold terrain	Terrain restrictions
Detailed reconnaissance	Movement Visibility Obstacles
Continuous operations	Responsiveness over extended distances
Self supporting	
Command and control organization	

Figure 2-16. Ground cavalry capabilities and limitations.

COMMAND AND CONTROL

The commander must define control of the integrated air and ground operation. Two basic methods of control are used. Under either method, control normally rests with the commander in place who possesses the terrain the operation is covering.

The normal method of employment is by the squadron commander. He issues orders to all troops and controls the integration of their operations. Troop commanders operate on the squadron command net. They coordinate actions on this net or meet on an agreed upon troop net for detailed coordination. Eavesdropping is essential since troop commanders often report information of immediate concern to their peers. The squadron commander ensures the focus of the troops remains synchronized, clarifies coordination, and issues orders to each troop as necessary.

The second method of employment is by air-ground teams. This is often a temporary relationship to deal with a specific situation. Operational control is the relationship used. Control of the team may rest with either the air or ground troop commander.

Control by the air cavalry troop is appropriate when—

- Limited ground troop assets are in the area.

- Ground troop commander or command post is not positioned to control.

- Air cavalry troop commander is more familiar with the terrain or situation.

- Operation is of limited duration.

Ground troop control is appropriate when—

- Ground troop commander and command post are positioned to control.

- Limited air cavalry troop assets are operating in the area.

- Contact is made in the ground troop's area of operations.

EMPLOYMENT METHODS

Due to the size of the air cavalry troops, both in personnel and in aircraft, it is critical that the commander clearly determines how he will employ them. If 24-hour operations are required with the air troops, the result is having only two or three aircraft covering the entire squadron zone/area. If 24-hour operations are not required, he can accept risk and only employ them at the critical times and places as determined by the IPB process. Once determined, the two air troops are employed in one of two ways in relationship to another. He can elect to assign each of them the same mission in the same operational area. One ACT would operate for a given period of time and then be replaced by another ACT. The duration of each rotation is determined by the fuel and crew endurance and availability of aircraft. The deployed troop operates out of a forward assembly area while the other troop rests and performs maintenance in the tactical assembly area or another forward assembly area. This establishes rotation by troops into the operational area. The deployed troop commander establishes a rotation plan within his troop to maintain a continuous presence on station as directed by the squadron commander. This method provides sustained air cavalry presence for the squadron and is appropriate for an extended operation.

The second method is to employ all troops simultaneously in the squadron operation. The ACT commanders establish internal rotation plans for the scout weapon teams to maintain aircraft presence as directed by the squadron commander. Troops operate out of the air troop assembly area or forward assembly area and refuel out of the forward area rearm/refuel point (FARP), which is pushed forward. This method provides maximum aircraft forward. This may be appropriate for surge requirements, short duration operations, if the squadron is extended over broad frontages, or if oriented in several directions. The significant disadvantage is the

potential total loss of ACT presence due to crew endurance or maintenance requirements.

Under either method, the squadron commander can place constraints on when and where the air cavalry will be allowed to engage with direct fire. This may be necessary to ensure the availability of armed aircraft when required for a critical squadron task.

SYNCHRONIZING

Integration is achieved by the manner in which the commander uses techniques of command and control to improve the air-ground synchronization. The most critical method is through an effective SOP. The SOP establishes standard organizations for air-ground operations, common operating procedures, and delineation of responsibilities among commanders and staff.

The integration of air cavalry into the decision-making process is an important and unique aspect of staff planning in any cavalry organization. How the regiment or squadron plans to use their air cavalry will often be the significant difference in courses of action presented to the commander. When developing courses of action, air-ground synchronization should be planned along the following guidelines:

- Friendly Maneuver. Air and ground cavalry may cross the line of departure together or separately. Always having the air cavalry cross ahead of the ground elements may limit the availability of the air troops during the operation's critical phase. Tying the air cavalry's line of departure time to a friendly event will better focus the air assets and ensure they are available for the more critical time of the operation. For example, ground troops conducting a zone reconnaissance cross the line of departure at 0400. No enemy contact is expected for 15 kilometers, so air troops wait until the ground troops reach phase line (PL) Stuart before crossing the line of departure. The air troops make contact with the ground troops along PL Stuart and conduct zone reconnaissance one phase line ahead of the ground troops. When the ground troops reach PL Grant (LOA), the air troops will continue zone reconnaissance to PL Viking (air LOA) and screen in order to provide early warning to ground troops establishing observation posts along PL Grant (LOA). (See Figure 2- 17.)
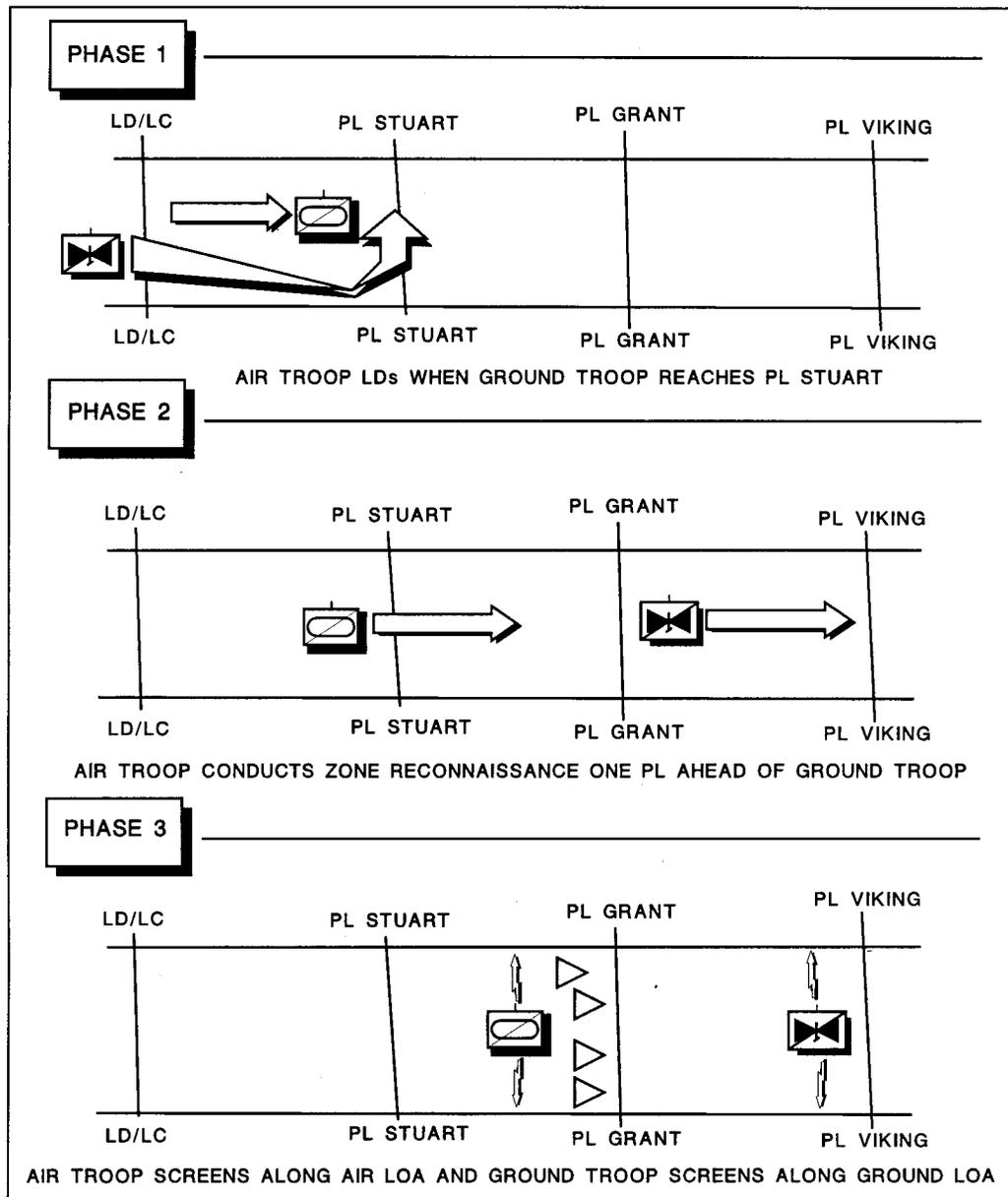
Figure 2-17. Air-ground synchronization.

- Enemy Actions. The most important consideration for planning air and ground coordination is the enemy. What has the enemy done in the past? How does he configure his reconnaissance, and how does he maneuver? What size formations, placed where on the battlefield, determine the difference between the main effort and a supporting attack? Where does he place his reconnaissance in the defense? Obviously this is IPB intensive. Commanders plan to have air cavalry make contact with the enemy first, provide information, and develop the situation using both air and ground elements. This works only if the air cavalry is on station and focused on an enemy that they understand. The S2, role-playing as the enemy commander

during the war-gaming process, adds immeasurably to the unit's understanding of the enemy, and ultimately helps to focus air-ground synchronization. Units that designate specific aircrews for day operations and specific aircrews for night-vision system operations, while having utility in garrison, do not help in planning against the enemy's most probable course of action. Assuming most enemy reconnaissance will be conducted during periods of limited visibility, all aircrews must be proficient in operating with night-vision systems. This allows the staff to plan against the enemy's capability and not the unit's limitation.

- Fighting the Air Cavalry. The fundamental role of the air cavalry is to observe the enemy and report information to the commander. The advent of the OH-58D (Kiowa Warrior) does not change this. In fact, that ability is enhanced with its advanced optics located in the mast mounted sight. Additionally, the Kiowa Warrior's ability to defend itself or conduct offensive operations with a combination of Hellfire, 2.75-inch rockets, .50 caliber machine gun, and Stinger missiles increases the capabilities of the air cavalry. Couple that with the ability to have an eight-digit grid to the aircraft and the target locations and to digitally talk to supporting artillery units presents the commander with a potent fighting asset. The cavalry commander must focus the information-gathering potential of the Kiowa Warrior, and set strict engagement criteria so that his air assets do not become engaged in the fight unnecessarily. Different guidance should be provided for the different cavalry missions the air cavalry will be asked to perform. Reconnaissance missions should focus the aircraft on the reconnaissance objective, and set strict engagement criteria and criteria for developing the situation in conjunction with a ground cavalry unit or indirect fire. Security missions should stress weapons loads and engagement criteria. Since the air cavalry is usually placed forward of the ground cavalry, guidelines on what the air should engage, when it should engage, and with what asset (direct fire or indirect fire) should be specified. Commanders should be trained to recognize battlefield events that would change these engagement criteria. Ground cavalry displacing from an initial screen line should do so without pressure from the enemy. The air cavalry, with its organic weapons and ability to deliver observed field artillery fires, can ensure the ground cavalry elements displace without being engaged by the enemy. In a regiment, the attack helicopter troops can be used to conduct aerial reconnaissance, to supplement the combat power of the ACTS, or to conduct independent attack missions.

An operation is integrated through the use of control measures. Squadron level control measures must be useful to both air and ground troop commanders. Troop commanders, in turn, add additional control measures to facilitate internal operations. A2C2 control measures should be on operations overlays, or at a minimum, an A2C2 overlay available as a drop to the operations overlay. Control

measures should be recognizable on terrain from the ground and the air. Multipurpose graphics are particularly useful. They may be used to-

- Report locations.

- Establish physical contact on the ground.

- Facilitate internal air and ground troop control.

- Conduct a passage of lines when an air cavalry troop is forward of the ground.

- Serve as downed aircrew points.

- Control direct and indirect fires.

The S3/flight operations sends down to the ACTS both the standard hard copy overlays and the same information on aviation mission planning station (AMPS). Due to the large amount of data that could be entered into the AMPS and the limited number of waypoints available in the aircraft, the squadron only sends the ACTS the mission-essential graphics on the AMPS. This will leave the troop commander enough waypoints to do his detailed mission planning.

Battle handover is an important concept in synchronizing operations. The nature of integrated operations frequently calls for one troop to pass an acquired enemy force over to another. In a practical sense, this is established in the SOP as target turnover procedures. These procedures are automatically executed by commanders as an informal process normally coordinated on the squadron command net.

Fire support coordination is critical to prevent the troops from engaging each other. This includes coordination with supporting air defense assets who may not be familiar with squadron operations. Control must not needlessly restrict the engagement of the enemy by either air or ground troops. Chapter 9 discusses fire support synchronization in detail.

The concepts of the operation are coordinated between troop commanders and the squadron commander. He can delineate specific tasks to be performed by air and ground troops to increase the tempo of an operation. This is particularly useful during reconnaissance. Troop commanders coordinate in advance actions they plan or anticipate to reduce coordination required during the operation.

Location of the air troop assembly areas and the FARPs are coordinated by the staff with the troop commanders. They frequently lie in the assigned area of operations of a ground troop. Their locations must not interfere with ground maneuver. Ground commanders can provide emergency support or protection to these areas if they are attacked. With prior coordination, ACTS may be able to use FARPs of the division aviation brigade.

AIR-GROUND COORDINATION EXAMPLE

A divisional cavalry squadron is given the mission of conducting a zone reconnaissance forward of the division. The squadron is focused on the critical tasks of finding and reporting all enemy within the zone and reconnoitering key terrain within the zone. The squadron crosses the line of departure with one ACT conducting zone reconnaissance focused on locating the enemy and reconnoitering specified NAIs. Three ground troops are on line, conducting zone reconnaissance approximately 3 to 5 kilometers behind the ACT. As the ACT crosses PL Cougar, one of its air cavalry teams locates an enemy reconnaissance platoon in the vicinity of CP 1. The ACT commander directs the air cavalry team to maintain contact and reports to the commander on the command net. Simultaneously the ACT's two other air cavalry teams continue their reconnaissance in order to develop the situation to the flanks and rear of the reported contact. The ACT commander orders them to proceed no further than PL Tiger and establish a screen oriented on the high-speed avenues of approach.

The squadron commander orders the ACT to maintain contact with the enemy platoon and pass it off to B Troop for destruction. The ACT commander and the B troop commander acknowledge and then coordinate briefly on the squadron command net. The ACT commander informs the B Troop commander that the enemy platoon is currently at CP 1 and moving towards CP 10. He estimates that it will reach CP 10 in approximately 15 minutes. He informs the B Troop commander that his platoon leader is maintaining contact by bounding back through the zone and that the platoon leader will contact him on his internal troop command net. He also passes off the air cavalry team's present location. The air cavalry platoon leader then contacts the ground troop commander on the B Troop command net and passes an updated spot report suggesting potential engagement areas or attack-by-fire positions. The B troop commander issues a FRAGO to his troop, sending the scout platoons to occupy designated OPs in the zone to gain contact with the enemy platoon. He orders the tank platoons into attack-by-fire positions to ambush the enemy platoon in the vicinity of CP 10 while also moving the mortars into a mortar firing position behind 2nd platoon.

Soon after the B Troop scouts occupy their OPs, the air cavalry platoon leader relays the current location of the enemy platoon. B Troop then conducts internal coordination per its SOP and destroys the enemy platoon. The B Troop commander then releases the air cavalry platoon back to the control of the ACT commander. Once released and handover of the target is complete, the air cavalry platoon continues its reconnaissance to PL Tiger. (See Figure 2-18.)
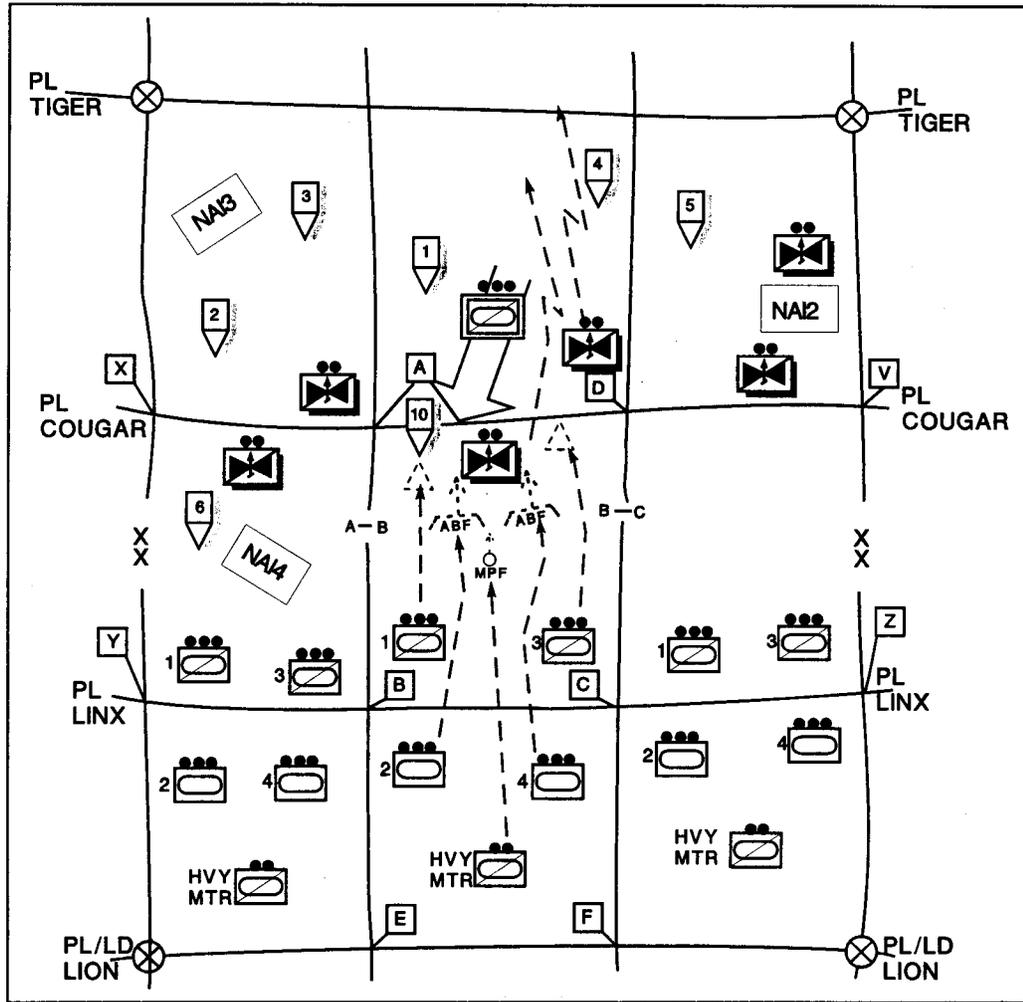
Figure 2-18. Example of divisional cavalry squadron air-ground coordination.

Section VIII. Continuous Operations

Fatigue is probably the foremost degrader of performance. Performance and efficiency begin to deteriorate after 14 to 18 hours of continuous work and reach a low point after 22 to 24 hours. Most tasks involving perceptual skills begin to show a performance degradation after 36 to 48 hours without sleep. Soldiers cease to be effective after 72 hours without sleep. Performance degradation increases dramatically in an NBC environment and sleep becomes more difficult in mission-oriented protective posture (MOPP) gear.

The commander must recognize the signs of sleep loss or performance degradation. These effects are characterized by the following:

- Slower reaction time.

- Increased time to perform a known task.

- Short-term memory decrement.

- Impairment in learning speed.

- Errors in omission.

- Lapses of attention.

- Irritability.

- Depression.

- Erratic performance.

The day/night cycle has a significant effect on performance. When soldiers become accustomed to a set pattern of work and rest periods, they become physiologically adapted to this schedule. Any deviation from this schedule will result in performance decrements. Physiological adaptation to work or rest schedules may take from 20 to 30 days.

Units deployed on contingency operations are particularly vulnerable to disruption of physiological time schedules. Sleep and meal times should be adjusted to coincide with the contingency area. Soldiers and leaders should not be pushed without sleep before departure to preclude arriving in the contingency area already suffering from sleep loss.

Endurance factors for aircrews are a fact of life. Protecting the force demands taking into account the mission, flight mode, time of day, and weather conditions that aircrews must operate in. By thoroughly war-gaming courses of action and understanding the enemy, squadron commanders know when the air cavalry is needed on station and can better enable the squadron to operate aircraft without unnecessarily tiring aircrews. Air troop commanders, aviation safety officers, and instructor pilots can assist in the planning process to ensure that the air cavalry is on station when needed.

A strictly enforced sleep plan is vital when possible. In continuous operations each soldier should get at least four hours of uninterrupted sleep each 24 hours (five hours if sleep is interrupted). Do not go with only four hours of sleep each 24 hours for more than two weeks before paying back the sleep debt. See FM 22-51 for additional information on risk factors associated with sleep loss.

Another aspect of sleep loss that must be considered is the time it takes to recover from the effects of sleep loss. After an operation of 36 to 48 hours without sleep, 12 hours of sleep or rest is required to return soldiers to normal functioning; however, fatigue may linger for three days. After 72 or more hours without sleep, soldiers may need as much as two or three days of rest to recover to normal performance.

To minimize the effects of sleep loss, the commander has several options. Possibly the best solution for staff personnel is periodic breaks and mild exercise. Among combat crews, the commander may rotate tasks if the crews are cross-trained. Varying tasks through job rotation, however, works only if the jobs include tasks with different requirements (gunner to loader or driver).

The two categories of personnel who can be expected to show signs of fatigue first are the young immature soldier who is not sure of himself and the seasoned older soldier upon whom others have relied and who has sustained them at cost to himself. Commanders and leaders often regard themselves as being the least vulnerable to fatigue. Tasks requiring quick reaction, complex reasoning, and detailed planning make leaders the most vulnerable to sleep deprivation. The display of sleep self-denial as an example of self-control by leaders is extremely counterproductive.

Section IX. Command and Control Techniques

Effective command and control is challenging. The commander must develop a body of techniques and procedures to facilitate and streamline the process. These techniques become central elements of the SOP. Effective techniques are simple, timely, brief, and clear. Techniques are discussed in FM 17-97, FM 17-98, FM 24-1, FM 101-5, and FM 101-5-1. Figure 2-19 summarizes major techniques.

TECHNIQUE	PURPOSE
SOP	Standing orders prescribing routine methods followed in operations.
Graphic Control Measures	Standardized system of military symbols that identify items of operational interest on maps.
Operational Terms	Common language of terms to enhance brevity and clarity in communications.
Standardized Organizations	Standardized squadron organization for combat and troop formations provide maneuver framework.
Movement Techniques	Manner of traversing terrain based on likelihood of enemy contact. Used with formations.

Figure 2-19. Command and control techniques.

TECHNIQUE	PURPOSE
Standardized Reports	Formatted reports enhance brevity and clarity in communications.
Precombat Inspections	Provide standardized means for unit leadership to determine combat readiness.
Backbriefs/Rehearsals	Ensure subordinates understand intent and comply with concept.
Readiness Conditions (REDCON)	Establish the amount of time after receiving orders the unit will have to get ready for action.
Orders Group	Standing group of key personnel requested to be present for orders.
Eavesdrop	All stations monitoring a radio net use message traffic even when not the recipient. Speeds dissemination; reduces repetition.
Terrain Index Reference System (TIRS)	Quick and accurate method to articulate intent, report locations, control maneuver, pass out control measures, reference battle positions or orientation. Must be encrypted on unsecure nets. Based on analysis of terrain.
Vehicle Identification System	Helps commander control maneuvers and identify friendly elements. Useful at troop and squadron level.
Staff Journals	Official chronology of events about a unit or staff section. Logs OPORD and messages.
Situation Map (SITMAP)	Graphic presentation of current operational situation. Used in command posts.
Information Display	Supplement SITMAP with tabulated data not suited for the map.
Staff Workbook	Ready reference for conducting current operations and preparing reports.
Preformatted Orders	Facilitate preparation and issuing orders. Used for all combat orders.
Fragmentary Orders	Enable the commander to quickly change or modify an order, or to execute a branch or sequel to that order.
Execution Matrix	Graphically portrays instructions to subordinates in table form. Embodies concept of operation. Synchronizes CS and CSS with maneuver. Used with overlay orders/FRAGO. May be used separately for fire support execution and CSS operations.

Figure 2-19. Command and control techniques (continued).

Section X. Automated Information Systems in Support of Battle Command

The Army is developing computer-aided command and control systems to support the maneuver commander and his staff. Force XXI Battle Command Brigade and Below (FBCB2) will be the bottom-up feed to the Army tactical command and control system (ATCCS). The ATCCS is comprised of six systems: maneuver control system/Phoenix (MC S/P); all source analysis system (ASAS); forward area air defense command, control, communications, and intelligence (FAADC31); advanced field artillery tactical data system (AFATDS); combat service support control system (CSSCS); and FBCB2. FBCB2 will provide automated command and control support to enhance the quality and shorten the duration of the decision-making cycle and to give the operational warfighter a mobile, distributed, and seamless command and control system.

FBCB2 is the implementation of information age technology to provide increased battlefield operational capabilities. When combined with changes in doctrine and organizational design made possible by these technologies *and* placed in the hands of soldiers/leaders who are trained in their use, FBCB2 provides an increased battlefield capability. Battle command in a digitized brigade will require the development of new initiatives across doctrine, training, leader development, organizations, and materiel in order to manage information resources to achieve the maximum benefits to tactical operations. FBCB2 will provide horizontal and vertical integration of the data and information generation and processing capabilities of individual soldiers as well as weapons, sensors, and support platforms. Aggregation of individual subsystems with linkage to each battlefield operating system (BOS) will establish a computerized digital network resulting in one homogeneous battle command operational architecture throughout all facets of the brigade structure. As a component of the Army battle command system (ABCS), FBCB2 will seamlessly interoperate with and exchange appropriate data and information with all other battlefield automated systems (BAS), SOF, USAF, USMC, and USN.

FBCB2 will complement and have synergy with MCS/P. MCS/P will integrate the maneuver function with the command and control systems of the four major functional areas (fire support, air defense, intelligence and electronic warfare, and combat service support) as they become available. It will assist in managing information and in executing the commander's concept of operations. The MCS/P will provide automated assistance in coordinating plans, disseminating orders and guidance, and monitoring and supervising operations.

MCS/P is the integration at regiment and squadron command posts, whereas FBCB2 is the holistic system for the maneuver commander. The two systems rely on each other. As we move toward the twenty-first century, the Army will continue to pursue advanced technology and operational concepts that will give our soldiers an information advantage over potential adversaries.