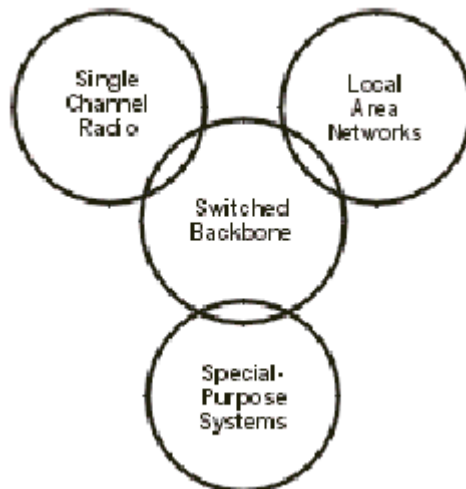# Chapter 7

Artillery Communications and Information Systems

Reliable communication is a basic requirement for the maximum employment or artillery. This chapter describes communications and information systems (CIS) and artillery specific communication requirements and net structure. MCWP 3-16.2, *Tactics, Techniques, and Procedures for the Marine Corps Fire Support System*, MCRP 3-16.2A, *Tactics, Techniques, and Procedures for AFATDS*, and MCRP 3-16.2B, *Tactics, Techniques, and Procedures for IFSAS* outline procedures for configuring nets for data transmission with automated systems.

7001.   Forms of Communications

The two original forms of communication, written and voice, have been augmented by automated systems with a third form of communication, data. Data communications increase the speed of communicating on the battlefield, transmitting large amounts of information while reducing signature and enhancing survivability. Data communications require prior integration in order to be successful in information processing and dissemination.

7002.   Marine Air-Ground Task Force Communications Architecture. The MAGTF communications architecture may be viewed as four subnetworks that will interface with one another through the tactical data network (TDN). Figure 7-1 depicts these four networks-single-channel radio, the switched backbone, LANs, and special-purpose systems. Each of these networks and the TDN are briefly described below. This overview is designed to give all Marines who use tactical communications an understanding of the capabilities and limitations of these networks. This understanding will help to ensure that operations planning takes into account the capabilities and limitations of MAGTF communications

1 networks. For a more detailed discussion of the MAGTF communications
2 architecture, readers should refer to chapter 4 of MCWP 6-22,
3
4
5 **Figure 6-1. Marine Air-Ground Task Force Communications Architecture**

Frequency Band	MAGTF SCR Equipment Used	Operating Frequency Range	Typical Application
HF	AN/PRC-104 AN/GRC-193 AN/MRC-138	2–29.999 MHz	Radio line of sight and beyond/long range
VHF	AN/PRC-68 AN/PRC-77 VRC-12 family SINCGARS family	30–88 MHz	Radio line of sight and relay/retransmission
	AN/PRC-113 AN/VRC-83	116–150 MHz	Critical line of sight (ground to air)
UHF	AN/PRC-113 AN/VRC-83 AN/GRC-171	225–400 MHz	Critical line of sight (ground to air)
	AN/PSC-3 AN/PSC-5		SATCOM footprint

6

7 **Figure 3-2. SCR**

8
9 **(1) Single-Channel Radio**. MAGTF single-channel radio equipment includes hand-
10 held, manpack, vehicle-mounted, ground-mounted, and shelterized radios
11 operating in the HF, very high frequency (VHF), and ultrahigh frequency
12 (UHF) bands (see figure 7-2). It also includes TACSAT radios in the UHF
13 band. The most widely employed tactical radios-the SINCGARS family-
14 provide both built-in COMSEC and electronic counter-countermeasures
15 (ECCM) capabilities. Single-channel radio equipment is easy to operate, and
16 single-channel radio networks are easily established, rapidly reconfigured,
17 and, most importantly, easily maintained on the move.
18
19 Consequently, single-channel radio networks provide the principal means of
20 communications support for maneuver units. Single-channel radio provides
21 secure voice and data communications capability. However, data transfer rates-
22 commonly referred to as bandwidth-are limited. Furthermore, single-channel
23 radio in the VHF and UHF bands is normally limited to line-of-sight ranges. In the
24 HF band, single-channel radio can support long-range communications, but not
25 while on the move. Single-channel radio TACSAT communications combine
26 mobility, flexibility, and ease of operation with unlimited range. However,
27 TACSAT communications are restricted by the limited availability of satellite

1 frequencies and channels. In addition to a limited capability to support data
2 transfer, other limitations of single-channel radio networks include vulnerability
3 to enemy electronic warfare, susceptibility to interference, and limited spectrum
4 availability. As a result of its limited availability, the MAGTF employs TACSAT
5 primarily in support of critical, long-range communications requirements (e.g.,
6 communications support for deep reconnaissance operations or ship-to-shore
7 connectivity to the tactical echelon of a MEU(SOC) when deployed ashore).
8 Figures 7-1 through 7-4 depict fire support radio nets including net control,
9 guard, and monitor responsibilities. Figures 7-5 and 7-6 depict communication
10 connectivity for artillery regiments and DS artillery battalions.

11

12 **(2) Switched Backbone**. The MAGTF switched backbone consists of switching,
13 routing, and wideband transmission systems that provide a high-capacity
14 communications backbone for the MAGTF as well as connectivity with the
15 DISN (see figure 3-3). It is the tactical equivalent of commercial local and
16 long-distance networks and, in some situations, interfaces with and uses
17 those commercial networks. The switched backbone uses a mix of older
18 equipment developed under the TRI-TAC program and newer equipment and
19 technology.[1] The switched backbone is tailored to meet the requirements of
20 a particular operation and has the flexibility to adapt to support the unfolding
21 tactical situation and overall scheme of maneuver. Planning, redesign, and
22 adaptation are continuous as switched backbone equipment and personnel
23 arrive in theater and the MAGTF transitions to operations ashore. Larger
24 headquarters, rear areas, expeditionary airfields, and command and control
25 centers at higher echelons are the principal subscribers to the switched
26 backbone. Maneuver battalions cannot be constrained by the inherent lack of
27 mobility of the switched backbone and normally link to it through a single-
28 channel radio interface. The MAGTF switched backbone includes switches,
29 IP routers, and wideband multichannel radio transmission systems.

30

31 · **Wire**. Wire is most often used to connect cells within a COC and connect
32 multiple automated terminals within a cell. Where the tactical situation
33 permits, wire provides a redundancy for some radio nets. Often an FSC
34 may want a direct wire link which does not pass through a switchboard
35 (hotline) to the supporting artillery FDC or the TPC. Wire
36 communications can be secured and used for both voice and data
37 communications.

---

[1] The TRI-TAC family of equipment was developed in the 1970s under a joint program by the Marine Corps, Air Force, and Army. TRI-TAC equipment, which was fielded beginning in the mid-1980s, provides the major components of the MAGTF switched backbone. This equipment was developed to provide interoperable, secure, and deployable voice and data digital switching and transmission systems for tactical forces operating in a joint environment.

Switches. Switches provide the means to route traffic through a communications network. The three basic categories of switches are circuit, message, and packet. Circuit switches generally support telephone traffic, message switches process formatted messages for storage and delivery, and packet switches process data into packets for transmission and then reassemble the packets at the other end. The Marine Corps achieves a packet switching capability through the use of IP routers.

· **Internet Protocol Routers**. The proliferation of information systems in the modern battlespace is driving an increased demand for data communications. Although circuit switches and message switches can support data communications, packet switching is far more efficient. The Marine Corps has developed a packet switching capability through the use of commercial IP routers. The IP used with these routers provides for transmitting blocks of data called datagrams from sources to destinations, where sources and destinations are identified by fixed-length addresses (IP addresses). The router reads the network address of all data packets and forwards them to the addressee via the best available communications path. These IP routers form a data communications overlay on the switched backbone and serve as gateways to the IP router networks of the other Services, the JTF, and the DISN IP router networks: JWICS, SIPRNET, and NIPRNET. IP routers are an integral part of the TDN gateways and servers described below.

Multichannel Radio. Multichannel radio provides the communications links for the switched backbone. It permits multiple users to access a single communications path. Multichannel radio includes both terrestrial and TACSAT radios. Multichannel radio provides worldwide connectivity through links to the DISN as well as the links for long-distance communications within the theater and within the MAGTF. Multichannel radio provides reliable, flexible, and high-capacity transmission paths for both voice and data communications. Its primary disadvantages are complexity and a lack of mobility. A multichannel radio network requires more time to set up and more expertise to operate and maintain than a single-channel radio network, and it cannot operate on the move. Consequently, as discussed previously, maneuvering elements will rely primarily on single-channel radio. Multichannel radio will be employed only down to the infantry regiment and artillery battalion levels in the GCE.

(3) **Local Area Networks**. LANs are data communications networks that are designed to support information exchange, collaboration, and resource sharing in a particular unit, agency, facility, center, or cell in a confined geographic area. Because of the limited distances involved, LANs can support high data throughput up to 100 Mbps, although 10 Mbps is more common. LANs include terminal equipment connected to a transmission medium such as wire or fiber-optic cable. LAN media used in the MAGTF include both copper-based coaxial and twisted-pair cable used within local facilities, such as a regimental-level COC, and fiber-optic cable used as a higher speed backbone that connects multiple facilities in a large headquarters complex. Fiber-optic backbone LANs are also used aboard Navy ships in conjunction with copper-based coaxial and twisted-pair LANs within an operational workspace such as the LFOC. MCWP 6-22 contains an extensive discussion on how specific LAN media, access methods, technologies, protocols, and equipment are employed to meet the specific requirements of a unit.

(4) **Special-Purpose Systems**. MAGTF special-purpose communications systems are designed to support specific functions such as position location and navigation, intelligence dissemination, and air defense.

· **Position Location Reporting System**. The PLRS provides real-time, three-dimensional position location and navigation information. PLRS also provides a limited but robust data communications capability. Through the use of PLRS, commanders can track troop locations and units can navigate with precision over any terrain. PLRS master stations are installed in the LHD-1 Wasp class of amphibious ships. This provides CATF and CLF with the capability to track both the ship-to-shore movement and subsequent operations ashore. An interface to PLRS can provide friendly ground track data to automatically update the common operating picture/common tactical picture. The Marine Corps also plans to field the Army-developed Enhanced Position Location Reporting System (EPLRS). EPLRS has a much greater data communications capability than PLRS and will be used to improve the ability to transfer data when the switched backbone is unavailable_primarily in support of the maneuver elements of the GCE.

· **Precise Lightweight Global Positioning System Receiver**. The AN/PSN-11 precise lightweight Global Positioning System (GPS) receiver (PLGR) is a small, hand-held, GPS receiver that weighs approximately three pounds. It provides precise positioning and timing solutions based on signals received from the GPS satellite constellation. It is important to understand the difference in capabilities between the

PLGR and PLRS. Although the PLGR provides land navigation capability, it cannot provide the location of another unit and has no communications capability beyond the passive receipt of location and time. Consequently, the use of the PLGR to update ground tracks in the common operating picture/common tactical picture is a manual process that places a strain on tactical communications systems. Plans call for fielding a capability to automatically generate position location information messages based on data received from the GPS. This local position location information would be passed over a single-channel radio net to other locations to update the common operating picture/common tactical picture. However, given the vulnerability of the GPS to interference and jamming, GPS should be viewed as a complement to, not a replacement for, PLRS.

(4) **Tactical Data Network**. The Marine Corps is in the process of replacing interim, locally configured IP router-based data communications packages with the TDN. The TDN will augment the existing MAGTF communications infrastructure to provide an integrated data network_the MAGTF intranet. The TDN will connect the subnetworks of the MAGTF communications architecture and extend the MAGTF intranet down to battalion level. The data network established through the TDN will form the communications backbone for MAGTF information systems and the DMS. The TDN will consist of a network of gateways and servers interconnected with one another and their subscribers via a combination of common-user long-haul transmission systems, LANs, single-channel radios, and the switched telephone system. This network will provide its subscribers with basic data transfer and switching services; access to strategic, supporting establishment, joint, and other-Service component TDNs; network management capabilities; and value-added services such as message handling, directory services, file sharing, and terminal emulation support. A gateway will be mounted on a heavy-variant HMMWV, and servers will be mounted in three transit cases, each of which is man portable. Gateways will be employed at the MEF and MSCs, and servers will be fielded down to battalion/squadron level.

Messenger. The use of messengers must be planned because they provide a secure, reliable means of communications. When time permits, they may be the most effective means for sending fire support plans and overlays.

Summary. MAGTF communications and information systems are designed to support the command and control requirements of the MAGTF on the expeditionary battlefield without adversely affecting the freedom of action or mobility of the MAGTF. These communications and information systems provide

MAGTF commanders and their staffs with reliable, flexible, and responsive tools to rapidly collect, process, analyze, exchange, and disseminate information in support of operations planning and execution. The systems make available the information needed, when it is needed, wherever it is needed on the battlefield.

7003. Communications System Planning

Artillery nets are established to conduct fire mission processing and fire support coordination as efficiently as possible with the least amount of assets. Radio communications allow artillery nets to be monitored at appropriate levels to ensure effective and timely, accurate fire support. Considerations for planning include assets available, number of nets required, number of stations per net, digital systems, and information flow. When the communications system incorporates digital communications, the planner must ensure equipment compatibility at the various levels (i.e., between FOs, FDCs, TPC, etc.). Subscribers must configure their devices with the correct parameters as well as ensure messages/transmissions are addressed to all appropriate elements. Another consideration is the security of nets.

        a. Security. Force protection entails communications security. Communications that can be intercepted are a lucrative source of intelligence to the enemy. However, speed and accuracy of communications are also critical to friendly operations, particularly in artillery operations. There may be situations when these requirements conflict (i.e., sufficient encryption devices to cover all nets couple with a requirement for rapid communications). In these instances, a good rule of thumb is that security takes precedence on nets where targeting and fire planning information is passed, since the enemy may intercept these communications and take appropriate counteraction. On the other hand, speed and accuracy take precedence on nets where immediate requests for fire are passed. Even if these communications are intercepted, there is seldom time for the enemy to warn the personnel or units affected.

        b. Communication Nets. The radio circuits which are employed by artillery units are discussed below. The net composition depicted in this chapter for the various nets represents a commonly used composition. The influx of automated systems requires consideration as to which nets will be digital or voice without increasing asset requirements. Because of enemy electronic countermeasure capabilities, communications equipment failures, or lack of radios or personnel, it will not always be possible for all COCs/FDCs to monitor all the circuits shown in figure 7-1. The S-3 should coordinate with the S-6 for establishing net structure and net priorities. Then, when some circuits are lost

1 or become inoperable, the most important nets will be retained and
2 communications will be restored in the order of the established priority.
3
4
5 ## 7004.   Artillery Regimental Communication Nets
6
7   **a. Division Command Net (HF)**. This net provides a means for the
8 division commander to command and coordinate administrative and logistical
9 activities of subordinate units. Artillery stations on this net include:
10
11   • Artillery Regiment.
12   • Artillery Battalion with a GS or GS-R tactical mission.
13   • O/O Artillery Battalion with alternate regimental CP mission.
14
15   **b. Division Tactical Net (VHF)**. This net provides a means for the
16 division commander to command and control major combat units. Examples
17 include changes to tactical mission assignments and displacement reports. It
18 may also be used as an alternate to the division command net.
19
20   • Artillery Regiment.
21   • Artillery Battalion with a GS or GS-R tactical mission.
22   • O/O Artillery Battalion with alternate regimental CP mission.
23
24   **c. Division Artillery Air Spot Net (VHF)**. This net provides a means for
25 aerial observers to adjust artillery fire. When the net is in use, the arty LNO(s)
26 monitor(s) for targets in his unit's zone just as he does with COF nets. The FO
27 may use this net to coordinate with the aerial observer for attack of targets in
28 his company's zone. Artillery stations on this net include:
29
30   • Artillery Regiment: net control. For specific missions, control may
31   be passed to the FDC conducting the mission (battalion or battery).
32   • Artillery Battalion, as required.
33   • Firing Battery, as required.
34
35   **d. Division Fire Support Coordination Net 1 (VHF)**. This net provides a
36 means for the division FSC to coordinate voice fire support. Artillery stations on
37 this net include:
38
39   • Artillery Regiment.
40   • Artillery Battalion with a GS or GS-R tactical mission.
41   • O/O Artillery Battalion with alternate regimental CP mission.
42

1   e. **Division Fire Support Coordination Net 2 (VHF).** This net provides a
2 means for the division FSC to coordinate digital fire support. Artillery stations
3 on this net include:
4
5   • Artillery Regiment.
6   • Artillery Battalion with a GS or GS-R tactical mission.
7   • O/O Artillery Battalion with alternate regimental CP mission.
8
9   f. **Division Communication Coordination Net (VHF).** This net provides a
10 means for the G-6 to coordinate, install, and restore communication circuits
11 with subordinate units. Artillery stations on this net include:
12
13   • Artillery Regiment.
14   • Artillery Battalion with a GS or GS-R tactical mission.
15   • O/O Artillery Battalion with alternate regimental CP mission.
16
17   g. **Division Intelligence Net (VHF).** This net provides a means for the
18 rapid collection and dissemination of intelligence information. Artillery stations
19 on this net include:
20
21   • Artillery Regiment.
22   • Artillery Battalion with a GS or GS-R tactical mission.
23   • O/O Artillery Battalion with alternate regimental CP mission.
24
25   h. **Artillery Regimental Command Net (HF).** This net provides a means
26 for the artillery regimental commander to command and coordinate
27 administrative and logistical activities of subordinate units. It may be used as
28 an alternate for FD and tactical orders. The division FSCC may monitor, as
29 required, principally as an alternate net for communicating with the artillery
30 regiment should other nets become inoperative. Artillery stations on this net
31 include:
32
33   • Artillery Regiment, net control.
34   • Artillery Battalions.
35   • Attached Units.
36
37   i. **Artillery Regimental Tactical Net (VHF).** This net provides a means for
38 the artillery regimental commander to command and control subordinate units.
39 Examples of types of traffic include changes in tactical mission assignments and
40 reports of displacements. It may also be used as an alternate FD and fire
41 support coordination net. Artillery stations on this net include:
42
43   • Artillery Regiment, net control.

- Artillery Battalions.
- Attached Units.

j. Artillery Regimental Fire Direction Net (VHF). This net provides a means for the artillery regiment to exercise tactical FD (i.e., transmitting orders, fire missions, fire plans, tactical information, and meteorological data to battalions). Regimental Fire Direction is also the net used to collect, exchange, and pass combat and target information. This net may be voice or digital. It may be used by subordinate units to request reinforcing fires. The artillery officer at the division FSCC may monitor to keep abreast of artillery fire planning and to pass fire support coordination traffic if no other net is available. Artillery stations on this net include:

- Artillery Regiment, net control.
- Target Processing Center via relay through the Regimental FDC.
- Artillery Battalions.
- O/O Artillery Battalion with Alternate Regimental COC mission.

k. Artillery Regiment Survey/Metro Net (VHF). This net provides a means to provide survey information from survey teams and a means to exchange meteorological information and ballistic meteorological information between artillery units.

- Artillery Regiment, net control.
- Target Processing Center via relay through the Regimental FDC.
- Artillery Battalions.

l. Artillery Regiment Radar Telling Net (VHF). This net provides a means for the exchange of radar intelligence information and requests for surveillance of enemy counterfire weapons. It may also be used for registration and adjustment of artillery fire.

- Artillery Regiment, net control.
- Target Processing Center via relay through the Regimental FDC.
- Artillery Battalion(s), as required.
- Artillery Battery(ies), as required.

m. Artillery Regiment Communication Coordination Net (VHF). This net provides a means for the S-6 to coordinate, install, and restore communication circuits with subordinate units. Artillery stations on this net include:

- Artillery Regiment, net control.
- Artillery Battalion(s) with DS tactical mission(s).

1
2

3 **7005.   Artillery Battalion Communication Nets**

4

5   a. **Artillery Battalion Command Net (VHF)**. This net provides a means for
6 the artillery battalion commander to command and control subordinate units. It
7 is used principally for administrative, logistic, and tactical traffic not related to
8 FD. The supported regimental FSCC may monitor, as required, principally as an
9 alternate net for communicating with the DS battalion should other nets become
10 inoperative. Artillery stations on this net include:

11

12   • Artillery Battalion, net control.
13   • Firing Batteries of the artillery battalion.
14   • Artillery Battalion (s) with a R mission.

15

16   b. **Artillery Battalion Fire Direction Net (VHF)**. This net may be voice or
17 digital. When operating voice, this net provides a means for the artillery
18 battalion to exercise tactical FD of subordinate units. If tactical FD is
19 decentralized, this net may be used by batteries to request reinforcing fires.
20 The artillery LNO at the regimental FSCC (battalion FSCC as required) may
21 monitor to keep abreast of artillery fire planning and significant artillery
22 missions. In a digital environment, tactical FD is incorporated into a COF, and
23 battalion FD is used for coordinating reinforcing fires. Artillery stations on this
24 net include:

25

26   • Artillery Battalion, net control.
27   • Firing Batteries of the artillery battalion.
28   • Artillery Battalion (s) with a R mission.

29

30   c. **Artillery Conduct of Fire Net (VHF)**. This net provides a means for
31 observers to request and adjust artillery fire. The artillery LNO at battalion
32 FSCCs monitor/receive traffic on the net for fire support coordination purposes.
33 FOs and LNOs may use the net to exchange targets and fire planning
34 information. If conducting battalion-directed operations, the battalion
35 establishes as many as three COF nets and acts as net control on each. The
36 artillery battalion may identify a COF net for each maneuver battalion to
37 facilitate continuity of fire support during battery displacements. The maneuver
38 battalion (LNOs, FOs) remains on the assigned COF net, and the artillery
39 battalion FDC receives all calls for fire (CFFs). It then designates which firing
40 battery will provide fire support to the maneuver battalion. This allows the
41 artillery battalion to quickly mass on larger targets, as well as manage the
42 assets of the battalion as a whole. If conducting autonomous operations, each

1 battery FDC maintains a COF net and acts as net control (each net is monitored
2 by the battalion FDC when present). Autonomous operations are also
3 conducted by batteries attached to a BLT. When observers are employing
4 digital devices, one or more COF nets must be dedicated to digital
5 communications. Artillery stations on this net include:

6

7   • DS Artillery Battalion headquarters.
8   • Firing Battery.
9   • Artillery LNO at battalion FSCC.
10   • FOs.
11   • Artillery LNO at regimental FSCC, as required.
12   • Artillery unit(s) with a R mission.

13

14

15 **7006. Artillery Battery Communication Nets**

16

17 a. **Artillery Battery Command Net (VHF).** This net provides a means for
18 the artillery battery commander to command and coordinate administrative and
19 logistical matters. Artillery stations on this net include:

20

21   • Artillery Battery Headquarters.
22   • Subordinate elements, as required.
23   • Artillery Battery Convoy, as required.

24

25 b. **Artillery Conduct of Fire Net (VHF).** See paragraph 7005c.

26

27

28 **7007. DS Artillery Battalion Communication Nets**

29

30 Artillery Battalions with a DS tactical mission are required to monitor various
31 maneuver unit communication nets. The following are designated nets that
32 must be monitored.

33

34   • Infantry Regiment Fire Support Coordination Net (VHF).

35

NOTE: There may be a separate digital radio net.

36

37   • Infantry Regiment Command Net (HF).
38   • Infantry Regiment Tactical Net (VHF/HF).
39   • Infantry Regiment Intelligence Net (VHF/HF).
40   • Infantry Regiment Communications Coordination Net (VHF/HF).

1
2
3 **7008.   Alternate Uses of Nets**
4
5 The nets described in the previous paragraphs will normally accommodate the
6 communications requirements for effective artillery operations. When used for
7 their stated purpose, circuits do not become overloaded and then remain free for
8 necessary communications. However, should some nets become unavailable
9 through heavy traffic, enemy interference, or equipment failure, personnel
10 should not hesitate to use any available net to pass urgent traffic. The number
11 of nets plus the availability of wire provides flexible options for artillery
12 personnel to provide continuous communications.

1

ARTILLERY REGIMENTAL NETS	01	02	03	04	05	06	07	08	09	10	11	12	13	14
LEGEND: X = GUARD M = MONITOR W = WHEN DIRECTED A = AS REQUIRED C = NET CONTROL	DIV CMD	DIV TAC	DIV ARTY SPOT	DIV FSC1	DIV FSC2 DIG	DIV INTEL	REGT CMD	REGT TAC	REGT FD1 DIG	REGT FD2 VOICE	SURVEY/METRO	RADAR TEL DIG	DIV COMMCOORD	REGT COMMCOORD
EMISSION DESIGNATORS	HF	VHF	VHF	VHF	VHF	VHF	HF	VHF	VHF	VHF	VHF	VHF	VHF	VHF
RESTORATION PRIORITIES	06	04	14	01	02	08	07	05	03	11	09	10	12	13
DIVISION FSCC	C	C	A	C	C	C						X	C	
ARTY REGIMENT FDC	X	X	A	X	X	X	C	C	C	C	X	X	X	C
ARTY REGIMENT TPC											C	C		
ARTY REGIMENTAL CMDR	X						A	X						
ARTY BATTALION CMDRS							X							
ARTY BATTALION DS			W				X	X	X	X		W		X
ARTY BATTALION GS			W				X	X	X	X		W		
ARTY BATTALION GSR/R			W				X	X	X	X		W		X
RADAR												X		
MDS											X			
MLRS (if applicable)								W						
RPV (if applicable)								W						
INF BN FSCC									W	W				

2
3
4
5
6
7
8
9
10
11

Figure 7-1. Example Artillery Regiment Guard Chart.

1

LEGEND:

X = GUARD
M = MONITOR
W = WHEN DIRECTED
A = AS REQUIRED
C = NET CONTROL

DIRECT SUPPORT	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
(unit)	BN CMD	BN COF A	BN COF B	BN COF 1	BN COF 2	REGT FSC 1	REGT FSC 2	INF REGT CMD	INF REGT TAC	RADAR TEL	BN FD 1	REGT FD 1	REGT FD 2	ARTY REGT TAC	ARTY REGT CMD	DIV ARTY SPOT	BN COMM CORD
EMISSION DESIGNATORS	VHF	VHF DIG	VHF DIG	VHF	VHF	HF	VHF DIG	VHF	HF	VHF DIG	VHF	VHF DIG	VHF	VHF	HF	VHF	
RESTORATION PRIORITIES	06	09	10	01	02	03	11	15	05	12	04	08	14	07	13	16	17
ARTY BATTALION	C	C	C	C	C	X	X		X	C	C	X	X	X	X	W	C
ARTY REGIMENT												C	C	C	C	C	
INF REGIMENT						C	C		C								
ARTY BATTALION CMDR	X													A	X		
ARTY BATTERY CMDRs	X																
BATTERY 1		X		M						A	X						X
BATTERY 2		X		M						A	X						X
BATTERY 3			X		M					A	X						X
BATTERY 4 (if applicable)		X		M						A	X						X
INF REGIMENT FSCC		X		X						M							
FO 1		X		X													
FO 2		X		X													
FO 3		X		X													
FO 4		X		X													
FO 5		X		X													
FO 6		X		X													
FO 7			X		X												
FO 8			X		X												
FO 9			X		X												
FO 10 (if applicable)			X		X												
FO 11 (if applicable)			X		X												
FO 12 (if applicable)			X		X												
RADAR (if attached)										X	X						
MET											A		X				
SURVEY	X																
LNO BATTERY 1		X		X		X	X				X						
LNO BATTERY 2		X		X		X	X				X						
LNO BATTERY 3			X		X	X	X				X						
LNO BATTERY 4 (if applicable)			X		X	X	X				X						

1   Figure 7-2. Example Direct Support Artillery Battalion Guard Chart.

1

GENERAL SUPPORT	01	02	03	04	05	06	07	08
LEGEND: X = GUARD M = MONITOR W = WHEN DIRECTED A = AS REQUIRED C = NET CONTROL	BN CMD	BN FD	REGT FD1 DIG	REGT FD2 VOICE	RADAR TEL DIG	REGT CMD	REGT TAC	BN COMM COORD
EMISSION DESIGNATORS	VHF	VHF	VHF	VHF	VHF	VHF	VHF	VHF
RESTORATION PRIORITIES	04	02	01	07	06	05	03	08
ARTY BATTALION	C	C	X	X	W	X	X	C
ARTY REGIMENT			C	C	C	C	C	
ARTY BATTALION CMDR	X						A	
BATTERY COMMANDERS	X							
BATTERY 1		X			W			X
BATTERY 2		X			W			X
BATTERY 3		X			W			X
BATTERY 4 (if applicable)		X			W			X
RADAR		W			X			
MDS		X						
SURVEY	X							

1   Figure 7-3. Example General Support Artillery Battalion Guard Chart.

1

GENERAL SUPPORT REINFORCING	01	02	03	04	05	06	07	08	09
LEGEND: X = GUARD M = MONITOR W = WHEN DIRECTED A = AS REQUIRED C = NET CONTROL	BN CMD	BN FD	REGT FD1 DIG	REGT FD2 VOICE	RADAR TEL DIG	REIN BN FD	REGT CMD	REGT TAC	BN COMM COORD
EMISSION DESIGNATORS	VHF	VHF	VHF	VHF	VHF	VHF	VHF	VHF	VHF
RESTORATION PRIORITIES	05	03	08	01	06	02	07	04	09
ARTY BATTALION	C	C	X	X	W	X	X	X	C
ARTY REGIMENT			C	C	C		C	C	
REIN ARTY BATTALION			X	X		C	X	X	
ARTY BATTALION CMDR	X							A	
BATTERY COMMANDERS	X								
BATTERY 1		X			W				X
BATTERY 2		X			W				X
BATTERY 3		X			W				X
BATTERY 4 (if applicable)		X			W				X
RADAR		W			X				
MDS		X							
SURVEY	X								

2
3
4
5
6
7
8
9
10
11

1   Figure 7-4. Example General Support Reinforcing Artillery Battalion Guard
2   Chart.

ARTILLERY REGIMENTAL COMMUNICATIONS

DIV INTEL
DIV COMMCOORD
RADAR TEL
DIV FSC 1/FSC 2
DIV CMD
DIV TAC

X

REGT CMD
REGT TAC
REGT FD1/FD2
REGT COMMCOORD

ARTY REGT CMD

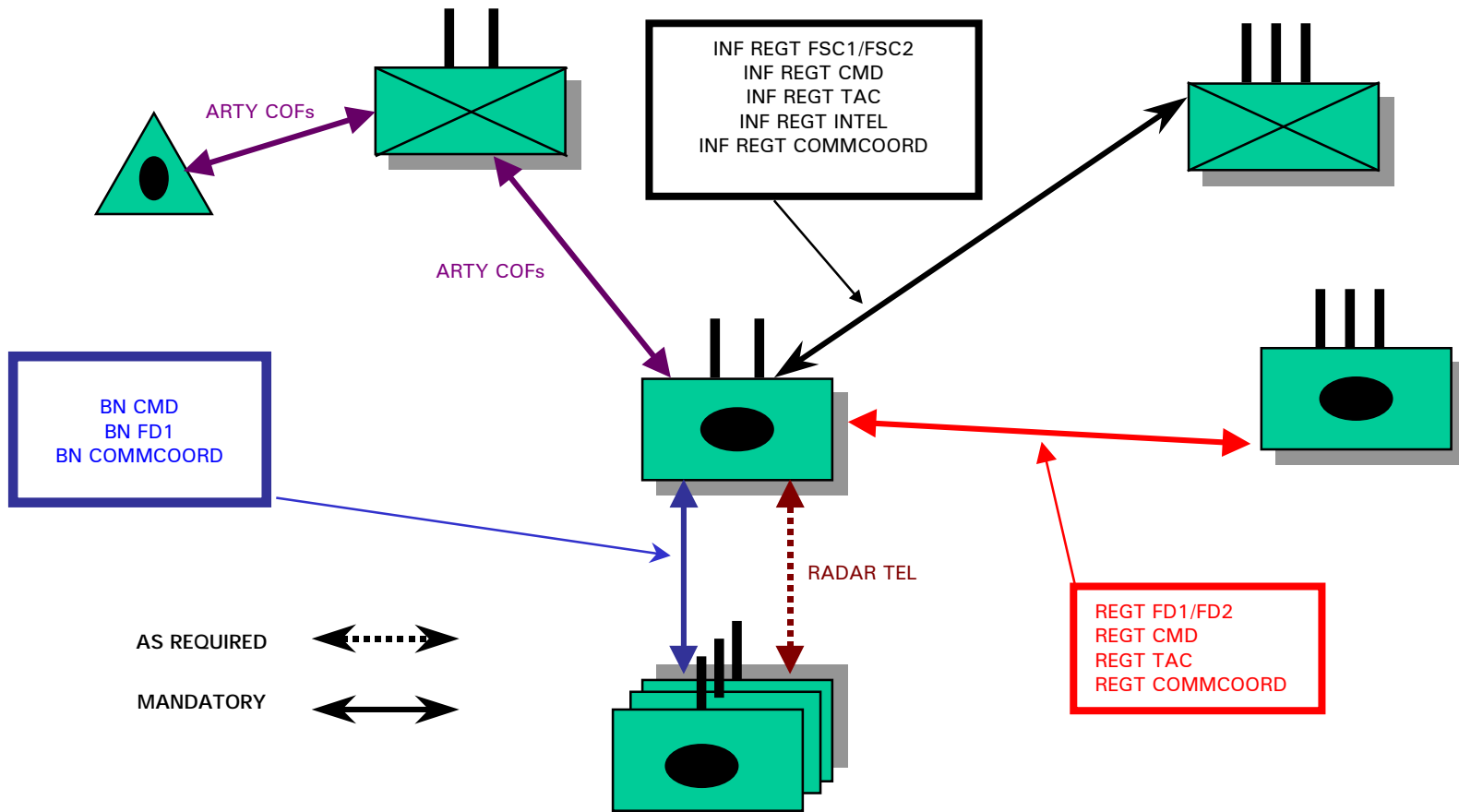DIV ARTY SPOT
RADAR TEL

AS REQUIRED

MANDATORY
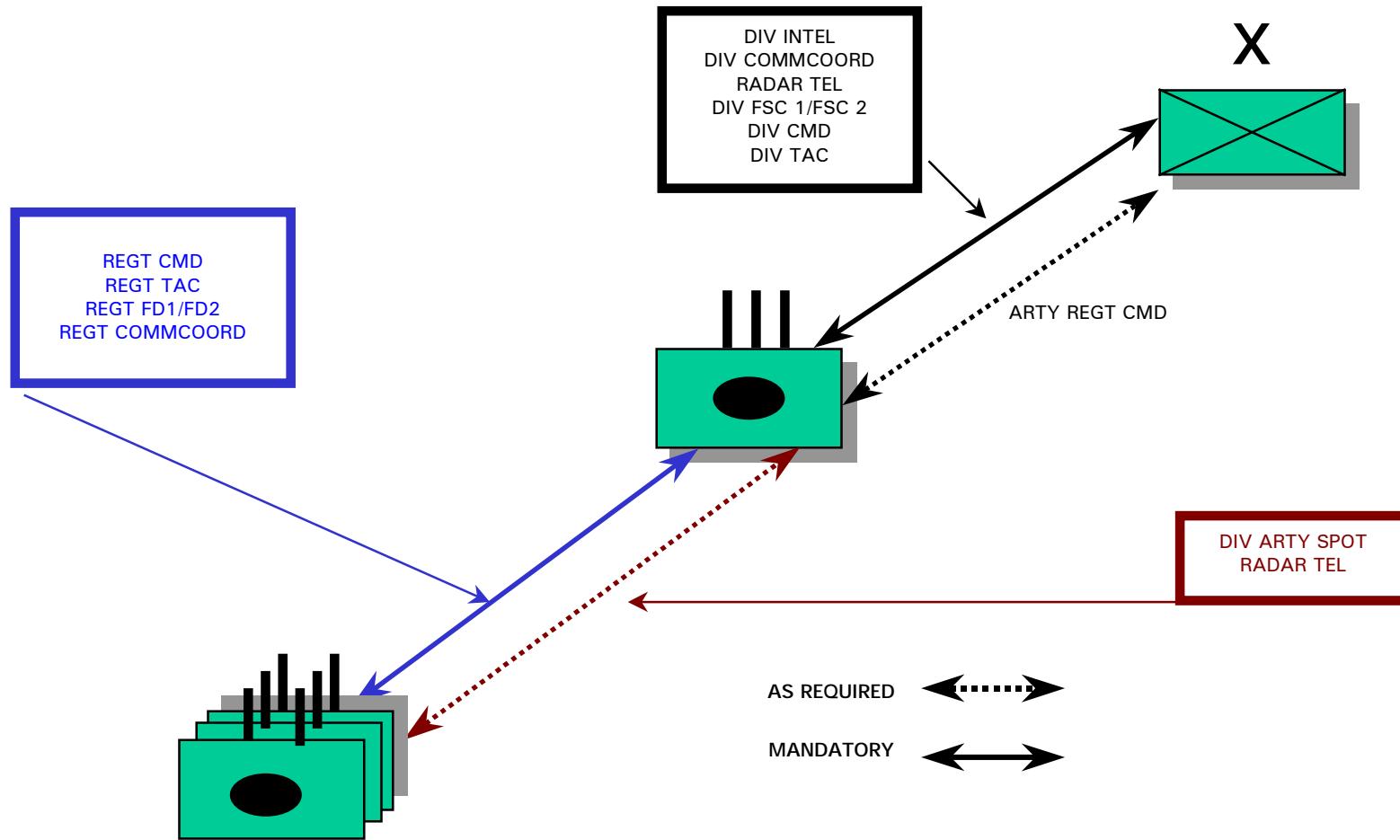
NOTE: There may be a quickfire channel established from any of the artillery units to a fire support asset.

Figure 7-5. Example Artillery Regiment Communication Structure.

1
2

DIRECT SUPPORT ARTILLERY BATTALION

ARTY COFs

INF REGT FSC1/FSC2
INF REGT CMD
INF REGT TAC
INF REGT INTEL
INF REGT COMMCOORD

ARTY COFs

BN CMD
BN FD1
BN COMMCOORD

RADAR TEL

REGT FD1/FD2
REGT CMD
REGT TAC
REGT COMMCOORD

AS REQUIRED

MANDATORY

NOTE: There may be a quickfire channel established from any of the observers to a fire support asset.

Figure 7-6. Example Direct Support Artillery Battalion Communication Structure.

Coordinating Draft 7 - 22

1