

Appendix D

Convoy Operations

Convoy operations are essential to survivability moves within an artillery unit and should follow the same principles as those practiced for motor transport or logistical convoys. Survivability moves are frequent displacements to increase the artillery's chance of survival. These moves are used when it is not possible to harden positions or when positions are not conducive to adequate dispersion. Factors affecting survivability moves include frequency of mission requirements and enemy detection and attack capability. Survivability moves must be completed quickly for continuing support of the maneuver unit.

Analysis of the enemy situation and the assigned mission must be accomplished and applied to the planning process for convoy operations. The most effective means by which to accomplish the application of convoy procedures is to conduct an adequate analysis of METT-T. This appendix outlines tactics, techniques, and procedures which serve as the foundation for conducting convoy operations.

Convoys

There are two types of convoys, tactical and administrative. The speed of movement necessary to accomplish the mission will dictate the use of either improved or unimproved routes of movement, and open, closed, infiltrating, or terrain march formations. These formations are primarily used in tactical convoys.

a. Tactical Convoys. Tactical convoys involve the vehicular movement of personnel or cargo in support of a tactical mission. Tactical indicates a threat exists to the convoy's survival. This threat means that enemy contact is possible, likely, or imminent and, therefore, security considerations must take priority over the efficient use of cargo space or the use of easily trafficked (and possibly more vulnerable) road networks. The heavy emphasis on security within a tactical convoy will cause friction for logistical missions, yet an acceptable trade-off must be made to ensure the security of the convoy.

b. Administrative Convoys. An administrative convoy indicates that the threat of enemy contact is nonexistent. Utilizing METT-T, the priorities invert and logistical considerations influence planning. Nevertheless, passive security measures, such as security of gear, must always be employed no matter how harmless the environment may appear.

1 Convoy Organization

2
3 **a. Serial Formations.** The convoy commander may choose to utilize serial
4 formations, as well as pacesetter vehicles. The convoy formation may be organized into
5 serials and should conform to a logistical organization of sections within them. One example is
6 to have three serials. The first serial would consist of an advance party and security personnel.
7 The second serial would be all the mission essential equipment and personnel. The third serial
8 would consist of logistical support for the unit. Spacing between intervals is dependent upon
9 the mission, enemy situation, and skill of the advance party in conducting preparation of the
10 new position. The rate at which this movement cycle is accomplished is dependent on the unit
11 involved and the progress of the maneuver unit.
12

13 **b. Vehicle Preparation.** The enemy situation will determine the convoy's
14 organization and combat posture. In a high threat environment vehicles must be hardened to
15 prevent the Marines and equipment in the convoy from easily being destroyed. To harden the
16 vehicle, sandbagging should occur. It requires approximately 300 sandbags to harden a five-
17 ton vehicle. Sandbags provide protection for personnel only. The driver's compartment floor
18 and driver's seat should be covered with a double interlocking layer of sandbags. Care must
19 be taken not to interfere with the driver's ability to manipulate the pedals of the vehicle. A
20 single layer should be placed below the seat. The hood and fender wells should be covered
21 with sandbags to prevent occupants from the effects of mines. Blast and fragmentation
22 vectored upwards can easily penetrate the thin metal of the vehicle. The fuel and batteries (if
23 external) should be covered as well to contain flames and spraying acid. All vehicles that
24 carry Marines should have a double layer of interlocking sandbags in the truck bed. Around
25 the sides of the bed, the sandbags need to rise to provide lateral protection. The double layer
26 prevents blast and fragmentation from penetrating through gaps in the bottom layer. Tie down
27 straps should be used to anchor sandbags used on the sides of vehicles. Along with the
28 sandbagging of vehicles, other principles of convoy operations in a hostile environment must
29 be employed. Canvasses must be rolled, windshields lowered, mirrors and shiny objects
30 darkened or removed, and straps from the rear of the vehicles removed to prevent slowed
31 exits. A cutting bar should be attached to the lead vehicle of the convoy or serial to trigger
32 booby traps and to prevent the injury by low hung wires. The cutting bar may affixed to the
33 front of the vehicle. Night vision devices should be employed and head lamps disabled or
34 covered over to prevent exposure of the convoy at night by accidental engagements of lights.
35 In addition, Marines must be proficient in reacting to ambushes. Marines must constantly
36 maintain an outward looking presence. An outward looking presence is defined as individual
37 weapons outboard, air and sniper sentries posted and observant, and mounted machine-guns
38 manned with the operators sweeping designated zones. Air and sniper sentries should be
39 rotated every half hour.
40

41 **c. Formations.** The four formations, open, closed, infiltration, and terrain march are
42 discussed below:
43

44 **(1) Open Column.** The open column formation affords the best dispersion and
45 passive security measures to the convoy. The open column formation effectively prevents

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1 concentrated effects of enemy direct and indirect fires on the convoy due to a one hundred
2 meter standard interval between vehicles. The high threat associated with this information and
3 the decrease in effective communications demands the development of effective communication
4 plans and procedures. Voice communications should be used as an alternate means with a
5 visual communication format as the primary means.
6

7 **(2) Close Column.** The close column formation facilitates outstanding command
8 and control. By maintaining convoy integrity through unbroken columns, good
9 communications and visual contact, maximum use can be made of the road network.
10 Disadvantages of a close column are dispersion is difficult, it is easily detected, and the drivers
11 become fatigued easier.
12

13 **(3) Infiltration.** An infiltration is conducted by dispatching vehicles individually,
14 in small groups, at irregular intervals, and prevents massing of vehicles. The average distance
15 between vehicles or groups is determined by the rate at which vehicles are dispatched.
16 Deception is provided by intermingling various types of vehicles and by permitting passing
17 within the column. Infiltration may provide the best passive defense against enemy
18 observation and attack; however, it provides the least active defense capability if individual or
19 small groups of vehicles are attacked. Further disadvantages of the infiltration convoy are that
20 convoy control is nearly impossible and drivers may become lost. Additionally, maintenance
21 and refueling are difficult to arrange.
22

23 **(4) Terrain March.** Terrain march is an off-road movement. Vehicles travel close
24 to tree lines, along gullies, and close to hill masses. A terrain march should be conducted
25 when enemy detection and attack by artillery or air is likely. Terrain march avoids traffic
26 delays and deceives the enemy about the size of the unit. It is useful when moving to an
27 alternate or supplementary position. It can be combined with another type of march; i.e.,
28 terrain march begins at a point where enemy detection becomes likely or the unit becomes
29 vulnerable. Terrain march is slow. It requires a detailed ground reconnaissance. In a terrain
30 march, the movement may be complicated by soil conditions, vehicle tracks may compromise
31 the new position, and the movement may be through another unit's area.
32
33

34 Immediate Action Drills

35
36 **a. Snipers.** Snipers alone can do little harm to a moving convoy. If, however, a
37 sniper can convince a convoy to stop and deploy, a more dangerous situation can develop.
38 Snipers are often used as deceptions to cause a convoy to stop in a larger enemy kill zone,
39 possibly a deliberate ambush. To avoid this eventuality the following actions should occur
40 when receiving sniper fire:
41

42 **(1)** Do not stop.

43
44 **(2)** If wind conditions permit, throw smoke to screen enemy observation.

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1
2 (3) Sentries should suppress the area in the sniper's general direction.

3
4 (4) Escort vehicles can provide suppressive fires, as well as, supporting arms.

5
6 (5) If faced with sniper fire, one should be vigilant of potential future confrontations
7 as the route most likely is not secure.

8
9 **b. Air Attack.** Enemy aircraft will pose a major threat to convoys. Convoys are most
10 likely to be strafed along their long axis. This provides the pilot with multiple targets on a
11 single pass. The most efficient way to reduce the pilot's target is for drivers to drive off the
12 road alternately and immediately, seeking concealment in a herring bone formation. Heavy
13 machine-guns should lead helicopters by 50 yards and fixed wing aircraft by two hundred
14 yards to be effective (see figure D-1). Some units may have LAAD attached with stingers.
15 LAAD provides an active defense against air attack. Passive defensive measures include:

16
17 (1) Route selections that take advantage of natural concealment.

18
19 (2) Driving at night and using the closed column formation to greatly reduce the
20 chance of the convoy's acquisition by aircraft, providing that all precautions taken during
21 daylight operations are applied as well.

22
23 (3) The use of friendly air or a combat air patrol to provide security of varying
24 degrees.

25

AIRCRAFT	COURSE	AIM POINT
JET	CROSSING	TWO FOOTBALL FIELDS IN FRONT OF NOSE
JET	OVERHEAD	TWO FOOTBALL FIELDS IN FRONT OF NOSE
JET	DIRECTLY AT YOU	SLIGHTLY ABOVE AIRCRAFT NOSE
HELICOPTER	CROSSING	ONE-HALF FOOTBALL FIELD IN FRONT OF NOSE
HELICOPTER	HOVERING	SLIGHTLY ABOVE HELICOPTER BODY
HELICOPTER	DIRECTLY AT YOU	SLIGHTLY ABOVE HELICOPTER BODY

26 **Figure D-1. Engaging Enemy Aircraft.**

27
28 **c. Ambushes.** The enemy ambush provides the greatest single threat to a convoy's
29 survival. For a convoy, two distinct categories of ambushes are relevant. The difference
30 exists as to whether the ambush is blocked or not.

31
32 (1) **Unblocked Ambush.**

33
34 (a) Vehicles caught in the kill zone continue to move.

35
36 (b) Vehicles which have not yet entered the kill zone find cover and
37 concealment, stop short, and dismount.

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1 (c) Vehicles caught in the kill zone that become disabled conduct a vehicle
2 unloading drill. Then, situation dependent, the dismounted Marines provide suppressive fire
3 on the enemy or assault through enemy positions.
4

5 (d) The armored escort vehicles find positions to return suppressive fire and
6 support maneuver of security forces.
7

8 (e) Security forces maneuver and assault based on rehearsals or frag orders.
9 Indirect fire or CAS are called in on the fleeing or fighting enemy as appropriate.
10

11 (2) Blocked Ambush

12 (a) Vehicles which have not yet entered the kill zone find cover and
13 concealment, stop short, and dismount.
14

15 (b) Vehicles blocked and trapped in the kill zone conduct unloading drills and
16 assault or return fire as a base of fire.
17

18 (c) Armored escort vehicles find positions to return suppressive fire and support
19 the maneuver of security forces.
20

21 (d) Security forces maneuver and assault from outside the kill zone based on
22 rehearsals or frag orders.
23
24
25

26 Vehicle Unloading Battle Drill

27
28 The key to surviving an enemy ambush or air attack is the ability of occupants to rapidly exit a
29 vehicle and find cover. If ambushed, a truck may be disabled or unable to escape the kill
30 zone. The occupants need to dismount quickly. A Marine on the truck is on the skyline, and
31 the vehicle is the target.
32

33 a. Unloading Battle Drill Sequence

34 (1) As soon as it is determined that the vehicle is unable to escape the kill zone, two
35 sentries on the enemy side of the truck bed must return a high volume of fire.
36
37

38 (2) Alternately, the two sentries should throw smoke grenades in the direction of the
39 enemy.
40

41 (3) Simultaneously, the remaining vehicle occupants dismount the vehicle on the
42 side opposite of the enemy and ensure they are masked from enemy fire.
43

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1 (4) The A-driver should use the ring mount, if equipped, to lay down suppressive
2 heavy machine-gun fire.

3
4 (5) After covering the vehicle unloading by fire, the two sentries should follow the
5 other Marines over the “masked” side.

6
7 (6) The first objective is to find cover. The vehicle is the target and Marines
8 should find cover elsewhere vice use it as protection.

9
10 (7) If the kill zone is well planned by the enemy, cover may not exist, and a rapid
11 and violent assault against the enemy may be required.

12
13 (8) If cover is available, it should be used and fire returned. The section then
14 becomes a base of fire for another section’s maneuver. Once the situation has stabilized, the
15 security force can execute its scheme of maneuver.

16
17 **b. Reorienting.** Once the enemy ambush has been destroyed or eliminated, all
18 personnel should return to a rally point and accountability should be conducted. Additionally,
19 any injuries should be triaged by corpsmen.

20 21 22 **Damaged Vehicles**

23
24 If a vehicle is damaged beyond immediate repair and a wrecker is not available, the convoy
25 commander may have to order its destruction. Critical cargo and Marines must then be
26 spreadloaded throughout the convoy. When a recovery vehicle is present, METT-T will
27 dictate the actual procedures.

28 29 30 **Road Blocks**

31
32 The most serious threat to a convoy is a road block. The road block is the most efficient
33 method for the enemy to stop the convoy, causing it to become extremely vulnerable to enemy
34 ambush and fire support. All obstacles must be breached quickly in order for the convoy to
35 survive. Breaching any obstacles is a methodical battle drill. The two most critical steps in
36 breaching obstacles are proper organization and early identification. Prior to conducting the
37 convoy, the security force must be organized and rehearsed for limited breaching operations
38 (i.e., separated into support, breach, and assault elements). The lead vehicle in the convoy
39 must be far enough ahead to identify the road block prior to the rest of the convoy entering a
40 possible ambush area or kill zone. Once the convoy commander decides to breach the
41 obstacle, the security force utilizes the suppress, obscure, secure, and reduce (SOSR)
42 breaching technique to effect the breach. The respective responsibilities of Marines in the
43 designated elements are as follows: the support element moves forward to clear both sides of

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1 the road and to provide near and far side security around the obstacle. The breach element is
2 sent forward to clear the obstacle. The assault element is kept in reserve in case the convoy is
3 ambushed during the breaching operation. These principles will provide adequate means to
4 survive.

7 Control Measures

8
9 The commander establishes measures to control the movement of the unit. Control measures
10 are planned and confirmed/refined during the reconnaissance. The control measures are as
11 follows:

12
13 **a. Start Point (SP).** The SP is normally a geographical feature identifiable on the
14 ground and on a map at which the first vehicle of a convoy crosses at a specified time. During
15 unit displacement, the SP is also the point that higher headquarters assumes march control of
16 subordinate units. Subordinate units determine route and time to travel to the SP.

17
18 **b. Checkpoints (Ck Pt).** Checkpoints are normally geographical features identifiable
19 on the ground and on a map along the route of march. A unit reports crossing checkpoints to
20 its higher headquarters. Checkpoints are used to assist in the planning of fires for the
21 movement.

22
23 **c. Release Point (RP).** An RP is normally a geographical feature identifiable on the
24 ground and on a map at which convoy control ceases as the last vehicle of the convoy crosses
25 the point at the specified time. During unit displacement, the RP is also the point that march
26 control is terminated by higher headquarters.

27
28 **d. Pickup Point.** The pickup point is a location normally within the position where
29 vehicle ground guides meet their vehicles to lead them into position.

30
31 **e. Rally Point.** The rally point is normally a geographical feature identifiable on the
32 ground and on a map used for assembly and recovery of vehicles and personnel following an
33 attack. On attack of the position, each section vehicle is quickly loaded with personnel and
34 mission-essential equipment and moved to the rally point without delay. At the rally point,
35 vehicles are dispersed, and personnel dismount, establish a hasty defense, and await further
36 instructions. The rally point should be on the route to the alternate position. It is located far
37 enough from the primary position to remove the unit from further danger, but not so far that
38 drivers may become lost. All personnel must know the location of the rally point.

39
40 **f. Navigation Aids.** Various techniques and means are used to assist navigation along
41 the route. In some terrain and conditions, this is essential to displacement. The following are
42 various techniques and means to assist navigation along the route:

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44 **(1) PLGR**

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(2) PADS

(3) The odometer and compass allow a unit to navigate by dead reckoning. Mileage readings are determined from a map (1 Km = 0.63 miles) or measured during a ground reconnaissance. Mileage readings to key turns on the route can be provided to drivers by strip map during the movement briefing.

(4) Route markers can be placed at key turns along the route during the reconnaissance.

(5) When required, personnel are placed at key turns. They should be posted in pairs near the destination or other friendly positions. This technique is useful when moving by/through another unit on the route.

March Discipline

a. Officers and noncommissioned officers ride where they can best control the march. The senior person in each vehicle is the vehicle commander and is responsible for march discipline. He ensures obedience to dispersion, blackout, rate of march, etc. Each vehicle commander must watch for signs, markers, signals, and other traffic.

b. Key personnel should be dispersed throughout the column to prevent loss of a disproportionate number of these persons, if attacked.

c. The column must keep moving. If a vehicle breaks down, a vehicle should be designated to stop and pick up the mission-essential personnel and equipment. If the disabled vehicle cannot be repaired in a reasonable time or cannot be recovered by the unit, the location and condition of the vehicle are reported to the commander for recovery. Depending on the enemy threat the driver and a security force may remain with the vehicle. The maintenance representative should travel to the rear of the column. He temporarily stops to assess/make repairs to disabled vehicles on the route. However, he must proceed ahead without lengthy delays to be available for other repairs, as needed.

d. When making turns, the lead vehicle should take necessary precautions to ensure that the trailing vehicle sees the turn; i.e., slow speed temporarily, hand signal, etc. This is particularly true on a winding or hilly road. The vehicles resume normal interval after the turn. This procedure will preclude a vehicle or portion of the convoy from losing contact with the concho.

e. Signals should be established in the unit SOP for day and night movement. Color flags, pyrotechnics, hand and arm signals, vehicle horns, radio, etc., can be utilized. The SOP

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1 should address how signals will be relayed when the line of sight is restricted; i.e., the column
2 is dispersed around a bend in the road or a hill.

3

4 **f.** During administrative marches, halts are made at regular intervals or at selected
5 sites to rest personnel, service vehicles, and check the loads. For extended vehicle marches,
6 wooded areas, built-up areas, and winding roads are selected as halting places, since they
7 provide concealment and hinder attack by enemy aircraft. Avoid stopping near crossroads,
8 railroads, and other easily identifiable reference points. Normally, halts are not scheduled for
9 tactical marches.

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