TECHNIQUES
and PROCEDURES
FOR

ADVANCED FIELD ARTILLERY TACTICAL DATA SYSTEM (AFATDS)

(UNEDITED DRAFT)

USMC AFATDS NETT 07 FEBRUARY 2001

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CHAPTER ONE

AFATDS EMPLOYMENT

1. **General**. The Marine Air Ground Task Force Command, Control, Communications, Computer and Intelligence (MAGTFC4I) concept replaces the Marine Corps Fire Support System (MCFSS). Like MCFSS, the MAGTFC4I is composed of automated devices which are presently employed at company level maneuver units (DMS/DACT), at the fire support and fire direction centers (IFSAS and TCO) and the air control agencies (IFSAS and CTAPS/TBMCS). Specifically these agencies are the battery, battalion, and regimental fire direction centers (FDCs), the fire support coordination centers (FSCCs) of the battalion through division, the Marine Expeditionary Force (MEF) Force Fires Coordination Center (FFCC), the Direct Air Support Center (DASC), the Tactical Air Control Center (TACC), the Supporting Arms Coordination Center (SACC), and the Rear Area Operations Center (RAOC) of the Combat Service Support Element (CSSE) Command Element. MCFSS allowed these agencies to operate with the first generation digital input/output devices which had entered the inventory.**1** The MAGTFC4I concept allows these stations to transition to more advanced systems with their individual applications running on a Common Operating Environment (COE) enhancing interoperability. The hub of this concept is the Advanced Field Artillery Tactical Data System (AFATDS), which will replace the Initial Fire Support Automated System (IFSAS) and eventually (A99) replace the Battery Computer System (BCS) and the Multiple Launched Rocket System (MLRS) Fire Direction System (FDS). AFATDS is designed to interoperate with all other MAGTFC4I systems. This interoperability includes all legacy devices, (IFSAS, BCS, DMS) as well as the processing and passing of data between the Tactical Combat Operations system (TCO) for the friendly and enemy Situational Awareness (SA) picture, the CTAPS/TBMCS at the MAW, for passing of Air Support Requests (ASRs) and the reception of the Air Tasking Order (ATO)and other air messages.

2. AFATDS development

A. **Background**. AFATDS was originally developed as one of five systems that compose the Army Tactical Command and Control System (ATCCS), now called Army Battlefield Command and Control System (ABCS). The other four systems control air defense, intelligence, combat service support and maneuver. The Marine Corps seeing the capabilities and advantages of AFATDS, began jointly developing the system with the Army for inclusion in the MAGTFC4I concept, providing tactical fire direction, fire support coordination, fire support planning and execution.

B. **Incremental development.** AFATDS software is to be developed and delivered in three software versions. The USMC testbed is currently using version two (A98), with version three (A99) projected in FY 2001. In addition, package 11 software for TACFIRE type devices is projected to be fielded concurrently with A98 software making all MAGTFC4I devices capable of JVMF protocol (and compatible with AFATDS). With the fielding of A99 all IFSAS/TACFIRE (BCS,FDS) devices will be replaced by AFATDS. At this point all artillery technical fire direction for cannon and rocket systems will be computed by AFATDS.

1MarCorSysCom, "Concept of Employment (COE) Marine Corps Fire Support System (MCFSS)" dtd 17 Aug 92

C. **Software Premise.** AFATDS software is a fire support tool. The computer is provided with detailed guidances derived from the staff planning process and the decide-detect-deliver-assess targeting methodology. This guidance provides the computer with the "rules" that it uses during the processing of fire support missions. It is important to realize that the computer possesses no intelligence and only implements the guidance provided. The computer does not make decisions. Instead it allows the commander and staff to determine the appropriate responses during the period of staff planning. These decisions arrived at in planning are executed very rapidly by the computer during the hectic periods of intense activity that characterize modern maneuver warfighting. Failure to provide adequate pre-planned guidance causes the system to fail.

3. **AFATDS SYSTEM**. The AFATDS system will be fielded to the Marine Corps in two different configurations. These configurations are the Mobile kit and the Transit kit. Below the configuration descriptions, are preliminary SL-3 lists contained in the Users Logistics Support Summary (ULSS).

A. The Mobile kit is the CCU2, operational transit case, all peripheral devices and all cables and equipment to configure, connect and ground the OPFAC. This kit is designed to the hub of a multi-workstation OPFAC. Every unit fielding the mobile kit will receive either a 20" flat panel display or a EPSON 7200 projector. This distribution will be echelon dependant.

B. The Transit kit is the CCU2, operational transit case and all cables to configure, connect and ground the OPFAC. This kit is designed to for use as a slave station to the master in a multi-workstation OPFAC, or a smaller version of the Mobile kit for degraded operations.

CCU-2 Mobile Kit, AN/GYK-47 (V) 6

NO.	ITEM	PART NO.	OEM/ SOURCE	QTY
1	V2 CCU-2/LLP/Hub Operational Transit Case	99-2757054-60	GD	1
2	V1 8 Port Switch 10/100 Auto Sensing Switch	02-2757283-1	GD	1
3	V2 Power Converter	28-2773327-1	GD	1
4	Printer, HP-6L LLP	11-2759912-8	GD	1
5	V2 CCU-2 w/512 MB RAM	02-2771236-4	GD	1
6	RHDD 18.2 GB, Ultra/wide	02-2773286-1	GD	2
7	SP-TCIM	56045	LITTON	2
8	V1 Trackball	02-2771232-1	GD	1
9	Transit Case Drivers/Media Storage	99-2757054-12	GD	1
10	V2 5' DC/DC Vehicle Power Adapter Cable	09-2757123-158	GD	1
11	Dual SINCGARS Cable, 5 ft	56057	LITTON	2
12	SINCGARS Extension Cable, 15 ft	A3272907-001	TYAD	4
13	SINCGARS/EPLRS Cable, 5 ft	56064	LITTON	1

NO.	ITEM	PART NO.	OEM/ SOURCE	QTY
14	EPLRS Extension Cable, 15 ft	A327272906-001	TYAD	1
15	SINCGARS/Wireline Adapter, FSK, 5 ft	56063	LITTON	1
16	Grounding Kit (Single Rod)	5975-00-878-3791	Supply System	1
17	Transit Case, CCU-2	99-2757054-49	GD	1
18	V1 20’ RJ-45 Shielded Twisted Pair Crossover Cable	09-2757122-101	GD	1
19	V1 20’ RJ-45 Shielded Twisted Pair Cable	09-2757122-100	GD	1
20	Internal Grounding Kit (All Cables)	N/A	GD	1
20a	CCU2, 6 ft	09-277160-2	GD	1
20b	Converter, 10 ft	09-277160-3	GD	1
20c	HMMWV, 10 ft	09-277160-4	GD	1
20d	8 Port Switch, 5 ft	09-277160-5	GD	1
20e	Lightweight Laser Printer, 6 ft	09-277160-6	GD	1
20f	CCU-2/CFPD, 25 ft	09-277160-1	GD	1
20g	Grounding Buss to Grounding Rod, 25 ft	09-277160-7	GD	1
21	V2 10’ Vehicle to Converter DC Power Cable	09-2757123-201	GD	1
22	V2 10’ UPS Input-115VAC w/NEMA Plug	09-2757123-129	GD	1
23	V2 10’ Power Strip-Locking	09-2757123-4	GD	1

CCU-2 Transit Kit, AN/GYK-47 (V) 7

NO.	ITEM	PART NO.	OEM/ SOURCE	QTY
1	V2 CCU-2 Operational Transit Case	99-2757054-61	GD	1
2	V2 CCU-2 w/512 MB RAM	02-2771236-4	GD	1
3	RHDD 18.2 GB, Ultra/wide	02-2773286-1	GD	2
4	SP-TCIM	56045	LITTON	2
5	V1 Trackball	02-2771232-1	GD	1
6	Transit Case Drivers/Media Storage	99-2757054-12	GD	1
7	V2 5' DC/DC Vehicle Power Adapter Cable	09-2757123-158	GD	1
8	Dual SINCGARS Cable, 5 ft	56067	LITTON	2
9	SINCGARS Extension Cable, 15 ft	A3272907-001	TYAD	4
10	SINCGARS/EPLRS Cable, 5 ft	56064	LITTON	1
11	EPLRS Extension Cable, 15 ft	A3272906-001	TYAD	1
12	SINCGARS/Wireline Adapter, FSK, 5 ft	56063	LITTON	1
13	Grounding Kit (Single Rod)	5975-00-878-3791	Supply System	1
14	V1 20’ RJ-45 Shielded Twisted Pair Crossover Cable	09-2757122-101	GD	1
15	V1 20’ RJ-45 Shielded Twisted Pair Cable	09-2757122-100	GD	1
16	Grounding Cable, 25 ft	09-2777160-1	GD	1

Flat Panel Display

NO.	ITEM	PART NO.	OEM/ SOURCE	QTY
1	20” Flat Panel Display	02-2757256-1	GD	1
2	V2 25’ Video Graphics Cable (13W3/15 Pin HD)	09-2757123-117	GD	1
3	Flat Panel Case (V2 20” CFPD Transit Case)	99-2757054-36	GD	1
4	Keyboard Extension Cable, 25 ft	09-2757123-136	GD	1
5	V2 25’ Equipment Power Cable - Standard	09-2757123-87	GD	1

Media Projector

NO.	ITEM	PART NO.	OEM/ SOURCE	QTY
1	V1 HRLSD (EPSON PowerLite 7200)	02-2771206-2	GD	1
2	V1 HRLSD 13W3-VGA Video Cable	09-2757122-85	GD	1
3	V1 HRLSD (PowerLite 7200/7300) Hardshell Carrying Case	99-2771207-2	GD	1
4	25 ft 15-15 Pin Video Cable	09-2757123-152	GD	1
5	25 ft AC Equipment Power Cable	09-2757122-104	GD	1

CHAPTER TWO

FIRE SUPPORT COMMUNICATIONS

1. **General**. The ability of fire support coordination, fire direction and air direction centers to perform their missions depends on reliable communications. Fire support, air, NSFS and artillery communication nets provide voice and data communications over VHF, HF, UHF, wire, LAN and multi-channel equipment. Voice and data transmissions are not compatible on the same net unless the voice operators are well versed in this procedure. Limit voice communications on a data net to initially establishing and re-establishing communications, and to degraded operations. The fire support communication net structure optimizes the capabilities of available digital data devices while maintaining a voice capability. The depicted communication architecture is therefore different from the existing voice-only communications architecture. The function and names of some nets differs significantly from existing doctrine.

As mentioned above, digital network structure differs greatly from voice structure. In addition, AFATDS functionality supports the concept of a universal observer sending Fire Requests (FRs) to an FSCC, where command and support relations and commander's Guidance determine not only the munition and volume of fire, but the FS asset to best attack the target. This poses a twofold problem. First, the universal observer concept has not yet been adopted by the Marine Corps, i.e. mortar FOs, Arty. FO, FACs and naval gunfire spot teams currently have their own networks for calling back to their assigned FS assets. Secondly, some FS assets namely NSFS, mortars and air do not have digital devices, making it impossible to send an Order To Fire (OTF) or Fire Order (FO) to their CP or firing unit. The following communications architecture represents the current doctrinal networks with suggestions for implementing the universal observer to FSCC concept.

2. **Data Communication Nets**

A. **MEF Force Fires Coordination (MFFC) Net**

(1) **Purpose.** The MFFC net provides a means for overall coordination with all major command elements of a non-amphibious operation.

(2) **Composition**.
MEF Force Fires Coordination Center (Net control).
Division FSCC(s).
Rear Area Operations Center (RAOC).
Adjacent units.
Force Artillery FDC (14MR).

B. **Division Fire Support Coordination (DFSC) Net**

(1) **Purpose.** The DFSC net provides a division level data net for fire support coordination and planning. The net provides a means to exercise command and control data and for the dissemination of tactical information and reports for all agencies of the division FSCC, including air and naval surface fire support. Data communications between the division FSCC and the battalion FSCCs is available by setting up an indirect route (relay at IFSAS) via the regimental FSCC if required.

(2) **Composition**.
Division FSCC (Net control)
Artillery Regimental FDC
Regimental FSCCs
Direct Air Support Center (DASC)
Target Processing Center (TPC) by indirect communications through the Regimental FDC.

C. **Tactical Air Request/Helicopter Request (TAR/HR) Net**

(1) **Purpose**. The TAR/HR net provides the MAGTF a means to request immediate air. This net is currently a mixture of voice and data, due to the fact that neither the observer/controllers nor pilots have a digital device. It will someday transition to a pure data net, and serve as the primary means to transmit a Joint Tactical Air Support Request/Air Support Request (JTASR/ASR) to the DASC from the FSCC and transmit air mission data back to the observer/controller. Until the entire air request link is truly digital, the Tactical Air Direction (TAD) net will be used for voice communications as there is still no digital link from the observer/controller and DASC to the aircraft.

(2) **Composition**.
Tactical Air Control Center (TACC).
Direct Air Support Center (DASC) (Net control).
FSCCs
Tactical Air Control Parties (TACPs)
Forward Air Controllers (FACs)

D. **Artillery Regiment Fire Direction (RFD) Net**

(1) **Purpose.** The RFD net is the tactical fire direction data net used by the artillery regiment to transmit orders, fire missions, tactical information, fire planning and meteorological data to its battalions. The battalions use this net to communicate with their reinforcing battalions when a separate battalion FD net is not established, and to provide reports in data formats. The net also provides the principal link between the artillery regiment and its battalions for collecting, exchanging, and disseminating combat information and intelligence.

(2) **Composition.**
Artillery Regiment FDC (Net control)

Artillery Battalion FDCs
TPC via indirect communications through the regimental FDC for the Bn. FDCs.

E. **Regiment Fire Support Coordination (RFSC) Net**

(1) **Purpose.** The RFSC net is the data network providing fire support and coordination for the infantry regiment. The net provides a means of exchanging tactical information between the regimental and battalion FSCCs and the supporting artillery battalion FDC and when applicable it's re-enforcing artillery Bn. Message traffic related to fire planning is sent over this net.

(2) **Composition.**
Regimental FSCC (Net control)
DS Artillery Battalion
Battalion FSCCs
TPC via indirect communications.

F. **NSFS Ground Spot Net (REGT)**

(1) **Purpose.** The NSFS ground spot net provides a digital link from the FSCC to the ship. The NSFS ground spot is currently a voice net, conveying fire requests and adjusts from the spot teams to their DS ship. The Bn. NGLO currently monitors this net to provide clearance or communications relay, if necessary. When used as a digital net, and until the NSFS ships have a digital device, a second NSFS spot net could be setup for voice communications to the ship.

(2) **Composition.**
Bn. NGLO (Net control)
NSFS spot teams
DS ship
GS ship (As required)

G. **Mortar Conduct of Fire (COF) Net**

(1) **Purpose.** The mortar COF net provides a digital link from the observer to the Bn. FSCC to the mortar platoon's Mortar Ballistic Computer (MBC). Currently the MBC is not employed, creating a need for a second mortar net which would be a voice net from the FSCC to the mortar platoon.

(2) **Composition.**
Mortar platoon (MBC)
Mortar FOs
Bn. FSCC

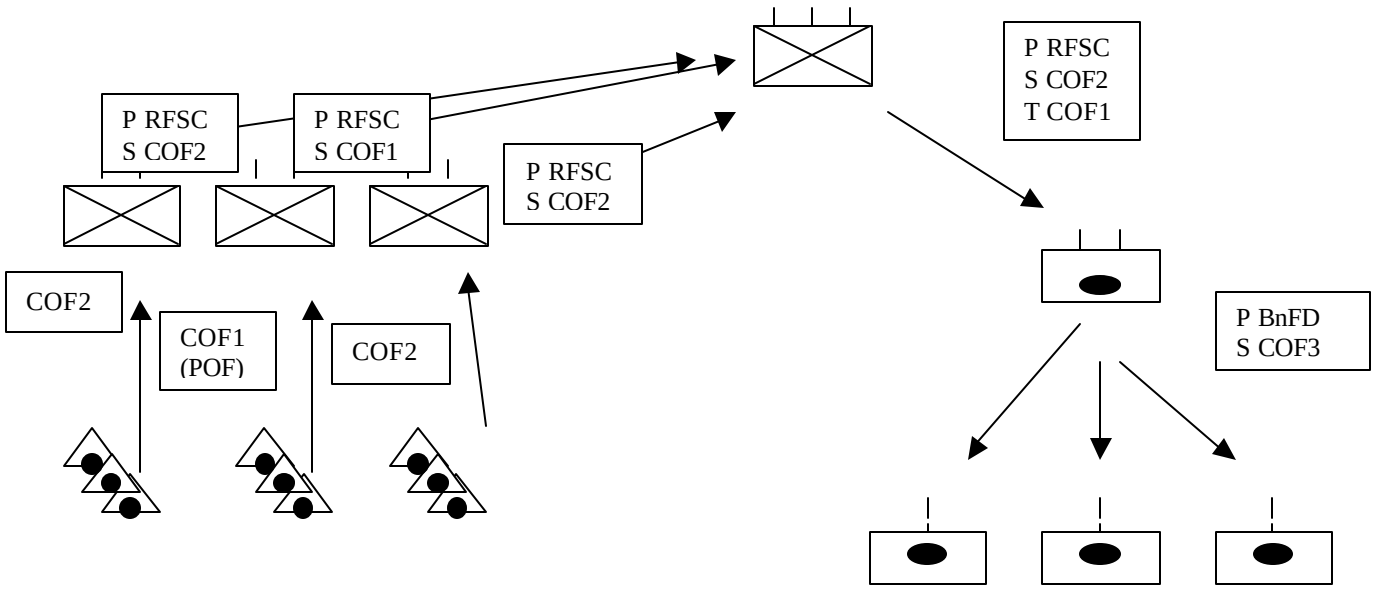
H. **Artillery Battalion Conduct Of Fire 1, 2, 3 and 4**

(1) **Purpose.** The Battalion COF 1/2/3/4 nets are the primary means for artillery forward observers to request and adjust fires, and to provide tactical information to higher headquarters. In days gone by, this net was the communications path for the artillery FOs

sending voice missions to their Battery or Battalion FDCs with the FSCCs monitoring and the Arty Bn. Controlling the net. In automated times These data COF nets serve as a vehicle for the company arty FOs to request fires to their Bn. FSCC, in effect leaving the artillery Bn., the owner of the nets, out of the request loop, although still maintaining net control. One COF net is normally provided to each supported maneuver battalion, although in the digital world this many nets are no longer necessary, and more than one Battalion may be consolidated into one COF. The artillery Battalion FDC receives the OTF from the Regimental FSCC and may also establish an indirect route to the observers for subsequent adjust missions on this net. The COF networks not being utilized, may be established as a secondary link from the Battalion FDC to the batteries. Batteries would receive the FO from the Battalion FDC, and may also establish an indirect route to the observers for subsequent adjust missions on this net. The COF nets must be uncluttered and responsive.

(2) **Composition.**
Battalion FSCCs
Regimental FSCC
Artillery Fos
Arty. Bn. FDC (Net Control)
Btry. FDCs (AFATDS equipped)

Below is a depiction of a possible communications architecture for use of COF networks with AFATDS equipped units.



I. **Battalion Fire Direction (BN FD) Net**

(1) **Purpose.** The data BN FD net is the fire direction net for passing Fire Orders (FOs) from the Bn. FDC to it's firing batteries.

(2) **Composition.**

DS Artillery Battalion FDC (Net control)
R Battalion FDC
Radars in direct support to the artillery battalion.
MDS in direct support to the artillery Battalion.
Firing batteries of the DS Bn.

J. **Meteorological Data/Radar Telling (Met/Rdr Tel) Net**

(1) **Purpose.** The Met/Rdr Tel net links the Target Processing Center (TPC), Meteorological Data Systems (MDS), and the Firefinder radars. The TPC is equipped with a computer and functions as a filter for target acquisition and meteorological data entering the system. The TPC performs the targeting functions associated with counterfire planning. Because of the limitations of the MDS and Firefinder radar, this net is operated at data rate 1200 bps.

(2) **Composition.**

TPC (Net control)
Q-36 Radar sections
Met sections
UAV observer equipped with DCT (when controlled by the arty. Regiment)

K. **TPC Net**

(1) **Purpose.** The TPC net links the Target Processing Center (TPC) to the collocated regimental FDC. This net provides the TPC with its link to other stations by indirect routing available through the regimental FDC device.

(2) **Composition.**

Regimental FDC (Net control)
Target Processing Center
Division FSCC via indirect communication through regimental FDC.
Regimental FSCCs via indirect communications through division FSCC.
Battalion FSCCs via indirect communications through the regimental FSCCs.
Battalion FDCs via indirect communications (if required)

L. **Data communications guard chart.**

Table 2-1 provides the net assignment of destination units and the communications parameters for the operation of each net.

TABLE 2-1, DATA COMMUNICATIONS GUARD CHART

C=net control X=guard net A=as required I=indirect	TAR/ HR	MFF C	DFS C	RF D	RFSC	NSFS SPOT	MORT AR COF	BN FD	CO F	TPC	ME T/ RD R TEL
PROTOCOL LAN = L VMF = V TACFIRE = T NATO = N 188-220A = J	V	L	V	V	V	T	T	**J Pkg 11 dep**	T	L	T
KEYTIME	0.7	N/A	0.7	0.7	0.7	0.7	0.7	0.7	0.7	N/A	0.7
MEDIA 2 WIRE = 1 4 WIRE = 2 RADIO = 3 LAN = 4	3	4	3	3	3	3	3	3	3	4	3
DATA ENCODING FSK = 1 NRZ = 2 CDP = 3	2	N/A	2	2	2	1	1	1	1	N/A	1
DATA RATE 600 = 1200 = 2400 = 4800 = 16k = 32k =	4.8k	N/A	4.8k	4.8	4.8k	1200	1200	4.8k	120 0	N/A	1200
CARRIER DROPOUT TIME	.5	N/A	.5	.5	.5	N/A	N/A	N/A	N/A	N/A	N/A
COMSEC SECURE = Y UNSECURE = N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/A	Y
ERROR CORRECTION	FEC/ TDC	N/A	FEC/ TDC	FEC TD C	FEC/ TDC	EDC	EDC	EDC	ED C	N/A	EDC
MFFCC	I	C								I	
TACC	C	X									
DIV FSCC	X	X	C							I	
DASC	X		X								
RAOC		X							I	I	
REGT FSCC	X		X		C			X		I	

BN FSCC	X				X	C	C	X	X	I	
REGT FDC			X	C						C	
TPC		I	I	I	I			I		X	C
DS BN FDC				X	X			AC	C	I	
GS/GSR BN FDC				X				A		I	
R BN				X				A		I	
BTRYS								X	X	I	
FO						X	X		X		
Q-36								A			X
MDS								A			X
UAV FO									X		A
MORTAR PLT							X				
DS SHIP						X					

3. **COMMUNICATIONS PARAMETERS.**

A. **Requirements.** Communication parameters provide all stations with the necessary data to build and operate the nets. The following requirements must be considered when selecting the parameters.
Refer to the appropriate equipment technical manuals for specific equipment requirements.

B. **AFATDS VMF NETS.**

(1) **General.** VMF protocol nets are the principle nets used to communicate between AFATDS OPFACS. Only AFATDS computers may be assigned to these nets since no other data communications devices are able to operate this protocol.

(2) **DATA ENCODING.** Data encoding is the method the modem uses to convert 1's and 0's to an electronic signal, transmitting the data to the other computer. The preferred method of data encoding for VMF radios nets is Non-Return to Zero (NRZ). This method is more reliable and allows faster data rates. Frequency Shift Keying (FSK) can also be used but supports only 600 or 1200 bps data rates. Wire lines use conditional di-phase (CDP).

(3) **NET ACCESS DELAY.** Net access delay provides the means of prioritizing

a stations ability to access the communications net. The process used by the AFATDS computer depends on one of five methods assigned.

(a) **ADAPTIVE METHOD.** The adaptive method uses the stations assigned station ranking (entered on the VMF INFORMATION WINDOW) and the priority of the message to determine the net wait time prior to access. If the last message transmitted is low priority and no other station possesses a higher priority message, the station with the lowest ranking will access the net. For the next transmission, the number of stations on the net is added to the ranking to determine the stations next net access wait time. This slips the second ranked station to first place and moves the first ranked station to the end of the list allowing each station equal access. If the priority of the net (established by the last transmission) is high, increasing the access time of each station with a message of lesser priority further modifies this process by multiples of the number of stations on the net. ***This method is the recommended method of prioritizing an AFATDS net.***

(b) **RANDOM METHOD.** The random method causes each station to randomly assign an access of 0 to 7 for each net access period (period between message busy conditions on the net). This method gives each station equal access to the net without regard to message priority. There is also the possibility that stations may "step on" each other's messages if two stations randomly select the same access value.

(c) **HYBRID METHOD.** This method modifies the random method by increasing the access range to 0 to 24. This access range is divided into subsets based on the priority of the next message a station will send. Net access is then randomly assigned based on these subsets.

(d) **PRIORITIZED METHOD.** This method assigns a rigid priority to the net that is only affected by the priority of the highest prioritized message the station is waiting to transmit. In this method the station ranking (entered on the VMF INFORMATION WINDOW) is modified by the priority of the message. As a rule the stations generally access the net in the order of station ranking.

Note: *VMF nets will produce alerts to the OPFACs if the number of stations is not accurately defined when using ADAPTIVE or prioritized access methods. The number of stations entered must accurately reflect the true number of stations on the net and the prescribed station rank. The net control station is responsible for providing this data in the subscriber table.*

(e) **CONSTANT METHOD.** The constant method uses the station's unique NET ACCESS DELAY CONSTANT entered in the VMF INFORMATION WINDOW to cause a station to be assigned this delay time. This method causes stations to access the net based solely on the DELAY CONSTANT without regard to previous net access or message priority. This method is similar to that used in MCFSS devices.

(4) **DATA RATE**. The VMF data rates supported using SINCGARS radios are 1200, 2400, 4800 and 16000 bps. When using wire lines this can be increased to 32000 bps.

(5) **CARRIER DROPOUT TIME**. This entry enables a wait period to allow the radio frequency level to drop after transmission and before the next attempt. The value set must be the same at all stations.

(6) **ERROR CORRECTION.** Error correction methods are provided as a check for the proper reception of a message. All devices on the net are AFATDS OPFACs, therefore FEC_TDC is used.

C. **Mil Standard 188-220 Protocol**. AFATDS 98 software introduces 188-220A, which is the first implementation of Joint VMF. This protocol may be used for communications between AFATDS OPFACS, and AFATDS OPFACS and package 11 devices. This protocol is expected to evolve into the primary protocol for all digital devices.

(1) **General**. The primary difference between VMF and 188-220 is that 188-220 is built using a new IP network, and TCIM 188-220 is selected vice Ethernet. The 188-220A protocol requires the use of hostnames and IP addresses in conjunction with a physical addresses when transmitting over a 188-220 network.

(2) **IP Network Information**. With the exception of the TCIM 188-220A selection in the adapter field, all information is the same as entering a LAN network. ***NOTE: Subnets (network IP addresses),subnet masks and hostnames must all be different from the internal LAN, external LAN and any other 188-220 nets.***

a) (3) **IP 188 220 Information**. Similar to the Net Channel Settings and VMF Information windows. The difference is the addition of Deterministic Adaptive Priority Net Access Delay (DAP) to Media access control parameters and the deletion of the constant method from the same.
Device: The means over which transmissions will be sent. Available selections are 2 Wire, 4 Wire, Analog Radio, KY 57 and SINCGARS.

b) Data Encoding: The selections available are dependent upon the device selected. Available selections are: CDP, NRZ, FSK 188C and FSK 4202A.

c) Data Rate: The rate at which data will be sent. Selections are dependent upon previous selection. Available selections are: 75, 150, 300, 600, 1200, 2400, 4800, 9600, 16000, 32000, 1200N, 2400N, 4800N and 9600N.

d) Local Transmission Load: Is set to best define the amount of traffic on the network. Available selections are: Normal, Heavy and Light.

e) COMSEC Mode: Allows entry of Plain Text, Cipher Mode or Time Delay.

f) Hop Mode: Allows entry of whether the network will be in single channel or frequency hopping mode.

g) MEDIA ACCESS CONTROL PARAMETERS:
   (1) Method: Alows selection of DAP, Adaptive, Hybrid, Prioritized and Random.
   (2) Stations: Number of stations on the network.
   (3) Frequency of Access Ranking: Relative Priority on the network.

h) More data. The IP TUNING PARAMETERS window is displayed. By

selecting the Customize radio button, the entry fields of the following parameters will be sensitized.

1) Amplitude: Allows the operator to select the decibel level for analog messages.

2) Forward Error Correction: Allows operator selection of the type forward error correction used for data messages.

3) Net Usage: Allows the operator to specify data only or voice and data, depicting the type traffic on the network.

4) Net Sensing: Allows operator selection of normal or noisy, defining the quality of the net.

5) PHASING: The designated time between the EPRE and data transmission. For the sending of an alternating sequence of 1s and 0s from the DTE (Digital Terminal Equipment or TCIM) to the DCE (Digital Communications Equipment or radio), for frame synchronization.

6) Busy Detect(sec): Allows entry of the time interval depicting the start of a transmission from a station on the network, to all other stations detecting the net busy.

7) EPRE(sec): Equipment Preamble Time, designated time for radio power-up and transmission of comsec data. Time from keying the radio to the time data is ready to be exchanged with the TCIM.

8) ELAG(sec): Designates the time interval from the last bit of data leaving the transmitting TCIM to the reception of the last bit of data at the receiving TCIM.

9) Turn(sec): Designates the time interval for both the transmitter and receiver to be ready for the next operation after ELAG.

10) TOL(sec): Designates the time interval allowed for computing an acknowledgment to a message.

11) DTEPROC(sec): Designates the time interval for the receiving station to process data that does not require an acknowledgment, before the NAD cycle resumes.

12) DTEACK(sec): Designates the time interval allowed for a receiving station to process data and transmit an acknowledgment.

D. **TACFIRE NETS**. TACFIRE nets are required when all FOs, battery FDCs, radars and meteorological sections are still equipped with version 10 or earlier TACFIRE devices, originally acquired for the Marine Corps Fire Support System, (MCFSS) cannot communicate using mil std 188-220, unless they have package 11 software loaded.

(1) **NET ACCESS DELAY.** Net sensing and wait times establish the priority of stations for access to the data net. The higher echelons require higher priority (lower delay times) with the net control station possessing the highest. Priority is further defined by the station's importance in the tactical environment. This is called NET ACCESS in IFSAS and DELAY in BCS and FDS.

(a) All devices except IFSAS LCU use one delay setting for all priority messages.

(b) **AFATDS and IFSAS settings.** AFATDS and IFSAS use 4 settings corresponding to first and subsequent transmission attempts for messages of priority 1 through 4 or 5 through 8. This allows the builder of the net to assign a longer delay to lower priority messages and to further delay subsequent (and less likely to succeed) transmissions of the same message.

(c) **Establishing correct settings.** To establish the correct settings, assign the net access for priority 1-4 messages (for all messages in devices other than the IFSAS LCU) based on the stations echelon and tactical mission.

1) Net control has the highest priority.

2) Stations of the same organizational level are ordered with the next higher number.

3) The next lower organization is assigned the next higher number.

4) For example, if battalion FDC is the net control station on a COF net, it is assigned a priority of 1. The battalion FSCC on the net is assigned 2 and the battery FDC, 3.

5) For AFATDS and IFSAS LCUs, increase the value for subsequent transmissions by at least 1. Make the first transmission of priority 5-8 messages equal to or 1 greater than priority 1-4 subsequent transmissions. Increase the value for subsequent transmissions by at least 1.

(2) **DATA RATE**. All data communications devices are capable of transmitting data at specified rates measured in bits per second (BPS). All MCFSS devices are capable of 600 or 1200 BPS rates. The values are proportional, e.g., 1200 BPS is twice as fast as 600 BPS. DMS and LCU are capable of other rates (1200, 2400, 4800, 8000 {DMS only} and 16000 BPS), which are dependent upon the use of SINCGARS radios. The communications planner at the net control station (NCS) must be aware of the capabilities of the different devices and ensure that rates selected are compatible with devices assigned to the nets i.e. AFATDS NRZ 16k and IFSAS digital 16k.

(3) **TONE PAIRS.** MCFSS devices transmit the data signals using a form of tone modulation called audio frequency shift keying (AFSK, commonly called FSK) for the 600 and 1200 BPS rates. The tone pairs used are either 1200/2400 Hz or 1300/2100 Hz. The MDS and Firefinder Radar are capable of 1200/2400 Hz only. Selecting 1200/2400 Hz provides the best communications with SINCGARS radios.

(4) **KEYTIME.** Keytime is the duration, in seconds, of the signal transmitted by the data device to power the radio to transmission level. Keytime is a requirement of the radio and is lengthened by adding additional communications devices (e.g., AN/GRA-39 remotes). In

most computer devices the keytime also sets the duration of the time the device waits for a control message (ACK or NAK) before giving up the attempt as failed. The communication planner must determine the keytime required by the device with the longest keytime on the net and assign that to all devices on the net.

(a) **Starting Keytimes.** The equipment determines starting keytimes. A rough determination rule can be used. Use the entry of 0.7 seconds for a SINCGARS net. Add 0.7 seconds for each additional piece of communications equipment that must be keyed, e.g., attaching an AN/GRA-39 increases the keytime by 0.7.

(b) Assign the highest keytime predicted for any station to all stations on the net.

(5) **HOLD TIME.** The hold time is the amount of time the AFATDS computer will wait for an ACK/NAK message from a TACFIRE device. In all MCFSS devices except the AN/TPQ-36 Firefinder radar the hold time is based on the keytime. This setting applies only to AFATDS and is displayed but cannot be changed by the operator.

E. **Local Area Networks**. AFATDS has the capability of communicating with other AFATDS, CTAPS/TBMCS and TCO via the LAN. At the present AFATDS communicates in a limited manner to CTAPS on the LAN, however, when TBMCS is fielded, a more robust processing capability of ASRs will be available. AFATDS also is capable of transmitting and receiving friendly unit data, enemy unit data and geometries to JMCIS type devices (TCO). AFATDS uses the hostname and IP address to distinguish OPFACS on the LAN. AFATDS further allows for the entry of a subnet mask, which determines message routing. There are also entry fields for the router name and IP address, however, these entries are informational and this data is entered in the secure debug functions of the root menu. This data is required when using the LAN protocol and should be managed by the S-6/G-6 for entry in the destination units and network tables.

(1) **Hostname**. The assigned name by which the host will be known to the other stations on the LAN network. A maximum of 25 alphanumeric characters, cannot start with a number.

(2) **Internet Protocol (IP) address.** The assigned IP address by which the host will be known to the other stations on the LAN network. The IP address consists of four fields, or octets, separated by a decimal. AFATDS external LAN may be any class, however package 11 devices will be limited to class C. In a class C LAN the first three octets designate the subnet address and the last octet designates the station address. For this reason the first three octets must be the same for all stations on the LAN unless a router is being used. A class C LAN is further defined by the first octet's parameters being between 193 and 224.

(3) **Subnet mask**. Informs AFATDS if a destination unit is on the same subnet, or if the message will be routed. The default subnet mask is assigned by AFATDS, however, a subnet mask is assigned by the LAN manager in the communications plan when needed.

(4) **Router Name**. Allows the entry of the router name. This is informational only and in no way effects processing.

(5) **Router IP Address**. Allows the entry of the router IP address. This entry is also informational, however, this information is required and is entered in the Secure Debug functions of the root menu. This information must be re-entered anytime the AFATDS application is exited.

F. **EPLARS Protocol Network**. AFATDS allows the creation of a network utilizing the EPLARS protocol. Currently the EPLARS radio is not capable of being connected directly to the AFATDS' SP-TCIM via the EPLARS cable. To enable the interface, the network must be configured the same as a LAN network and have a router attached. Example, Build a LAN protocol network and attach a catV cable to the external LAN ethernet port. Attach the other end of the catV cable to the router. Connect the router to the EPLARS radio using a catV cable. The receiving AFATDS should be setup exactly the same way. Ensure the hostname, IP address, subnet mask and router address are entered in the IP network. The EPLARS radios will be modified later in 2000, allowing direct interface with the AFATDS and the EPLARS radio.

4. **SINCGARS RADIO SETTINGS AND CABLING.** Table 2-2 provides the appropriate radio cabling and data settings for operation of data nets using SINCGARS radios.

Table 2-2, SINCGARS SETTING

RADIO CABLE CONNECTION	**TACFIRE NET**	**VMF NET**
AFATDS RADIO CABLE FROM SP-TCIM	SINCGARS MOUNTING ADAPTER **AUD/DATA** CONNECTOR	SINCGARS RT **AUD/DATA** CONNECTOR
SINCGARS W-4 CABLE	FROM MOUNTING ADAPTER **AUDIO** CONNECTOR TO RT **AUD/DATA** CONNECTOR	N/A
RADIO DATA SETTINGS	**TACFIRE NET**	**VMF NET**
FUNCTION	SC ON	SC ON
MODE	SC or FH	SC or FH
DATA	TF-if all radios in net are SINCGARS. (FSK) AD-1 if net is mixed SINCGARS and VRC-12 or NATO type radios. (FSK) Match the setting entry for the net in the AFATDS computer. (DIGITAL)	Match the setting entry for the net in the AFATDS computer
*	OFF	OFF
COMSEC	CT	CT
AFATDS COMM NET		

SETTINGS			
PROTOCOL	TACFIRE	VMF	188-220A
MEDIA DEVICE	SINCGARS ICOM	SINCGARS ICOM	SINCGARS
DATA ENCRYPTION	FSK 1200/2400 or NRZ	NRZ	NRZ
DATA RATE	1200 BPS (FSK) 4800/16000 (NRZ)	4800 or 16000	4800 or 16000
KEYTIME	0.7 or higher	0.7 or higher	Determined by software.
CLEAR NET ACCESS	N/A	ADAPTIVE	DAP

5. **DESTINATION UNIT TABLES** (SUBSCRIBER TABLES)**.**

A. **Responsible agencies.** A number of variables affect the writing of the subscriber tables. These include the number of available communications assets (e.g., radios, frequencies and batteries), number and type of devices, task organization and mission. The subscriber tables must be flexible enough to allow changes during the course of operations. The agencies responsible for producing and updating the subscriber tables must be intimately familiar with these requirements. Since no single agency in the MEF is required to communicate with and possess detailed, up to date knowledge of the communications situation on every net, no single station is able to produce the entire subscriber table. Hence, the production and update of the subscriber tables is decentralized. Each net control station is responsible for the subscriber's tables for its nets. These subscriber tables will conform to the standardized procedures listed in this paragraph.

B. **Standard addressing.** Net control stations conform to the system of standard addressing listed in the tables below. The addresses available are listed in the left most column. Each net is provided a column in the table with the net name in the heading. Locating the subscriber in the net column and indexing to the left yields the assigned address for any station. Blank entries for a net indicate an unassigned address available to the communications planner. The following special instructions apply to assigning addresses:

(1) **Special characters** (& * + - # ? .) can not be assigned to fixed format devices or to nets on which fixed format devices must communicate.

(2) **Addresses Q through Z** should be reserved for fixed format relay addresses and not assigned. This limitation applies only to nets that provide communications with fixed format devices.

(3) **MOI addresses**. Assigning MOI addresses for IFSAS results in fire mission

messages being received in an information only mode. Do not assign different MOI addresses to these devices when establishing net setting. MOI addresses must be established for LCU IFSAS subscribers in the subscriber's table. Use the same address as the physical address extracted from the tables below.

C. **Standard addressing on the MEF FFC net, division FSC net and regimental FSC net.** Table 2-3 provides addresses for MEF force fires coordination net and the fire support coordination nets at Division and the infantry regiment. 188-220A addressing is left out, as all stations on the net require a hostname and IP address as well as an address. Also a hostname, subnet mask and subnet address may not be repeated. Therefore these addressing schemes may not be pre-scripted, but will be assigned by the LAN manager.

TABLE 2-3			
ADDRESS: TF/VMF	MFFC NET	DFSC NET	RFSC NET
A/02	MEF FSCC-MAIN		REGT FSCC-MAIN
B/03	1ST DIV FSCC-MAIN		REGT FSCC-FWD
C/04	1ST DIV FSCC-FWD		1ST BN FSCC-MAIN
D/05	2D DIV FSCC-MAIN		1ST BN FSCC-FWD
E/06	2D DIV FSCC-MAIN		2D BN FSCC-MAIN
F/07	2D DIV FSCC-FWD		2D BN FSCC-FWD
G/08	3D DIV FSCC-MAIN		3D BN FSCC-MAIN
H/09	3D DIV-FSCC-FWD		3D BN FSCC-FWD
I/10	MEF FSCC-FWD		ARTY BN FDC-MAIN
J/11	RAOC		ARTY BN FDC-FWD
0/12		DIV FSCC-MAIN	RAOC
1/13		DIV FSCC-FWD	
2/14		DASC-MAIN	
3/15		DASC-FWD	
4/16		1ST INF REGT-MAIN	
5/17		1ST INF REGT-FWD	
6/18		2D INF REGT-MAIN	
7/19		2D INF REGT-FWD	
8/20		3D INF REGT-MAIN	
9/21		3D INF REGT-FWD	
*/22		ARTY REGT FDC-MAIN	

TABLE 2-3			
ADDRESS: TF/VMF	MFFC NET	DFSC NET	RFSC NET
?/23		ARTY REGT FDC-FWD	
+/24		RAOC	
MEF FFC NET: TACFIRE addresses K through Z, 0 through 9 and * ? + . - # & and all VMF addresses greater than 11 are available for assignment.			
DIV FSC NET: TACFIRE addresses A through Z and . - # & and all VMF addresses 02 through 11 and addresses greater than 24 are available for assignment.			
REGT FSC NET: TACFIRE addresses K through Z, 1 through 9 and * ? + . - # & and all VMF addresses greater than 12 are available for assignment.			

D. **Standard addressing on the regimental FD net, TPC net and RADAR/MET net.** Table 2-4 lists the addresses for the regimental fire direction, TPC wire and RADAR/Survey nets. The addresses are laid out in such a fashion as to allow the DFSC net to be combined with the artillery RFD net.

TABLE 2-4			
ADDRESS: TF/VMF	RFD NET	TPC TO REGT FDC NET	RADAR/MET NET
A/02	REGT FDC MAIN	REGT FDC MAIN	
B/03	REGT FDC FWD	REGT FDC FWD	
C/04	1ST BN FDC MAIN		
D/05	1ST BN FDC FWD		
E/06	2D BN FDC-MAIN		
F/07	2D BN FDC-FWD		
G/08	3D BN FDC-MAIN		
H/09	3D BN FDC-FWD		
I/10	4TH BN FDC-MAIN		
J/11	4TH BN FDC-FWD		
K/12	5TH BN FDC-MAIN	TPC-MAIN	TPC-MAIN
L/13	5TH BN FDC-FWD	TPC-FWD	TPC-FWD
M/14	MLRS BN-MAIN		CBR#1

N/15	MLRS BN-FWD		CBR#2
O/16			CBR#3
P/17			CBR#4
1/18			MET#1
2/19			MET#2
3/20			MET#3
4/21			MET#4
+ . - # and & are unassigned TACFIRE addresses for all nets. 22 and above are unassigned VMF addresses for all nets.			

E. **Standard addressing on the battalion COF nets.** Table 2-5 contains the addresses used on the COF nets at the artillery battalion. Four COF nets are provided. COF 1 and 2 may be combined to form a single COF A. COF 3 and 4 may be combined to form a single COF B.

TABLE 2-5

ADDRESS	COF NET-1	COF NET-2	COF NET-3	COF NET-4
A	BN FDC-MAIN	BN FDC-MAIN	BN FDC-MAIN	BN FDC-MAIN
B	BN FDC-FWD	BN FDC-FWD	BN FDC-FWD	BN FDC-FWD
C	1ST BN FSCC-MAIN		3D BN FSCC-MAIN	
D	1ST BN-FSCC-FWD		3D BN FSCC-FWD	
E	1ST COMPANY-FO		1ST COMPANY FO	
F	2D COMPANY-FO		2D COMPANY FO	
G	3D COMPANY-FO		3D COMPANY FO	
H	4TH COMPANY-FO		4TH COMPANY FO	
I	1ST BTRY FDC, 1ST BCS		3D BTRY FDC, 1ST BCS	
J	1ST BTRY FDC, 2D BCS		3D BTRY FDC, 2D BCS	
K		2D BN FSCC-MAIN		4TH BN FSCC-MAIN
L		2D BN FSCC-FWD		4TH BN FSCC-FWD
M		1ST COMPANY-FO		1ST COMPANY-FO
N		2D COMPANY-FO		2D COMPANY-FO
O		3D COMPANY-FO		3D COMPANY-FO
P		4TH COMPANY-FO		4TH COMPANY-FO
0		2D BTRY FDC, 1ST		4TH BTRY FDC, 1ST BCS

		BCS		
1		2D BTRY FDC, 2D BCS		4TH BTRY FDC, 2D BCS
TACFIRE addresses Q through Z, 2 through 9 and & * ? + . - # are unassigned				

F. **TACFIRE ALIASES (Logical names).** TACFIRE ALIASES, also called logical names, must be identical in transmitting and receiving variable format devices. These aliases are governed by a series of rules. The procedures provided below ensure that these rules are applied. The procedure listed here must be adhered to since these conventions are used in the USMC standard master unit list (see APPENDIX B).

(1) **Fire Units.** Fire units' names will be translated into the following sub-fields:

[1] section
[2] platoon
[3] battery or company
[4] battalion
[5] regiment or brigade

(2) **FSCCs.** The FSCCs names are similar to the military unit name.

Battalion FSCC MAIN
[1] letter F
[2] letter S
[3] letter C
[4] battalion
[5] regiment or brigade

Battalion FSCC FORWARD
[1] letter F
[2] letter W
[3] letter D
[4] battalion
[5] regiment tag

Regimental FSCC MAIN
[1] letter F
[2] letter S
[3] letter C
[4] Regiment
[5] MR

Regimental FSCC FORWARD
[1] letter F
[2] letter W
[3] letter D
[4] Regiment
[5] MR

Division FSCC MAIN

[1] letter F
[2] letter S
[3] letter C
[4] Division
[5] MD

Division FSCC FORWARD

[1] letter F
[2] letter W
[3] letter D
[4] Division
[5] MD

(3) **MAGTF FSCCs**

MEF FFCC MAIN

[1] letter F
[2] letter F
[3] letter C
[4] MEF numerical designation
[5] MF

MEF FFCC FORWARD

[1] letter F
[2] letter W
[3] letter D
[4] MEF numerical designation
[5] MF

MEF FORWARD FFCC MAIN

[1] letter F
[2] letter F
[3] letter C
[4] MEF numerical designation
[5] FF

MEF FORWARD FSCC FORWARD

[1] letter F
[2] letter W
[3] letter D
[4] MEF numerical designation
[5] FF

MEU FFCC MAIN

[1] letter F
[2] letter F
[3] letter C
[4] MEU numerical designation
[5] MU

MEU FFCC FORWARD

[1] letter F
[2] letter W
[3] letter D
[4] MEU numerical designation
[5] MEU

(4) **FOs.** The FOs names indicate the supported company and FO number.

[1] letter F
[2] letter O
[3] company
[4] FO number[2]
[5] blank

FOs assigned to separate battalions
[1] letter F
[2] letter O
[3] company
[4] FO number
[5] LAI/TNK/AAV

(5) **FDCs.** The FDCs names are similar to the military unit name.

Battery FDC
[1] blank
[2] blank[3]
[3] battery
[4] battalion
[5] regiment or brigade

Battalion FDC
[1] F[4]
[2] D
[3] C
[4] battalion
[5] regiment or brigade

Regimental FDC
[1] F[5]
[2] D

---

1 [2]The FO number must appear in the fourth sub-field. FO numbers are assigned using the supported regiment number (9 for Ninth Marines) followed by a sequential numbering for the second digit. FO93 is the third FO in the Ninth Marines. If additional numbers are required, they are assigned from numbers of units not organic or operating with the division.

2 [3]The number 2 indicates second BCS.

3 [4]Letters F/W/D/ in the first three sub-fields and battalion number in the fourth subfield, and the regimental tag in the fifth subfield, indicate the jump FDC.

4 [5]Letters F/W/D/ in the first three sub-fields, regimental designator in the fourth subfield and MR in the fifth, to indicate the jump FDC.

[3] C
[4] Regiment
[5] MR

(6) **MDS and Radars.**

MDS/MMS

[1] letter M
[2] letter E
[3] letter T
[4] team number
[5] artillery regiment number followed by letter M

Radars

[1] letter C
[2] letter B
[3] letter R
[4] team number
[5] artillery regiment number followed by letter M

(7) **TPCs.**

Main TPC

[1] letter T
[2] letter P
[3] letter C
[4] regiment
[5] MR

Jump TPC

[1] letter F
[2] letter W
[3] letter D
[4] regiment
[5] TPC

(8) **MORTAR PLATOONS.** Currently mortars using the MBC devices use a MBC for each section, hence the need for a TACFIRE alias (logical name) for each section.

[1] number 8	[1] number 2
[2] number 1	[2] number 1
[3] letter M	[3] letter M
[4] battalion	[4] battalion
[5] regiment	[5] regiment

(9) **NAVAL SURFACE FIRE SUPPORT SHIP.**

[1] mount number - if mounts
[2] bore diameter in inches
[3] ship type - D = destroyer

- C = cruiser
- F = frigate

[4] caliber/length designator
[5] last three digits of the hull number

G. **SYSTEM TYPE.** The system type assigned to a destination unit determines the format of transmitted messages and the routing of messages.

(1) **Message format.** Digital devices are classified as either fixed or variable format.

(a) A variable format message device can reformat a message to suit the needs of the receiving device. A variable format BCS, for example, transmits the observer location to an AFATDS (also a variable format device) as an FM;OBCO message, but the same message is transmitted to a fixed format DCT as a string of characters that the DCT receives as an observer location message.

(b) A fixed format device transmits a string of 38 characters that are interpreted as a limited catalogue of messages.

(c) Identifying an incorrect device type can result in messages transmitted in a form that will be received in error or not received at all.

(2) **Message routing.** Some device types control routing of messages during fire mission processing.

(a) **FO number.** DMD identifies the subscriber as an FO. This causes the IFSAS computer to assign the subscriber value from the fourth subfield of the logical name as the FO originating the mission. **AFATDS extracts the FO number from the destination unit's routing window.**

(b) FISTDMD causes the computer to expect the fire mission to pass through this agency for approval prior to arriving at the FDC. The computer will expect initial calls for fire to be transmitted from this station but, will attempt to route subsequent FOCMD messages directly to the FO.

H. **Destination Unit table format.** All destination unit data is published in a standard format given and explained below. All devices on the net may not require all the data presented, however, for brevity and simplicity a common table is provided.

LINE #	OWN NAME	HOSTNAME	NET ACCESS	PROTOCOL	NET MASK	ADD	IP ADDRESS	SUBNET ADD	ROUTER	RANK
1.	FFCC IMF	onemef	MFFC	188-220A	DAP	02	193.8.12.2	225.225.225.0		1/4

If a destination unit is on the LAN network and is on a different subnet a subnet mask must be designated as well as the router address, hostname and IP address.

LINE #	STATION NAME	HOSTNAME	ADD	IP ADDRESS	FO#	ROUTE
2.	FFCC FWD IMF	onemeffwd	10	193.8.12.10		PD via MFFC

(1) NET DATA**.**

(a) **LINE #** provides a reference for ease in identifying a line in the table. This begins the net data for the station.

(b) **OWN NAME** is the name of the station as it is entered in the net settings in TACFIRE (TACFIRE Alias) or is used to identify the UNIT ID in AFATDS.

(c) **HOSTNAME** is an unique name identifier for yourself, when using the Internet Protocol.

(d) **NET** indicates the net for which the following data is provided.

(e) **PROTOCOL** indicates the protocol for the net.

(f) **NET ACCESS** provides net entrance priority values used to establish the net settings for TACFIRE nets, 188-220A and VMF nets.

(g) **ADDRESS** is the character(s) assigned as the station's address.

(h) **IP Address** is an IP protocol address for the subnet and the station.

(i) **SUBNET MASK** informs the computer when a destination unit is on a different subnet for routing purposes.

(j) **MOI ADDRESS** is the TACFIRE message of interest address. (Same as Physical Address)

(k) **RANK** is the station rank of the total number of stations for VMF nets.

(2) **NET SUBSCRIBERS** lists the destination units' data for the stations with which you will communicate.

(a) **LINE #** provides a reference for the lines of destination units. This begins the subscriber portion of the table.

(b) **STATION NAME** is the name of the destination unit as it is entered in the destination unit data.

(c) **HOSTNAME:** is an unique name identifier for a destination unit using the Internet Protocol.

(d) **SYSTEM TYPE** is the MCFSS device used by the destination unit.

(e) **ADD** is the character(s) assigned as the subscriber's address.

(f) **IP Address** is an IP address for the subnet and the station.

(g) **MOI ADD** is the same character as the PHY ADD.

(h) **AGENCY** is the type of target acquisition agency that the destination unit represents. If the destination unit is not a target acquisition agency, "OTHER" is used.

(i) **FO NUMBER** is the number assigned to the observer in the EDIT ROUTES window for AFATDS. This entry is essential for routing and message translation to and from IFSAS.

(j) **ROUTE** provides the primary and possibly secondary and tertiary routes for AFATDS. Letters P, S and T indicate primary, secondary and tertiary routes and letters D and I indicate direct and indirect routes.

6. **Constructing a communications configuration.** Communications configurations are designed by the G-6/S-6 with assistance from the G-3/S-3. Though the data provided in para. 6H above can be used for the majority of fire support situations the constant need to task organize requires the ability to produce working configurations. Building a communications configuration is approached as a logical sequence of steps.

A. **Determine the required connectivity.** Based on the task organization and needs of the stations involved, determine what stations must communicate with other stations. At this step it is not crucial to determine the type of route (direct or indirect).

B. **Determine what nets will be required.** This is a function of the number and type of stations involved as well as the device types that the stations use to communicate.

C. **Check the routes** based on device limitations and assign net setting parameters. Each different tactical computer system possesses unique communications entries and, in some cases, limited connectivity due to available protocols. These must be examined to ensure the net settings provided for a net are compatible with the stations that must use the net.

D. **Check fire mission routes.** TACFIRE devices require AFATDS to provide a route to each FU and to each sensor for who fire missions may be fired. These must be added as indirect (relay) routes if no direct route exists. (see APPENDIX D)

E. **Assign addresses.** Deconflicted addresses must be assigned to all stations on each net. Addresses must be unique on each net but can be "reused" for assignment once on each

additional net.

F. **Build TAB J** enclosures to allow for dissemination of the communication configuration.

7. **Communications etiquette**.

A. **Entering the net.** Stations entering the net will establish voice communications on the appropriate comm coord net using the radio/ communications equipment assigned for the data net. (BN FD voice for FOs, battery FDCs and BN FSCCs entering COFs.) When satisfactory voice communications are established, the net control station directs the station to enter the data net and to send data communications check. The subscriber station changes frequencies from the comm coord net to the data net and transmits communications checks data. AFATDS also allows the transmission of a test message to a destination unit, which checks for connectivity.

8. **Trouble shooting.** Communications trouble shooting will be directed by the net control station on the appropriate comm coord (BN FD net for stations on the COF nets.) The following procedures are recommended for the operator when communications fail, prior to net control direction.

STEP	EQUIPMENT	ACTION
CHECK PERIPHERALS.	SP-TCIM.	"REFRESH"
		MATCH ASSIGNED CHANNELS WITH SP -TCIM CONNECTIONS
		ENSURE GROUNDS ARE ESTABLISHED
		SEAT SPTCIMs *
		SEAT SPTCIM CABLES/REFRESH
	CABLES.*	CHECK CONNECTION
		CLEAN CONNECTOR
		ENSURE THE PROPER END OF THE CABLE (RADIO/TCIM).
	WIRE LINE ADAPTER.	ENSURE CONNECTION ON PROPERSP -TCIM.
		ENSURE WIRE *** CONNECTION TO PROPER POST.
	RCU.	CHECK CONNECTION.
		CLEAN CONNECTION.
		ENSURE THE RCU'S CONNECTED TO PROPER NET.
		ENSURE THE RCU'S SETTINGS.
	RADIO.	CHECK DATA SETTINGS.
		PROPER ANTENNA.
		ANTENNA GROUND.
AFATDS.	NET SETTINGS.	IS THERE A TACFIRE DEVICE ON THE NET? PROTOCOL IS TACFIRE. ONLY AFATDS DEVICES ON THE NET? PROTOCOL IS VMF.
		ENCRYPTED/UNENCRYPTED?
		MEDIA: SINCGARS ICOM-RADIO LOCAL RADIO-AN/GRA-39 2 WIRE 4 WIRE
		DATA ENCODING FSK/NRZ/CDP
		DATA RATE:SAME AS SINCGARS.
		KEYTIME
		NET ACCESS DELAY NET ACCESS DELAY CONSTANT NUMBER OF STATIONS / STATION RANK
		SINCGARS SETTINGS: FH/FHM/SC PLAIN/CIPHER
		CHANNEL BALANCING
		CARRIER DROPOUT TIME.
		ERROR CORRECTION.
		BLOCK MODE
		ENSURE GROUND.
GROUND	GROUNDING SYSTEM.	ENSURE SECURE ATTACHMENT TO ALL COMPONENTS OF SYSTEM.
		ENSURE ALL STAKES UTILIZED.
		ENSURE ROCK SALT AND WATER USAGE.

* VERIFY FUNCTIONALLY PRIOR TO OPERATION.
** DO NOT CONNECT/DISCONNECT WHILE POWER IS APPLIED.
***CHANNELS 1 AND 3 ARE 4 WIRE/VMF ONLY (PROGRAMMABLE)

CHAPTER THREE

AFATDS SYSTEMS INITIALIZATION

1. General. Initialization is the procedure by which the AFATDS' tactical data base is constructed. During initialization, data is input that establishes the computer identity, target block assignment, commander's guidance, unit and geometry data that allows the computer to determine fire support solutions.

2. Software Load. The loading of AFATDS software is a simple procedure. It is a single disk load, requiring only a few operator entries.

1. Apply power to the system.
2. When an image appears on the monitor, press the STOP and A keys simultaneously. This will stop the system from initializing from the RHDD and an informational text will be displayed.
3. Insert the CD into the CD drive. Ensure that the software is labeled CCU. There is a separate port of software for the UCU and the CCU and the UCU port will not load in the CCU.
4. "Type boot, go (continue), or login (command mode)" is displayed, type boot cdrom. "Firmware Password:" is displayed, type the default password, afatds.
5. The initialization process will stop when a hostname is required. The hostname is composed of up to 25 alphanumeric characters and must begin with a letter. Additionally the hostname must be entered in lower case with no spaces. afatds01 through afatds11 are the standard entries, however, any hostname may be entered. Enter afatds01. When possessing more than one AFATDS workstation, and the intention is to LAN them together as a multi-workstation OPFAC, each individual workstation must have a unique hostname and IP address entered when loading software. This is an DII, COE requirement even though the individual OPFACs will be LANed together as one OPFAC. **
6. The initialization process will stop again for an IP address entry. Type 192.8.12.51. AFATDS will accept any LAN class IP address. The one we will enter is a class "C" address. It is important to remember that the internal LAN must be a unique subnet address as well as the stations on that subnet having a unique address. The system will now finish loading without further operator action, and will stop at the DII, COE login window. This entire process takes approximately 25 minutes.

** Example of the unique IP address and hostname conventions for multiple OPFACs. Also notice the subnet address is in bold type.

OPFAC 1	OPFAC 2	OPFAC 3
afatds01	afatds02	afatds03
192.8.12.51	**192.8.12**.52	**192.8.12**.53

3. DATA BASE MANAGEMENT. When AFATDS software is loaded onto the workstation for the first time, no data base exists. All areas of the database are set to their default values or are blank. The Master Unit List (MUL) is the exception to this rule.

A. IMUL. On the final cut of A98 software the Integrated MUL (IMUL) resides on the

software disk, and is a part of the AFATDS application load. If a database from a previous version of software, not containing the IMUL, is converted, the IMUL will be overwritten with the MUL contained in the database. This is not desirable, as all operating units should be using the same MUL. To work around this problem, the procedure is recommended. Load software, and activate the system as one of the unit options in the IMUL, ensuring a compatable unit role is selected. A copy of the IMUL can then be exported to a jaz cartridge. The unit's database, developed in a previous version of software, may now be restored and activated. The IMUL previously archived to a jaz cartridge, can now be imported into the restored database. This procedure will allow all units to work with a common IMUL while using old databases. It is important to note that this procedure will work only as long as the IMUL is created using the same master unit list numbers for established units.

B. JMUL. When subsequent versions of AFATDS software are fielded, a Joint MUL (JMUL) will be issued as a separate disk along with the software. Additionally, a JMUL CD will be issued any time the JMUL is updated. The JMUL is the same MUL as the IMUL, only not incorporated into the software load. Functionality will be added to the disk utilities options, allowing the ability to access the CD ROM drive and read the JMUL CD. This functionality will allow the JMUL to be imported to the active database from the CD. The separate issue of software and the JMUL will allow the conversion of databases, while using the JMUL, without the workaround described in A. above.

4. **DATABASE CREATION.** The process by which a new database is created is described in the following steps:

(1) Load software.

(2) Establish your UNIT ID and corresponding Unit Role.

(3) Make any entries to the unit configuration window desired.

(a) Edit workstation name.

(b) Refresh TCIMs.

(4) Prior to the operation and system activation CLOCK SYNCHRONIZATION should be established for all systems as per unit SOP, by the senior Headquarters.

(5) Activate the system.

(6) Operational Data Bases should be backed-up at designated intervals as per unit SOP, or after a large amount of data has been input into the system.

4. UNIT ROLES. When the AFATDS workstation is booted, before activating, the operator must select a unit role for the OPFAC. The role governs how the software configures to process fire support tasks.

A. **FFCCs and FSCCs** select unit role FSE/FSCC.

B. **DASC and TACC** select unit role FSE/FSCC.

C. **Regimental FDCs and battalion FDCs** select unit role FA CP.

D. **Target processing centers** select unit role FSE/FSCC.

E. **Firing Units** select unit role FU.

5. MASTER UNIT LIST. The master unit list (MUL) provides each AFATDS computer with a list of all computer stations that are involved in operations. A station must be in the MUL for that station's data to be stored or processed by an AFATDS computer. In addition, all OPFACS with which communications are conducted, must appear in the MUL. The MUL contains a set of data for each unit. As described in paragraph 3 above, the Marine Corps MUL was combined with the Army MUL to form a joint MUL (JMUL). The JMUL was then written into the AFATDS application and becomes the IMUL and resides in the blank database existing after loading software. Because of this procedure the IMUL is always available for every unit when building databases. This ensures interoperability for all units, up to the joint level. However, just as before, any changes must be submitted to that services highest HQ for further submission to the joint controlling agency.

A. **Responsibility.** Currently the MUL used by the Marine Corps, and incorporated into the JMUL, is managed by Marine Corps System Command. This provides a common MUL that supports all Marine and joint operations. Task organizations of forces and changes in equipment status generates the need for local modifications of the MUL to support specific operations. During such periods, the MUL is the responsibility of the senior Marine headquarters. The MUL is disseminated as early as possible prior to the commencement of operations. Dissemination is accomplished by exporting the master unit list to a jaz cartridge, and delivery of the cartridge to subordinate units. Changes to the MUL are directed by the responsible headquarters and disseminated by freetext message. The JMUL, containing the USMC approved MUL is listed in APPENDIX B of this publication.

B. **Contents of the MUL.**

(1) **Unit identification**. This data includes the name of each unit (UNIT ID) and an assigned unit number. The unit number and name is unique to that unit. The unit number must be the same at each OPFAC for data exchange to occur. All BCS and FDS units must appear as separate entries even if they are employed at an AFATDS equipped unit. In other words, if a battery FDC is equipped with both AFATDS and the BCS, both are separate IDs in the MUL.

(a) **UNIT ID** is composed of six data fields designed to indicate ascending order of military organizations from section, platoon, company, battalion, regiment and echelons above regiment. This logic, however, does not have to be used as long as all stations use the same master unit list. It should be noted that in many applications the data fields identifying units are not long enough to contain the entire unit ID and only the first dozen letters show. This makes it necessary to contain enough data in the first 10 to 15 characters to identify the unit.

(b) **UNIT NUMBER** ranges from 1 to 32766, and is the identifier for all unit data that is transmitted. Currently the Marine

Corps is assigned the number block from 27,000 through the end of the MUL (32,766).

(2) **SYSTEM TYPE.** A third item that must be provided for all stations is the device type or computer type used to communicate. The device type tells the AFATDS computer what messages may be transmitted to the station and how to format the message. The following rules pertain to the assignment of device types:

(a) IFSAS/LTACFIRE is used for IFSAS equipped stations.

(b) DCT is assigned to FOs using the DMS. USMC DCT AIR and USMC DCT ARTY are intended for use with the Marine Tactical Protocol (MTS) programs for AIR and ARTY. These programs are available at the DMS but should not be used since the MTS protocol used by the DMS does not perform in accordance with the MIL STD agreement.

(c) AIR and NSFS actually indicate the absence of a device since no compatible tactical data communication device exists for these stations. This entry allows information to be printed.

(3) **Aliases.** Some computers use specific name arrangements to identify the stations with which they communicate. These names are stored by AFATDS in the MUL and are accessed as required.

(a) **TACFIRE ALIAS** is a required entry in the MUL for all MCFSS devices and is discussed in detail in para. 6F of Chap 2. TACFIRE aliases must be entered for all TACFIRE devices (DMS, BCS, IFSAS, FIREFINDER and MDS/MMS) and for all AFATDS communicating with TACFIRE devices. A series of rules govern the structure of TACFIRE ALIASES and is discussed in the reference mentioned previously in this paragraph.

(b) **ATCCS ALIAS** is used by stations in the Army Command and Control System. This is a required entry when the station's device is the MCS, FAADC2, ASAS or CSSCS.

(c) **NATO ALIAS** allows the computer to communicate with stations using the German ADLER, French ATLAS, and British BATES Fire Support Systems.

(d) **JMCIS ALIAS** allows AFATDS to associate friendly units with tracks for the exchange of data between AFATDS and TCO/GCCS-M.

(4) **MSE PHONE NUMBER** provides storage and retrieval of a phone number that can be used to dial through Multisubscriber Equipment (MSE) or the DSVT.

(5) **VMF UNIT REFERENCE NUMBER** is a required entry for an AFATDS unit. The VMF URN block assigned to the Marine Corps is 2,000,000 through 2,500,000.

6. MAP DATA. All AFATDS OPFACS will operate using map mod data. The map mod provides the datum that will be used as the base datum for that system. The map mod also

allows the computer to determine the 100,000 meter square within which short coordinates receive from fixed format TACFIRE devices can be expanded to long coordinates. The highest headquarters dictates the datum as per the disseminated maps. Subordinate FSCCs dictate their own and their supporting units map mod reference grid based on their focus of operations. Changes to the map setup are made at the discretion of the FSC/S-3/FDO at each station. The MAP MOD is also transmitted to IFSAS Systems using the SPRT;DATUM and SPRT;MAP messages.

In addition it may be necessary to change the mapmod in large scale operations. This should be done as per the above paragraph, however, for AFATDS dealing with fixed format TACFIRE devices the mapmod may have to be moved more frequently due to the limitation of fixed format devices transmitting short coordinates only.

A. **INITIAL MAP DATA.** PLAN SOP will be setup using map data of the home station of the unit.

B. **OVERLAYS.** Overlays commonly used by the OPFAC will be established in PLAN SOP.

C. **OPERATIONS.** PLAN SOP is made current (implemented) and all map data and unit locations contained therein are altered to reflect the actual area of operations. All changes directed by the operations order are implemented and data base management begins.

7. UNIT DATA

A. **BASIC UNIT INFORMATION.** AFATDS requires that unit data be stored prior to receiving the first unit update if the unit is not equipped with an AFATDS computer. This requirement is driven by the fact that non-AFATDS stations do not report sufficient data (e.g. command and supported unit IDs) to create a complete unit record. All organic, subordinate, adjacent and higher non-AFATDS units will be constructed in plan SOP.

(1) **UNIT TYPE.** Unit type is selected before the unit data is entered. Unit type of OBSERVER, RADAR, etc. apply to like sensor units. OTHER applies to any unit that is not a sensor or a fire unit. CANNON, MORTAR, AIR, AVIATION and ROCKET/MISSILE is applied depending on firing unit type.

(a) If an AFATDS computer controls the BCS or FDS at the fire unit level (i.e., battery FDC possesses an AFATDS workstation and a BCS) then unit data is constructed for both the AFATDS and the BCS. Both unit data represent the same echelon (both are battery or platoon units). The AFATDS unit is assigned UNIT TYPE CANNON or ROCKET and the BCS or FDS unit is OTHER.

(b) If an AFATDS computer controls more than one BCS or FDS (e.g., battalion FDC with an AFATDS workstation controls fire units equipped only with BCS) then unit data is constructed for both the AFATDS and the fire units. The AFATDS unit is assigned UNIT TYPE OTHER and the BCS or FDS unit is CANNON or ROCKET.

(2) **UNIT SYMBOLS.** Unit symbols provide the map graphic that represents the unit. It is important that the symbol properly represent the actual function of the unit to allow fire mission processing to occur. For example, a battalion FDC must be a "CP". If the unit symbol "FDC" or "COC" is used the wrong fire mission message will be transmitted from another OPFAC thus preventing the correct response from occurring. The following table lists legal entries:

TABLE 3-1, UNIT SYMBOLS	
OPFAC ROLE	SYMBOL
FSE/FSCC	FSCC, CP, FSE, FSCC B, ATTACK MAIN, SACC
FA CP	CP, UNIT
FU	FDC,CP, UNIT

(a) **LABELS.** Labels entered under higher/lower fields will be in accordance with FM 101-5-1 and local SOPs.

B. **GENERAL UNIT INFORMATION.**

(1) **COMMAND AND SUPPORTED RELATIONSHIPS.** Command and supported relationships are provided in chapter 4 of this reference.

(2) **CONOPS.** CONOPS set up for each OPFAC is provided in chapter 4 of this reference.

C. **DETAILED UNIT INFORMATION.** The Detailed Unit Information window is available for all Unit Types.

D **OPERATIONS.** Unit data is the responsibility of each unit. Updates will be made and distributed as they are required. Units with subordinate TACFIRE stations will ensure adequate unit data is maintained. This unit data must be built prior to receiving the first unit update from the TACFIRE station. It is suggested that a database with initial positions, as per tab J, be built in a plan. Upon arriving in the field implement the plan, and stand by for updates.

(1) **RADAR Unit Data.** Radar basic, general and detailed unit data is built for subordinate radars. When the radar location message is transmitted, only the radar location will update.

(2) **OBSERVER Unit Data.** Observer basic, general and detailed unit data is built for subordinate observers at the FSCC to which the observer requests fire mission. When the OBSERVER LOCATION MESSAGE is sent from the DMS, the location, PRF code, cloud height and visibility will update.

TABLE 3-2	
DMS VISIBILITY ENTRIES	AFATDS INTERPRETATION
1. 0 (less than 2000m)	Not recognized, original stored entry remains unchanged.

2. 1 (2000-4000m)	2000m
3. 2 (4000-7500m)	4000m
4. 3 (>7500m)	7501m

NOTE: *If unit data is not present in the computer that receives updates directly from the radar or observer a medium level alert indicating a translation failure of the TACFIRE observer location will be received. This is caused by the fact that the fixed format devices cannot transmit sufficient data (e.g. unit symbol, command and supported unit IDs, etc.) to allow a unit record to be created.*

(4) **IFSAS units** require that basic and general unit information is built at the AFATDS station to which these units report. IFSAS equipped stations can transmit subordinate sensor and fire unit data but cannot transmit a message containing their own unit data. After communications are established, IFSAS units will transmit their unit location by SYS;PTM. This will be received by the AFATDS OPFAC as a freetext message.

(5) **BCS and FDS** equipped fire units require that basic, general and detailed data be built at their higher AFATDS OPFAC.

(6) **Air and Naval Surface Fire Support** basic and detailed data must be built at the controlling AFATDS OPFAC due to the fact that there are no existing digital devices for these agencies at this time.

8. GEOMETRY.

A. **PLAN SOP.** No geometry is stored in plan SOP. All initial geometry is entered in accordance with the operations order and overlay. This geometry is then distributed by transmitting the geometry from the responsible OPFAC using the distribution list.

B. **OPERATIONS.** All geometry directed by the operations order will be added to the current situation. If the geometry is not effective at the start of actual operations (e.g. a zone for a unit not yet ashore or an on-call measure) the geometry is entered as an on-call measure with an effective time of H+0. When the measure is to be placed into use the responsible OPFAC activates the measure and distributes the change via distribution.

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CHAPTER FOUR

COMMAND-SUPPORTED RELATIONSHIPS AND CONOPS

1. **COMMAND-SUPPORTED RELATIONSHIPS.** Commanding-supported relationships provide the AFATDS computer with the identification of higher headquarters and subordinates for each unit as well as the support-supported relationships for fire support and maneuver units. This information is critically important for data distribution and fire mission processing. Table 4-1 provides a guide used to determine the commanding-supported relationships. The actual relationships at any given time will depend upon the task organization and missions assigned to fire support assets. Units without a digital device are not included in this table, however, they must be created at their commanding unit as per task organization and disseminated via data distribution.

TABLE 4-1 COMMAND-SUPPORTED RELATIONSHIPS, ASHORE

STATION	OPFAC	COMMANDED BY:	SUPPORTED UNIT:
Senior FFCC	MAIN	NONE	NONE
	FWD	MAIN Senior FFCC	MAIN Senior FFCC
TACC	MAIN	Main Senior FFCC	Main Senior FFCC
GCE FSCC	MAIN	MAIN Senior FFCC	MAIN Senior FFCC
	FWD	MAIN Senior FFCC	MAIN Senior FSCC
DASC	MAIN	TACC	MAIN GCE FSCC
	FWD	TACC	MAIN GCE FSCC
RAOC	MAIN	Senior FSCC	Senior FSCC
	FWD	Senior FSCC	Senior FSCC
REGT FSCC	MAIN	MAIN DIV FSCC	MAIN DIV FSCC
	FWD	MAIN DIV FSCC	MAIN DIV FSCC
BN FSCC	MAIN	MAIN REGT FSCC	MAIN REGT FSCC
	FWD	MAIN REGT FSCC	MAIN REGT FSCC
BN MTR PLT		MAIN BN FSCC	MAIN BN FSCC
FO		MAIN BN FSCC	MAIN BN FSCC
REGT FDC	MAIN	MAIN DIV FSCC	MAIN DIV FSCC
	FWD	MAIN DIV FSCC	MAIN DIV FSCC
TPC	MAIN	MAIN REGT FDC	MAIN REGT FDC
	FWD	MAIN REGT FDC	MAIN REGT FDC
RADARS		MAIN TPC	MAIN TPC
MET SECTIONS		MAIN TPC	MAIN TPC
DS BN FDC	MAIN	MAIN REGT FDC	SUPPORTED FSCC MAIN
	FWD	MAIN REGT FDC	SUPPORTED FSCC MAIN
R BN FDC	MAIN	MAIN REGT FDC	REINFORCED FDC, MAIN

	FWD	MAIN REGT FDC	REINFORCED FDC, MAIN
GS BN FDC	MAIN	MAIN REGT FDC	MAIN DIV FSCC
	FWD	MAIN REGT FDC	MAIN DIV FSCC
GSR BN FDC	MAIN	MAIN REGT FDC	MAIN GCE FSCC, ON ORDER REIN FDC MAIN
	FWD	MAIN REGT FDC	MAIN GCE FSCC, ON ORDER REIN FDC MAIN
BTRY FDC	AFATDS	MAIN BN FDC	MAIN BN FDC
	BCS	BTRY AFATDS	BTRY AFATDS

2. **COMMAND SUPPORTED RELATIONSHIPS DURING LANDING FORCE TRANSITION ASHORE.** Table 4-2 details relationships during transition of control ashore during amphibious operations.

TABLE 4-2 COMMAND-SUPPORTED RELATIONSHIPS, AFLOAT			
STATION	OPFAC	COMMANDED BY:	SUPPORTED UNIT:
MAGTF FFCC	MAIN	NONE (Joint)	NONE (Joint)
	FWD	NONE (Joint)	NONE (Joint)
GCE FSCC	MAIN	MAIN MAGTF FFCC	MAIN MAGTF FFCC
	FWD	MAIN MAGTF FFCC	MAIN MAGTF FFCC
REGT FSCC	MAIN	MAIN GCE FSCC	MAIN GCE FSCC
	FWD	MAIN GCE FSCC	MAIN GCE FSCC
BN FSCC	MAIN	MAIN REGT FSCC	MAIN REGT FSCC
	FWD	MAIN REGT FSCC	MAIN REGT FSCC
BN MTR PLT	FDC	MAIN BN FSCC	MAIN BN FSCC
MTR FO	FO	MAIN BN FSCC	BN MTR PLT
REGT FDC	MAIN	MAIN GCE FSCC	MAIN GCE FSCC
	FWD	MAIN GCE FSCC	MAIN GCE FSCC
TPC	MAIN	MAIN REGT FDC	MAIN REGT FDC
	FWD	MAIN REGT FDC	MAIN REGT FDC
RADARS		MAIN TPC	MAIN TPC
MET		MAIN TPC	MAIN TPC
DS BN FDC	MAIN	MAIN REGT FSCC	MAIN REGT FSCC
	FWD	MAIN REGT FSCC	MAIN REGT FSCC
BTRY FDC		MAIN DS BN FDC	MAIN DS BN FDC

3. **Command and supported relationships during the initial phases** of amphibious assault are governed by the situation and communications limitations. Table 4-3 recommends a system of relationships based on the assault force commanding assets ashore and the assumption that higher headquarters units will transition ashore beginning with their forward elements.

TABLE 4-3 COMMAND-SUPPORTED RELATIONSHIPS, INITIAL ASSAULT MAGTF FFCC IN SACC, GCE FSCC IN LFOC			
STATION	OPFAC	COMMANDED BY:	SUPPORTED UNIT:
SACC	MAIN	None	None
GCE FSCC	MAIN	MAIN MAGTF FFCC	MAIN MAGTF FSCC
	FWD	MAIN MAGTF FFCC	MAIN MAGTF FSCC

TABLE 4-3 COMMAND-SUPPORTED RELATIONSHIPS, INITIAL ASSAULT MAGTF FFCC IN SACC, GCE FSCC IN LFOC			
ASSAULT BN FSCC	MAIN	MAIN GCE FSCC	MAIN GCE FSCC Causes fire requests for additional fires to be transmitted to the MAGTF FFCC where all other assets are controlled.
	FWD	MAIN GCE FSCC	MAIN GCE FSCC
BN MTR PLT	FDC	MAIN BN FSCC	MAIN BN FSCC
MTR FO	FO	MAIN BN FSCC	BN MTR PLT
REGT FDC	MAIN	MAIN DIV FSCC	MAIN DIV FSCC
REGT FDC	FWD	MAIN DIV FSCC	MAIN DIV FSCC
TPC	MAIN	MAIN REGT FDC	MAIN REGT FDC
	FWD	MAIN REGT FDC	MAIN REGT FDC
RADARS		MAIN TPC	MAIN TPC
MET		MAIN TPC	MAIN TPC
DS BN FDC	MAIN	MAIN ASSAULT FORCE FSCC This causes the BN FDC to be positioned and receive orders from the FSCC ashore.	MAIN MAGTC FFCC Causes requests for reinforcing fires to be transmitted to the MAGTF FFCC where all other fire support assets are available.
	FWD	MAIN REGT FSCC	MAIN REGT FSCC
BTRY FDC		MAIN DS BN FDC	MAIN DS BN FDC

4. **Effects of command-supported relationships.**

A. **Data distribution**. Default data distribution lists are created by the computer based on the command and supported relationships of units. CONOPS backup stations provide the remainder of the default lists. Although default distribution can be used by USMC units, it is recommended that distribution lists be created with the contents of the default lists being merged and then adding those additional units desired. Data distribution is discussed in great detail in chapter 6 of this publication.

B. **Fire mission processing**. Command and supported relationships are vital for fire mission processing and fire support planning. An AFATDS OPFAC employs only those assets:

(1) That are commanded by or support that OPFAC, or

(2) That are commanded by or support a supporting artillery CP, or

(3) That are commanded by or support a unit in the systems Attack Parameters table.

5. **VARIATIONS ON COMMAND AND SUPPORTED RELATIONSHIPS.**

A. Although normally not done, the DS artillery commander may opt to assign battery FDCs to support specific committed battalion FSCCs. At the battery FDC, the supported unit ID is that of the battalion FSCC. The command unit ID is still the battalion FDC. This relationship

causes the battalion FDC to consider the battery FDC for fire missions prior to sending the fire request higher.

6. **Continuity of Operations (CONOPS).**

A. **General**. CONOPS allows continued, uninterrupted operations when an AFATDS station fails or is destroyed. This is accomplished by establishing planned backup stations designated to take over operations of the failed station.

B. **Terms used in CONOPS**.

(1) **The principal** is the station that loses the ability to control it's subordinates.

(2) **The primary** backup is the station of choice that assumes operation for the principal.

(3) **The secondary backup** is a redundant backup that is used if the primary backup is not capable.

(4) **The satellite stations** are those higher, subordinate, supporting and supported OPFACS that communicate directly with the principal.

(5) Table 4-4 provides a guide to CONOPS backup stations.

TABLE 4-4, CONOPS SETUP		
Note: The forward element of each station is assigned no secondary backup in this table. If the main CP is lost then the forward element assumes control of all operations and is backed-up by the secondary backup station previously assigned to the main.		
STATION	**PRIMARY BACKUP**	**SECONDARY BACKUP**
SACC	The MAGTF FFCC MAIN backs up the SACC until the CATF has transitioned control of the landing force to the CLF. After the transition of control ashore, SACC has no backup.	
MAGTF FFCC MAIN	MAGTF FFCC FWD	GCE FSCC MAIN
MAGTF FFCC FWD	MAGTF FFCC MAIN	
FORCE ARTY HQ MAIN	FORCE ARTY HQ FWD	MAGTF FFCC MAIN
FORCE ARTY HQ FWD	FORCE ARTY HQ MAIN	
GCE FSCC MAIN	GCE FSCC FWD	MAGTF FFCC MAIN
GCE FSCC FWD	GCE FSCC MAIN	
TACC	TAOC	DASC MAIN
DASC MAIN	DASC FWD	TACC MAIN

DASC FWD	DASC MAIN	
RAOC	LOC	DIV FSCC MAIN in MEF, in MEF FWD and MEU operations no CONOPS secondary however functions of the RAOCC is performed by the GCE FSCC if the RAOCC is not operational.
REGT FSCC MAIN	REGT FSCC FWD	SISTER REGT FSCC MAIN
REGT FSCC FWD	REGT FSCC MAIN	
BN FSCC MAIN	BN FSCC FWD	SISTER BN FSCC MAIN
BN FSCC FWD	BN FSCC MAIN	
REGT FDC MAIN	REGT FDC FWD	GS BN FDC MAIN
REGT FDC FWD	REGT FDC MAIN	
TPC MAIN	TPC FWD	REGT FDC MAIN in MEF; in MEF FWD and MEU operations no CONOPS secondary however functions of the TPC is performed by the REGT FDC if the TPC FWD is not operational.
TPC FWD	TPC MAIN	
DS BN MAIN FDC	DS BN FDC FWD	R BN FDC MAIN or REGT FSCC MAIN in lieu of R BN
DS BN FDC FWD	DS BN FDC MAIN	
R BN FDC MAIN	R BN FDC FWD	DS BN FDC MAIN
R BN FDC FWD	R BN FDC MAIN	
GS & GSR BN FDC MAIN	BN FDC FWD	REGT FDC MAIN
GS & GSR BN FDC FWD	BN FDC MAIN	
BTRY FDC	SISTER BTRY FDC	None

C. **CONOPS COMMUNICATIONS CHANGES.** The backup station exercises command and control of the principal's subordinates by establishing communications with these stations. Because the forward element of each station is the primary backup for that station and has the same communications requirements, no additional communications setup is required. However, secondary backups require some changes.

(1) **SACC.** The SACC is backed up by the MAGTF FFCC MAIN (LFOC) prior to transition of control to the Commander, Landing Force. Since the SACC does not move ashore no backup is provided after this transition of control. The MAGTF FFCC MAIN establishes communications with agencies outside the MEF as required by the operation. The SACC provides the necessary CONOPS communications configuration to the MAGTF FFCC MAIN and any other station affected by this change.

(2) **MAGTF FFCC.** The communications requirements of the secondary back

for a MAGTF FFCC depends on the echelon.

(a) **MEF FFCC MAIN.** The secondary backup for the MEF FFCC MAIN is the division FSCC MAIN. The MEF FFCC MAIN commands and controls the subordinate and supporting regiments via communications on the MEF FFC net. This net is guarded by the division FSCC MAIN and thus no additional communications requirements are imposed during CONOPS.

(b) **MEF FWD FFCC.** The secondary backup for the MEF FWD FFCC is the Division FSCC Main. The MEF FWD FFCC commands and controls the subordinate and supporting units via communications on the MEF FFCC net. This net is guarded by the Division FSCC and thus no additional communications requirements are imposed during CONOPS.

(c) **MEU FFCC MAIN.** The secondary backup for the MEU FFCC MAIN is the battalion FSCC. The MEU FFCC MAIN commands and controls the subordinate and supporting units via communications on the MEU FFC net. This net is guarded by the battalion FSCC and thus no additional communications requirements are imposed during CONOPS.

(3) **GCE FSCC.** As in MAGTF FFCC CONOPS, the backup of the GCE FSCC is the FWD.

(a) **Division FSCC.** The secondary backup for the division FSCC MAIN is the MEF FFCC MAIN. The division FSCC MAIN commands and controls the subordinate and supporting regiments via communications on the division FSCC net. This net is not guarded by the MEF FFCC MAIN. During CONOPS the MEF FFCC MAIN directs the subordinate and supporting units of the division to establish communications on the MEF FFC net. The MEF FFCC MAIN provides a communications configuration to support this to the division FSCC MAIN for dissemination prior to the need for CONOPS.

(b) **Regimental FSCC.** The secondary backup for the Regimental FSCC MAIN is the MEF FWD FSCC MAIN. The regimental FSCC commands and controls the subordinate and supporting units via communications on the regimental FSC net. This net is not guarded by the MEF FWD FSCC MAIN. During CONOPS the Regimental FSCC MAIN directs the subordinate and supporting units of the regiment to establish communications on her MEF FWD FFCC net. The MEF FWD FSCC MAIN provides a communications configuration to support this to the regimental FSCC for dissemination prior to the need for CONOPS.

(c) **Battalion FSCC.** The secondary backup for the battalion FSCC MAIN is the MEU FFCC Main. The battalion FSCC MAIN commands and controls the subordinate and supporting units via communications on its COF nets. These nets are not guarded by the MEU FFCC MAIN. During CONOPS the Battalion FSCC MAIN directs the subordinate and supporting units of the battalion to establish communications on the MEU FFC net. The MEU FFCC MAIN provides a communications configuration to support this to the battalion FSCC for dissemination prior to the need for CONOPS.

(4) **NON-GCE FSCCs.**

(a) **Regimental FSCC.** The secondary backup for the regimental FSCC MAIN is a selected sister regimental FSCC MAIN. The regimental FSCC MAIN commands and controls the subordinate and supporting units via communications on the regimental FSCC net. This net is not guarded by the sister regimental FSCC. During CONOPS the sister regimental FSCC directs the subordinate and supporting units of the regiment to establish communications on its regimental FSC net. The sister regimental FSCC MAIN provides a communications configuration to support this to the regimental FSCC for dissemination prior to the need for CONOPS.

(b) **Battalion FSCC.** The secondary backup for the battalion FSCC is another battalion FSCC of the same regiment. The battalion FSCC commands and controls the subordinate and supporting units via communications on its three COF nets. These nets are not guarded by the sister battalion FSCC. During CONOPS the sister battalion FSCC directs the subordinate and supporting units of the battalion to establish communications on the sister battalion's own COF nets. The sister battalion FSCC provides a communications configuration to support this to the battalion FSCC for dissemination prior to the need for CONOPS.

(5) **Rear Area Operations Center.** The secondary backup for the RAOC is the division FSCC in MEF operations. Since both the RAOC and the division FSCC guard the MEF FFC net, no additional communications configuration is required. In MEF FWD and MEU MAGTFs no secondary backup is established. In these size units the RAOC function is performed by the GCE FSCC if the RAOC is lost.

(6) **ARTILLERY FDCs and TPC.**

(a) **Regimental FDC.** The secondary backup for the regimental FDC MAIN is a GS battalion FDC MAIN. The regimental FDC commands and controls the subordinate battalions via communications on the regimental FD net. This net is guarded by the GS battalion FDC. However, the battalion is required to add the division FSC net to the nets it guards. The division FSCC provides a communications configuration to support this to the regimental FDC for dissemination prior to the need for CONOPS.

(b) **Target Processing Center.** No secondary backup is provided. If the TPC is unable to operate then the function of the TPC is assumed by the regimental FDC. A communications configuration that allows the regimental FDC to communicate with the artillery radars and meteorological stations on the existing radar/MET net is provided by the TPC.

(c) **Battalion FDC.** The secondary backup of the battalion FDC depends the battalion's tactical mission and the availability of a reinforcing battalion.

1) **DS battalion FDC.**

a) If a reinforcing battalion is available this unit is the secondary backup for the DS battalion FDC. The DS battalion commands and controls its

subordinates via it's Bn. FD net and communicates with the supported regiment via the regimental FSCC net. The reinforcing unit does not guard the RFSC net. During CONOPS the reinforcing battalion FDC directs its own batteries onto the Bn. FD net of the DS battalion, switching to those frequencies. The reinforcing battalion then establishes the RFSC net. The DS battalion in cooperation with the regimental FSCC provides the communications configuration to support CONOPS.

b) If no reinforcing battalion FDC is available then the secondary backup for the battalion FDC is the supported regimental FSCC. The battalion FDC commands and controls the battalion via communications on three COF nets. These nets are not guarded by the regimental FSCC. During CONOPS the regimental FSCC directs the subordinate units of the DS battalion to establish communications on the regimental FSC net. The regimental FSCC provides a communications configuration to support this to the DS battalion FDC for dissemination prior to the need for CONOPS.

2) **GS and GSR battalion FDCs.** The secondary backup for the battalion FDC is the regimental FDC. The battalion FDC commands and controls the battalion via communications on three COF nets. These nets are not guarded by the regimental FDC. During CONOPS the regimental FDC directs the subordinate units of the GS or GSR battalion to establish communications on the regimental FD net. The regimental FDC provides a communications configuration to support this to the GS or GSR battalion FDC for dissemination prior to the need for CONOPS.

(d) **Battery FDCs.** Battery FDCs do not have a primary or secondary CONOPS backup. If the battery FDC is destroyed and operational howitzers survive then these are assigned to another battery for control by that battery's FDC. The battalion FDC is not adequately equipped to provide a technical gunnery solution and thus does not act as a backup.

7. **UNITS BACKED UP**. To ease in the determination of entries at each station tables 4-5, 4-6 and 4-7 provide the entries for units backed up by each station in MEF, MEF FWD and MEU level operations respectively.

TABLE 4-5, CONOPS UNITS BACKED UP IN MEF OPERATIONS			
STATION	UNIT BACKED UP #1	UNIT BACKED UP #2	UNIT BACKED UP #3
SACC MAIN			
MEF FFCC MAIN	SACC prior to transition of control to CLF, MEF FFCC FWD after transition of control.	DIV FSCC MAIN	FORCE ARTY HQ MAIN
MEF FFCC FWD	MAGTF FFCC MAIN		
FORCE ARTY HQ MAIN	FORCE ARTY HQ FWD		

TABLE 4-5, CONOPS UNITS BACKED UP IN MEF OPERATIONS			
FORCE ARTY HQ FWD	FORCE ARTY HQ MAIN		
DIV FSCC MAIN	DIV FSCC FWD	MEF FFCC MAIN	RAOCC
DIV FSCC FWD	DIV FSCC MAIN		
TACC MAIN	TAOC		
DASC MAIN	DASC FWD	TACC MAIN	
DASC FWD	DASC MAIN		
RAOC	LOC*		
REGT FSCC MAIN	REGT FSCC FWD	SISTER REGT FSCC MAIN	DS BN FDC
REGT FSCC FWD	REGT FSCC MAIN		
BN FSCC MAIN	BN FSCC FWD	SISTER BN FSCC MAIN	
BN FSCC FWD	BN FSCC MAIN		
REGT FDC MAIN	REGT FDC FWD	GS BN FDC MAIN	TPC MAIN
REGT FDC FWD	REGT FDC MAIN		
TPC MAIN	TPC FWD		
TPC FWD	TPC MAIN		
DS BN MAIN FDC	DS BN FDC FWD	R BN FDC MAIN	
DS BN FDC FWD	DS BN FDC MAIN		
R BN FDC MAIN	R BN FDC FWD	DS BN FDC MAIN	
R BN FDC FWD	R BN FDC MAIN		
GS & GSR BN FDC MAIN	BN FDC FWD	REGT FDC MAIN	
GS & GSR BN FDC FWD	BN FDC MAIN		
BTRY FDC	None, if automated equipment is inoperable the battery FDC operates using alternate means of tactical and technical fire control.		

* Logistics Operations Center

TABLE 4-6 CONOPS UNITS BACKED UP IN MEF FORWARD OPERATIONS			
STATION	UNIT BACKED UP #1	UNIT BACKED UP #2	UNIT BACKED UP #3
SACC MAIN	TACC		
MEF FWD FFCC MAIN	MEF FWD FFCC FWD	REGT FSCC MAIN	SACC
MEF FWD FFCC FWD	MEF FWD FFCC MAIN		
TACC	TAOC		
DASC MAIN	DASC FWD	TACC MAIN	
DASC FWD	DASC MAIN		
RAOC	LOC*		
REGT FSCC MAIN	REGT FSCC FWD	MEF FWD FFCC	DS BN FDC

TABLE 4-6 CONOPS UNITS BACKED UP IN MEF FORWARD OPERATIONS			
STATION	UNIT BACKED UP #1	UNIT BACKED UP #2	UNIT BACKED UP #3
REGT FSCC FWD	REGT FSCC MAIN		
BN FSCC MAIN	BN FSCC FWD	SISTER BN FSCC MAIN	
BN FSCC FWD	BN FSCC MAIN		
DS BN MAIN FDC	DS BN FDC FWD		
DS BN FDC FWD	DS BN FDC MAIN		
BTRY FDC	None, if automated equipment is inoperable the battery FDC operates using alternate means of tactical and technical fire control.		

TABLE 4-7 CONOPS UNITS BACKED UP IN MEU OPERATIONS			
STATION	UNIT BACKED UP #1	UNIT BACKED UP #2	UNIT BACKED UP #3
SACC MAIN	TACC MAIN		
MEU FFCC MAIN	MEU FWD FFCC	BN FSCC MAIN	SACC
MEF FWD FFCC	MEF FWD FFCC MAIN		
TACC	TAOC	DASC MAIN	
DASC MAIN	DASC FWD	TACC MAIN	
DASC FWD	DASC MAIN		
RAOC	LOC*		
BN FSCC MAIN	BN FSCC FWD	MEU FFCC MAIN	
BN FSCC FWD	BN FSCC MAIN		
BTRY FDC	None, if automated equipment is inoperable the battery FDC operates using alternate means of tactical and technical fire control.		

8. **CONTINUITY OF OPERATIONS**. The following is a step by step procedure for the passage of control in both planned and unplanned situations.

A. **PLANNED CONOPS**

(1) The PRINCIPAL decides to institute CONOPS.

(2) The principal decides which backup, primary or secondary, will be used.

(3) The principal contacts the backup and all subordinates and informs them that CONOPS will take place and designates the time of the change.

(4) The principal (contacting net control if necessary) dictates changes to the communications configuration in use, allowing all stations to communicate.

(a) This may require additions to the destination units and changes to the net ranking of adaptive VMF or JVMF nets.

(b) This may require nets be added for some stations.

(5) The principal disables automatic purging of MFRs and INACTIVE TARGETS if these are enabled.

(6) Set intervention criteria for all missions to increase situational awareness.

(7) The BACKUP prepares for CONOPS.

(a) The BACKUP receives the notification of impending CONOPS.

(b) The backup edits the CONOPS information window of the principal and his own CONOPS data ensuring the appropriate entries.

(c) The BACKUP makes all communications changes as indicated by the PRINCIPAL and the net control.

(d) The BACKUP makes any required changes to his data distribution scheme to ensure continued information flow for all satellite units.

(e) The BACKUP disables automatic purging of MFRs and INACTIVE TARGETS if these are enabled. This is required to allow the principal to re-assume control after CONOPS and have the same active and inactive targets as the backup. The principal must receive MFRs from the backup for any missions that were active at the time the principal gave up control and that were ended while the backup had control.

(8) The PRINCIPAL SATELLITES prepare for CONOPS by making any required changes to the communications configuration.

(9) Initiate CONOPS.

(a) The PRIMARY BACKUP.

(1) The BACKUP edits the CONOPS window of the principal.

(2) Select the PRINCIPAL and EDIT.

(3) Select OPTIONS from the BASIC UNIT INFO window and select CONOPS. This opens the CONOPS INFORMATION window.

(4) Change ADDRESS MISSIONS TO: PRIMARY (SECONDARY) and check the ACTIVE UNIT ORGANIZATION box. OK the window.

(5) Observe the medium level alert indicating the successful transition to CONOPS.

(6) Notify principal that unit organization is complete.

(b) The PRINCIPAL SATELLITES.

(1) Select the PRINCIPAL and EDIT.

(2) Select OPTIONS from the BASIC UNIT INFO window and select the CONOPS form. This opens the CONOPS INFORMATION window.

(3) Change ADDRESS MISSIONS TO: PRIMARY (SECONDARY) and check the ACTIVE UNIT ORGANIZATION box. OK the window.

(4) Observe the medium level alert indicating the successful transition to CONOPS.

(5) Notify principal that unit organization is complete.

(c) The PRINCIPAL waits for all units to report that unit organization is complete. The principal then:

(d) Clears all fire missions from IP's.

(e) Select the PRINCIPAL unit data and EDIT.

(f) Select OPTIONS from the BASIC UNIT INFO window and select CONOPS. This opens the CONOPS INFORMATION window.

(g) Change ADDRESS MISSIONS TO: PRIMARY (SECONDARY) and check ***both*** the ACTIVE UNIT ORGANIZATION box and the MISSION ROUTING box. OK the window.

(h) Observe the medium level alert indicating the successful transition to CONOPS.

(i) This action causes the computer at the principal to transmit the active target list to the backup.

(j) The BACKUP receives a medium level alert indicating the active target list has been received. The BACKUP displays the principal's CONOPS window and clicks MISSION ROUTING. A medium level alert is received indicating success in routing and a second indicating that the target list has been successfully merged.

(10) CONOPS are now established. The principal can now close station. All fire mission routes from the principal's immediate higher, subordinate and supporting units are altered to cause missions to be received at the backup. The backup also possesses the principal's active targets to allow these missions to be processed.

(11) **RECOVERY FROM CONOPS**

(a) PRINCIPAL station brings computer up and achieves communications with all required stations.

(b) PRINCIPAL notifies BACKUP that the principal is prepared to assume control of its own units.

(c) The BACKUP notifies the principal and all principal satellites of the time that CONOPS will be de-activated.

(d) At the established time the backup, the principal and all satellites edit the principal's unit data to display the CONOP INFORMATION window. Change the address missions to field back to PRINCIPAL.

(e) The backup alerts the observers, principal and satellite stations to change their comm to conform to normal operations. The backup should maintain the CONOPS comm configuration until CONOPS are completed.

(f) The BACKUP displays the MISSION INFO ROUTING window and adds the principal for the reception of MFRs. Change the SINCE TIME to the time the principal station gave up control.

(g) The backup notifies the principal that CONOPS are complete and then changes his comm configuration to that used during normal operations.

(h) Missions that are still active at the backup are automatically routed through that station until ended. If a separate comm configuration is used for CONOPS it must remain in effect until the backup has finished processing all fire missions from the principal satellites.

(i) The BACKUP transmits all geometry to the principal by transferring the current plan.

(j) The PRINCIPAL clicks 1 on the his own unit symbol to select the unit. The PRINCIPAL requests updates of all satellites by holding 3 and releasing on REQUEST STATUS. This action will update all unit data of subordinates, commanding, supporting and supported OPFACS.

B. **UNPLANNED CONOPS.** Unplanned CONOPS take place when the principal is unable to operate or is lost through battle damage.

(1) Based on unit SOP the determination is made that the principal is no longer operating and which backup assumes control.

(2) The BACKUP directs the principal satellites to prepare to enter CONOPS.

(3) Any comm configuration changes required are made and comm checks conducted.

(4) The backup makes any necessary data distribution changes.

(5) The backup waits for all satellites to report that they are ready to enter CONOPS. When notification has been received:

(a) The BACKUP:

1) Selects the PRINCIPAL unit data and EDIT.

2) Selects OPTIONS from the BASIC UNIT INFO window and select CONOPS. This opens the CONOPS INFORMATION window.

3) Change ADDRESS MISSIONS TO: PRIMARY (SECONDARY) and check ***both*** the ACTIVE UNIT ORGANIZATION box and the MISSION ROUTING box. OK the window.

4) Observe the medium level alert indicating the successful transition to CONOPS.

5) This action causes the backup's AFATDS to query the satellites for copies of their active target list. Each satellite does not automatically transmit his entire active target list. Instead, only those targets that would be associated with the principal are sent.

NOTE: *The stations that have been queried and the status of each query can be determined by examining the CONOPS RESPONSE window. (Click 1 on MISSION PROCESSING, CONOPS RESPONSES.)*

6) The backup waits until the medium level alert ACTIVE TARGET LIST HAS BEEN MERGED is received. This indicates that all satellites queried have responded. If comm can not be established with all satellites or for some other reason a satellite does not respond to the query then the merging of the target list does not take place. This is a decision point for the back-up that allows two options:

a) Wait for the satellite to respond, or

b) Manually merge the target lists from those stations that did respond. To manually merge these list the operator displays the CONOPS RESPONSES window by clicking 1 on MISSION PROCESSING, CONOP RESPONSES. On the CONOPS RESPONSES window click 1 on CONTINUE.

7) After the target lists have been merged, the BACKUP directs the satellite stations to execute CONOPS.

8) Upon direction of the backup, the SATELLITES:

a) Display the principal's BASIC UNIT INFO window by clicking 1 on the unit symbol and clicking and holding 3 to display the pop up menu. Release on EDIT. Or,

b) Click 1 on UNITS, EDIT, select the principal's unit ID from the list and click 1 on OK.

9) Display the CONOPS window of the principal by clicking 1 on OPTIONS, CONOPS.

a) Click 1 on ACTIVE UNIT ORGANIZATION.

b) A medium level alert is displayed indicating the successful transition to CONOPS.

C. **GENERAL CONOPS NOTES**

(1) All steps in planned and unplanned CONOPS must be executed in order to cause the desired behavior. This requires a team approach that can only be achieved by training and drill.

(2) All stations must be aware that the potential exists for messages to be lost during the transition to CONOPS, especially in unplanned CONOPS. Be prepared to respond to

alerts such as subsequent adjustments received that are not related to an active mission (that part of the active target list was not sent or the FO failed to make appropriate comm changes.)

(3) Assembly of the target list in planned or unplanned CONOPS can take a number of minutes depending on the quantity of targets and the speed of the communications medium. Use the CONOPS RESPONSE window to determine status of this operation.

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CHAPTER FIVE

GUIDANCE MANAGEMENT

1. **General**. Incoming fire requests, target reports and fire plan targets are checked against, and processed in accordance with, commander's guidance. Checks and processing will vary dependant on the unit role associated with the AFATDS OPFAC. It is important to remember that AFATDS makes no decisions. AFATDS applies the parameters entered in commander's guidance to incoming reports and requests to generate recommendations. These recommendations may be accepted or modified. To ensure rapid and efficient attack of targets and fire plan scheduling this guidance data must be managed.

2. **Guidance messages**. A number of guidance windows must be maintained to manage the fire support asset selection and tasking. Table 5-1 provides a synopsis of these windows and their functions. This is not a complete list but is sufficient to provide a basis for operations.

Table 5-1, GUIDANCE WINDOWS

Window	Key fields	Effect
Target selection standards	MAX TLE, MAX REPORT AGE, Reliability	Provides the maximum target location error and report age in minutes acceptable for assignment of a target report as a target. Each target category and type receive a value. Reliability is checked for target category and type against the sensor. TSS always applies to ATI target reports, but can also apply to calls for fire by selecting **Check Calls for Fire against TSS**.
High Value Target List	High Value Targets	Allows the assignment of desired effects (destroy, neutralize, suppress or specified), when to attack (immediate, as acquired, planned or excluded) and the target value. These factors are established for each target category. The value assigned for the category becomes a deciding factor in mission value for targets in each category.
Target Management Matrix	High Payoff Targets	High Payoff Targets are assigned by target type and each receive an entry for relative value, when to attack (immediate, as acquired, or planned) and effects desired is assigned. Additionally, IEW coordination and TDA alerts may be checked here.
	Non-High Payoff Targets	Non-High Payoff Targets may be assigned specific when to attack and desired effects values, by target type. Prior to assignment all target types assume default values from the High Value Target list. In addition, IEW coordination and TDA alerts may be checked here.
	Unassigned Targets	Unassigned targets may be moved into this block and assume the value given in the HVTL.
	Excluded Targets	Excluded targets are precluded from attack.

Table 5-1, GUIDANCE WINDOWS		
Window	**Key fields**	**Effect**
Mission Prioritization Window	Weight	Weight allows each of the four factors (TARGET TYPE, ON-CALL VALUE, PRIORITY OF FIRE VALUE and TARGET AREA OF INTEREST VALUE) that contribute to mission value to be weighed or ranked against each other. These along with the values set in the TMM and HVT windows determine the order of priority for stacking missions waiting to be fired.
	Priority of Fires	Priority of Fires ranks each maneuver unit. When a call for fire is received from a target acquisition asset that supports the ranked unit, the priority of fires value is used in determining the mission value of the fire mission. All subordinate and supported maneuver units should be ranked.
	Target Area of Interest.	Target areas of interest (TAIs) must be entered as geometries and are assigned a number from 1 to 99, prioritizing them. When a mission is located within a TAI the mission value is further added to reflecting this priority number.
	On-Call Targets	By selecting the on-call targets radio button an on-call target is assigned the value of 100. By not selecting the on-call radio button a value of 0 is used to compute the value assigned to a mission generated on a target in the on-call list.
	Fire Mission Cutoff Values	Fire mission cutoff values provides the minimum mission value that is acceptable for the attack of a target by a fire support asset. A value is established for each fire support asset available to the OPFAC. The lower the value, the more fire missions that may be assigned to the station. A lower value also allows expenditure of FS assets on lower value targets.
System Attack Parameters		This table allows the assignment of a unit in relation to an FS system. An entry in this guidance allows an option to be generated for that particular FS asset that is commanded or supports the entered unit and an FSE;FR is routed to that unit. Further, this function is designed for use with FS System Attack Analysis, although it can be used in any of the analysis levels. When in FS System attack Analysis units commanded by or supported, with no intermediate CP, will still be looked at in detailed attack analysis. The entries available are for FA cannon, rocket/missile, AIR, aviation, NSFS and MORTARS. Available, but should only be used at an FSCC/FFCC.

Table 5-1, GUIDANCE WINDOWS		
Window	**Key fields**	**Effect**
System Task List		The FS System Task List allows for the establishment of permissive or restrictive rules pertaining to the selection of available fire support assets. This guidance also allows ranking which controls the priority of selection of FS assets. Selection limitations may be entered by task number, target category/type, geometry, min/max radius and min/max strength. In addition engagement, or do not engage criteria may be entered by FS system type, a specific unit or a specific munition.
Munitions Restrictions		Restricts munitions selection for a unit that has already been added to the available unit list. Restriction criteria is entered for an FS system by munition category, min target size, target radius, target length and width, min distance from the flot, min strength, max TLE, max rounds, max volleys, ECOF %, countermeasures and environmental.
MORTAR/FA RESTRICT-IONS	UNIT WITH RESTRICTION	Units can be prevented from firing selected shells and/or fuzes. Units may also be assigned MAX FIRING UNITS/TARGET, the default is 0, and an entry must be made to allow massing. Units may also be assigned maximum volleys that can be fired by a single fire support unit. Lowering this value causes assets to mass fires more frequently to achieved desired effects. MAX VOLLEYS must be established at each OPFAC, for that OPFAC, to allow that OPFAC to mass FU's. In addition MAX VOLS must be established for all FU's to be effective.
Target Decay Time Window		This window allows entry of the number of hours and minutes a target is considered valid after it is reported. If these values are allowed to default to 0, targets of that specific category and type will be recommended for denial because the computer assumes the target is no longer valid as soon as it is reported.
Attack Methods Table	Mortar NSFS Air Aviation FA Cannon Rocket/ Missile	Allows the entry of specific munitions, volleys and size for all categories/types of targets. These entries cause attack analysis to override JMEMS or super quickie 2 for a solution. This function allows designating a target a “volleys” target or an “effects” target.

3. Responsibility. The responsibility for creating and disseminating guidance is an intrinsic element of command and thus resides with the force commander.

A. **Prior to establishment of the landing force ashore.** Prior to

establishment of the landing force ashore, the MAGTF FFCC creates guidance in accordance with the CATF and CLF intent, orders and verbal direction. This guidance is transmitted to the LFOC and subordinate FSCCs and fire support assets controlled by the MAGTF FFCC.

B. **After establishment of the landing force ashore.** After establishment of the landing force ashore, the GCE FSCC modifies his guidance in accordance with the CLF and GCE commander's intent, orders and verbal direction. This guidance is transmitted to the LFOC (AFLOAT) and subordinate FSCCs, FDCs and fire support assets.

C. **Changes to disseminated guidance.** Changes to guidance disseminated by higher echelons is necessary to allow the AFATDS computer to perform the functions of differing echelons and roles. Table 5-2 furnishes instructions for changes to guidance messages made at various stations of the MAGTF.

Table 5-2, PERMISSIBLE GUIDANCE CHANGES

MESSAGE	OPFAC	AUTHORIZED CHANGES
MSN PRIORITIZATION	MAGTF FFCC	Enter the PRIORITY OF FIRES field to reflect the rank of each subordinate unit that possesses a ZOR. Adjust FM CUTOFF VALUES so that AIR and NSFS can be assigned missions of value equal to that desired by the CATF/CLF without attacking targets of little value to the tactical situation. Change System Attack Parameters so that the AIR, Aviation, FA Cannon, Rocket/Missile and NGF units to which fire missions will be assigned are indicated.
	GCE FSCC	Enter the PRIORITY OF FIRES field to reflect the rank of each subordinate unit that possess a ZOR. Prior to the assumption of control by the CLF, FM CUTOFF FACTORS are per CATF guidance from the SACC. After CLF is established ashore, adjust FM CUTOFF VALUES so that AIR, Aviation, Rocket/Missile, NSFS, and ARTY can be assigned missions of value equal to that desired by the CLF without attacking targets of little value to the tactical situation. Change System Attack Parameters so that the Air, and NSFS units to which fire missions will be assigned are indicated.
	SUBORDINATE FSCC	Enter the PRIORITY OF FIRES field to reflect the rank of each subordinate unit. Alter fire mission cutoff factors so that least used or most perishable assets possess the lowest factor.
	REGT FDC	Same guidance as per GCE FSCC. DASC in System Attack Parameters.
	BN FDC	Same guidance as the supported unit. For tactical missions of DS, R, GSR this is the guidance provided by the supported regimental FSCC or reinforced FDC. For the GS mission guidance is the same as the regimental FDC.
	BTRY FDC	Do not alter guidance received from BN FDC.

Table 5-2, PERMISSIBLE GUIDANCE CHANGES		
MESSAGE	**OPFAC**	**AUTHORIZED CHANGES**
FA RESTRICTIONS	MAGTF FFCC	NONE.
	GCE FSCC	Enter GCE FSCC as UNIT and MAX VOL is maximum number of volleys any arty fire unit will fire and MAX FU equals number of firing batteries available in the supporting artillery unit.
	REGT FSCC	Enter RFSCC as UNIT and MAX FU equals number of firing batteries available in DS and R missions. Max Vols 3. Enter DS and R (if applicable) FA/CP as UNIT and MAX FU equals number of firing batteries available in DS and R missions. Max Vols 3. Enter each FU as UNIT and establish MAX VOL for each FU, Max FU/TGT is left blank.
	BN FSCC	NONE.
	REGT FDC	Enter the REGT FDC as the unit and MAX FU is the number of subordinate firing units, Max Vols 3. Enter subordinate FA/CPs as UNIT and MAX FU equals number of subordinate firing batteries available, Max Vols 3. Enter each FU as UNIT and establish Max Vols 3 for each FU, Max units/tgt is left blank.
	BN FDC	Enter BN FDC as UNIT and MAX FU equals number of firing batteries available in DS and R missions. Enter each FU as UNIT and establish Max Vols 3 for each FU, Max units/tgt is left blank.
	BTRY FDC	MAX VOL is as received from BN FDC; MAX FU is one.
MORTAR RESTRICTIONS	BN FSCC	Enter BN/FSCC as UNIT and MAX FU equals one. Enter Mort.PLT as UNIT and MAX VOLS.
ATTACK ANALYSIS	FSCCs	FS System attack analysis should be used at all FSCCs.
	FA/CPs and FDCs	Detailed attack analysis.

4. **Example guidance distribution.** The following is an example of the distribution of guidance and the changes made at various stations.

A. **Situation.** The landing force has transitioned control ashore and is changing the current situation guidance to conform to the latest situation. The RLT commander has assigned the focus of effort to 1/5. 1/5 is mounted in a combination of AAVs and LAVs and supported by a tank platoon. RLT OBJ 1 is designated TAI #1. To occupy RLT OBJ 1, 1/5 must defeat specific ANTI ARMOR and ANTI AIR target types. A direct support battalion of three M198 batteries and a reinforcing battalion with an additional three batteries of M198 howitzers are available for artillery support. A MAG is providing CAS and a GS NSFS ship is on station.

(1) **HVT LIST.** At the RLT FSCC target categories MANEUVER (which contains anti-armor weapons) and ADA (containing anti-air targets) are raised to values above all other targets. The HVT LIST is manually transmitted to the distribution lists SUBORDINATES and SUPPORTING.

(a) **BN FSCCs.** The battalion FSCCs save the HVT LIST.

(b) **BN FDC.** The battalion FDC saves the HVT LIST and manually transmits the data to the battery FDCs if they are fielded with AF ATDS.

(c) **BTRY FDCs.** The battery FDCs save the HVT LIST.

(2) **TMM**. The RLT FSCC places ANTI-ARMOR and ANTI-AIR targets in the high payoff target list and weighs them above other targets.

(a) **BN FSCCs.** The battalion FSCCs save the TMM.

(b) **BN FDC.** The battalion FDC saves the TMM and manually transmits the data to the battery FDCs, if they are fielded with AFATDS.

(c) **BTRY FDCs.** The battery FDCs save the TMM.

(3) Mission Prioritization.

(a) **The RLT FSCC.**

1) Weighs TARGET TYPE at 50, ON CALL TARGETS at 10, PRIORITY OF FIRE at 20 and TAIs at 20. This will cause the computer to determine mission value weighed heavily upon the HVT and HPT targets, less so if the target is from an asset supporting the priority of fire ZOR or from within the TAI geometry and even less if it is an on call target.

2) Fire mission cutoff factors are assigned at 10 for AIR, 15 for NSFS, 20 for FA, 10 for Aviation and 99 for mortars and Rkt/Msl. The RLT FSC has assigned these values to give AIR, and Aviation the most "perishable" FS asset, greater opportunity for target assignment followed by NSFS and ARTY. MORTARs and MLRS are assigned the maximum since it is not available at the regimental level.

3) Priority of Fires is assigned to 1/5 (the actual priority of fire) with a rank of 1, followed by 2/5 (supporting 1/5's attack) with 2, and 3/5 (in reserve) with a value of 3. This will cause fires to 1/5 to be assigned a higher mission value, thus, be processed in advance of the other battalions. 5th Marine Regiment would also receive a priority ranking.

4) TAI is entered with the TAI geometry for the RLT OBJ 1.

This will cause those targets located in this TAI to achieve the value based on the weight assigned in para. (a) above.

(b) **BN FSCCs.** The battalion FSCCs change the PRIORITY OF FIRES to reflect priorities within the battalion (by company), assign Fire Mission Cutoff factors to reflect his organic mortars and store the Mission Prioritization message.

(c) **BN FDC.** The battalion FDC saves the Mission Prioritization message and manually transmits the data to the battery FDCs, if they are fielded with AFATDS.

(d) **BTRY FDCs.** The battery FDCs save the TMM.

(4) **FA Preference Tables**. Only the battalion FDC enters this guidance. The batteries of the battalion in DS are assigned a rank of 1 for the attack of all targets. The R battalion name is assigned a rank of 2. This allows the DS battalion batteries to be considered before the R battalion is assigned to attack a target.

(5) **FA Restriction Tables.**

(a) **RLT FSCC.** The regimental FSCC establishes the FA Restrictions Table by entering the regimental FSCC's name in the UNIT WITH RESTRICTIONS field. MAX FIRE UNITS/TGT is set at the number of DS and R firing units available. The Bn. FDC's name is also entered in the UNIT WITH RESTRICTIONS field. MAX FIRE UNITS/TGT is set at the number of DS and R firing units available. Then enter FU's with restrictions MAX VOL's is set at 5. This allows massing on a target and no more than 5 volleys to be fired by any unit. This guidance is then transmitted to supporting/subordinate units.

(b) **BN FSCCs.** The battalion FSCCs change the UNIT WITH RESTRICTIONS to their own name and saves the message.

(c) **BN FDC.** The battalion FDC changes the UNIT WITH RESTRICTIONS to their own name and saves the message.

(d) **BTRY FDCs.** The battery FDCs change the UNIT WITH RESTRICTIONS to their own name and change MAX FIRE UNITS/TGT to 1, then store the message.

(6) **Mortar Restriction Tables.** The Mortar restrictions table is entered at the battalion FSCC. The battalion FSCC's name is entered in the UNIT WITH RESTRICTIONS field. MAX FIRE UNITS/TGT is set at 1 or two, depending on whether the platoon is split or not. The mortar platoon(s) is/are then entered in the UNITS WITH RESTRICTIONS with a MAX VOL's of 10.

5. **FIRE MISSION PROCESSING.** Fire mission processing is a key function of the fire support system. AFATDS uses guidance's, task organization and received mission information to select the appropriate fire support asset and to route the fire mission to the appropriate OPFACs. Processing through

multiple opfacs is usually required to move the mission from the requester to the shooter. The processing and route may be transparent to some of the OPFACs depending upon intervention criteria.

6. **INTERVENTION CRITERIA.**

A. **General.** AFATDS possesses the ability to use data base information to automatically process, coordinate and possibly deny fire missions without operator intervention. Intervention criteria allows operators to stop the automatic processing under given conditions for the purpose of review and change. Intervention criteria is comprised of a set of rules that govern this interruption of the automatic fire mission process. An almost endless number of intervention rules can be established. Each rule is built around nine categories of defining information.

(1) **BATTLE AREA** defined by geometries of deep, close and rear can be used to define the focus of the opfac for fire mission intervention.

(2) **ATTACK OPTION** allows rules to be constructed for specific fire support systems.

(3) **MISSION PRECEDENCE** causes the rule to apply to missions of the selected precedence (as acquired, immediate, priority) or up to a specified mission value.

(4) **TARGET TYPE** allows the selection of a particular target type.

(5) **TARGET FILTER** allows the rule to apply to failure of one of the six filters. These are target duplication, target selection standards, target buildup, IEW coordination, exclusion and coordination required.

(6) **ANALYSIS RESULT** causes missions to require intervention only when a specific recommended solution is determined. These results are SEND OTF, SEND FO, SEND FR or DENY.

(7) **Mission Type** allows the selection of a specific mission type.

(8) **Munitions Category** allows selection of a specific munitions group.

(9) **Caliber** allows selection of weapons systems by caliber.

It must be noted that these nine criteria be set in any combination to create a single rule. Multiple rules can be constructed.

B. **Default setup**. When the data base is initially constructed, a single default rule making all fire missions subject to intervention is incorporated. **Deleting this rule causes all fire missions to process automatically.**

***NOTE**: Missions assigned for attack by ATACMS are automatically displayed for operator intervention without regard to operator established intervention criteria.*

C. **Tracking fire missions**. When a fire mission is processed with no intervention each OPFAC can maintain situational awareness of active missions in two ways.

(1) Active fire missions can be displayed on an overlay. This will cause any received fire mission, regardless of intervention criteria, to appear on the graphics display as a bold target symbol. The operator can ascertain information about the target by clicking on the symbol that appears.

(2) All fire missions that are received are placed in the active target list until the mission has a mission fired report associated with it. At any time the operator can display mission information for any target. A mission for which air is recommended will transition from the active target list to become an ASR on the current ASL, when the recommendation is accepted.

(3) Either of the methods above allow the operator to display the target status window. The status window displays all fire mission messages received or transmitted for the mission in question. The status of the mission can also be requested or traced to obtain the current status of the mission at every station involved. Once an active mission becomes an ASR on the current ASL, it can no longer be traced.

(4) Fire requests and fire orders may be printed when they are received and/or transmitted. This is accomplished by making entries in the CONFIGURE MESSAGE SETUP. This function is accessed by selecting MESSAGES, CONFIGURE MESSAGE SETUP.

D. **INTERVENTION BY OPFAC**. This section recommends the intervention criteria that can be employed at each OPFAC.

(1) **Battalion FSCC**.

(a) Denied missions.

(b) Air and NSFS missions if these assets are available to the FSCC.

(c) Coordination required.

(2) **Regimental FSCC.**

(a) Denied missions.

(b) Coordination required.

(c) Any other rules as dictated by the FSC.

(3) **Division FSCC.**

(a) Denied missions.

(b) Coordination required.

(b) All fire missions in the rear battle area.

(c) All fire missions in the deep battle area.

(d) All air missions.

(4) **Battalion FDC**.

(a) All fire missions.

(5) **Regimental FDC**.

(a) All fire missions.

7. **ATTACK ANALYSIS.**

A. **Levels of Analysis.** The level of attack analysis can be altered at any OPFAC, including an FA CP/FDC. Now, with three levels of attack analysis all OPFACS have the choice of attack analysis levels, with the default depending on the OPFACs unit role. Detailed Attack analysis was intended for use by lower level FA CP/FDCs, Unit attack analysis was intended for higher level FA/CPs and FS System attack analysis was intended for use at FSCCs. The three attack analysis levels are explained in detail below.

(1) **Detailed Analysis.** Intended for use with lower level FA/CPs (i.e. Bn. FDC controlling batterys) Detailed attack analysis examines individual fire units based on range, angle T, ready status and ammunition on hand. It is performed for all FS assets that are commanded by or support an OPFAC, regardless of that OPFAC being an FSCC or FDC.

(2) **FS System Analysis.** FS system attack analysis is intended for use at FSCCs and allows the FSCC to do attack analysis on an FS asset without having detailed unit information on that asset. System Attack analysis is designed to be used in conjunction with System attack parameters and the System Task list. These guidances allow an FSCC to determine what assets other than their own they want to consider, and who to route them to. These guidances also permit or restrict an FS asset selection by target type, strength, and allow or disallow engagement by FS system and munitions. It is important to remember that attack analysis is conducted on an asset that is commanded or supports you directly, with no intermediate OPFAC, using detail attack analysis.

(3) **Unit Analysis**. Intended for use by higher level FA CP/FDCs on lower level FA CP/FDCs (i.e. Regt. FDC controlling Bn. FDCs). Unit attack analysis works using a unit rollup at an FA CP/FDC for a subordinate FA CP/FDC. For example, at the Regt. FDC the firing units of it’s subordinate Bns. Firing batterys need not be in the database. All the Regt. would need is the Bn. Unit data, and in the Bns. detailed unit information is a rollup of it’s firing batterys. This information is what is used to determine the Bns. capabilities. Unit analysis considers one of it’s FA CP/FDC capable if one of it’s batterys range fan covers the target. The specified munitions

must be onhand as per the unit rollup, response time is prior to operational until time and mission cutoff is met.

(a) It is recommended that FS System be used at FSCCs. However, it must be used in conjunction with not only System Attack Parameters, but also the System Task list. Detailed analysis should be used at every OPFAC not an FSCC, for the following reason.

(b) Unit level analysis will not fulfill the needs of the Marine Corps at this time, as it is not capable of massing.

8. **FIRE MISSION ROUTING**

A. **General.** Fire missions are routed through FSCCs to allow the selection of the optimum fire support asset, to provide a conduit for coordination and to increase situational awareness. The routing of the mission depends on the source, however the central hub of fire support is the FSCC.

B. **Battalion FSCC.** Fire missions that are requested by any observer are transmitted to the battalion FSCC. The observer unit information must indicate that the battalion FSCC that the observer reports to, is both the command and supported unit (COMMAND UNIT ID and SUPPORTED UNIT ID in the GENERAL UNIT INFORMATION window for the observer). The battalion FSCC normally possesses only organic mortars with which to engage the target. In any case, the battalion FSCC computer will consider only those fire support assets that are commanded by or support the battalion FSCC. In other words, those units stored at the FSCC and that indicate the battalion FSCC name as their COMMAND UNIT ID or SUPPORTED UNIT ID in the GENERAL UNIT INFORMATION window. If the mission is recommended for denial and IPs are not set, the denial is automatically transmitted to the requesting observer. If IPs are set, the mission appears in the intervention window and remains there until the operator takes action. When processing a mission for an AIR or NSFS asset and you are the controlling OPFAC, the mission data will print, not transmit, due to the fact there is no digital device at the mission thread's end. This functionality is enabled by selecting a system type of AIR or NSFS in the MUL for those units. If the battalion's organic mortars or any other FS assets commanded by or supporting them cannot adequately service the target, then either Unsupportable is selected sending the FSE;FR to their supported unit or the FSE;FR is sent automatically to the supported unit as a result of entries in the FS System Attack parameters.

(1) **Coordination requests** are transmitted to the agencies responsible for violated geometries or FSCMs. The requesting OPFAC will wait until the mission is approved to transmit the recommendation.

(2) **Mission Denied.** The mission may be denied either by failures of guidances or denial from an agency from which coordination was requested. The operator at the battalion FSCC would send the denial automatically to the originator.

(3) **Missions that do not require coordination** are transmitted to the regimental FSCC.

(4) **Missions requiring coordination with electronic warfare**

assets (as indicated by guidance's) will transmit a request for coordination to the IEW agency listed in the MISSION ROUTING INFO window. This message is formatted for an Army ASAS device and will fail transmission to a Marine device. Denial or approval will cause the mission to process as if coordination from another FSCC was required.

(5) **No Solution.** The computer may not be able to determine a solution. In this case the computer recommends "Denied, no capable option." The operator can select UNSUPPORTABLE causing the mission to be transmitted to the regimental FSCC (the battalion's support unit ID) in hope of finding additional assets.

(6) **Override.** The operator can override the computer solution and transmit any solution to any station.

C. **Regimental FSCC.** The regimental FSCC processes the mission and intervenes only on denied missions. It should be noted that the mission may not be assigned to the same asset as predicted by the battalion FSCC if the guidances at the regiment differ from those at the battalion. The mission may be:

(1) **Transmitted** to any fire support asset that the regimental FSCC determined a solution for, or routed to the Supported FSCC. If additional coordination is required, these requests are routed prior to transmitting the mission to the fire support asset.

(2) **Unsupportable.** The mission may be determined to be unsupportable. The operator can then transmit the mission, due to supported unit ID, to the division FSCC.

(3) **Override.** The operator can override the computer solution and transmit any solution to any station.

D. **Battalion FDC.** The battalion FDC processes the mission to subordinate battery FDCs. The battalion FDC always performs detailed attack analysis. Though several options may present themselves to the battalion FDC, one of three possible solutions will be selected by the battalion FDC.

(1) The fire mission can be passed to the fire unit(s) selected by the computer.

(2) The fire mission can be transmitted to any subordinate or reinforcing unit despite the computer selected option.

(3) **Unsupportable.** The mission can be returned to the regimental FSCC as unsupportable. This option should never be needed if the regimental FSCC is in detailed attack analysis, as solutions for all units are all processed using detailed unit information. However, if unsupportable is selected the following will happen. Missions returned to the regimental FSCC as unsupportable are reprocessed there and will most likely be transmitted to the division FSCC as unsupportable. This is the AFATDS method of "requesting reinforcing fires". Since the fire mission may be received again by the battalion FDC as part of a massed fire mission solution

from the regimental FDC, any mission that is returned to the regimental FDC as unsupportable is immediately, manually deleted from the active fire target list by the battalion FDC.

(4) Fire missions will never be denied at the battalion FDC.

E. **Division FSCC.** The division FSCC processes any fire missions received but intervenes on only a few. NSFS missions are printed and handed off to the representative of this assets (unless automated communications are available to the these units). Artillery missions are passed to the regimental FDC for processing. Air missions generate an ASR in the current ASL when they are transmitted to the DASC.

F. **Regimental FDC.** The regimental FDC processes received fire missions using detailed attack analysis. Orders to fire (OTFs) are passed to the subordinate battalion FDCs. Should a mission not be supportable it is returned as an unsupportable mission to the division FSCC, not denied by the regimental FDC.

9. **RADAR FIRE MISSIONS AND THE TPC.**

A. **General.** Radars held in general support missions are controlled by the TPC. The TPC will process all fire missions to the Regimental FDC by clicking unsupportable, since TPC is supporting the regimental FDC missions are then automatically passed to them. The mission may also be automatically transmitted to the Regt. FDC by entering them in the "route to" field of the System Attack parameters.

B. **Coordination.** All radar fire missions not plotting between the CFL and FSCL require coordination since they will plot in the zone of a maneuver unit, or cross the FSCL. Coordination is normally effected by coordination requests automatically generated at the regimental FDC not at the TPC since unsupportable missions do not require coordination until an attack option is determined.

C. **Radars assigned direct support missions to the battalion FDCs** are directly linked. Command and supported relationships of these radars are changed to reflect this and the fire missions transmitted are processed by the battalion FDC in the same fashion as FO request fire missions.

CHAPTER SIX

DATA DISTRIBUTION

DATA DISTRIBUTON. Data distribution is the automatic retransmission of information between AFATDS OPFACs. This distribution is controlled by a combination of lists and associated criteria. The lists are composed of unit IDs grouped together and each list is associated with criteria. The criteria acts as triggers that must be "tripped" to cause the associated data to be transmitted.

1. **DISTRIBUTION SETUP.** Each station creates a set of data distribution rules to accommodate their operations.

A. **BATTALION FSCC**.

Table 6-1, BATTALION FSCC DATA DISTRIBUTION

MESSAGE	THIS UNIT	HIGHER	SUBORDINATE	OTHER
FSCMS	LIST A		LIST A	
BOUNDRY LNES	LIST A			
SITUATIONAL GRAPHICS	LIST A			
BATTLE AREAS				
NBC GRAPHICS	LIST A		LIST A	
SENSOR ZONES				
MOVEMENT GRAPHICS	PRIMARY CONOPS			
FASCAM AREA				
TAI	PRIMARY CONOPS			
FLOT	LIST A			
ZOR	LIST A			
PAH TAH				
BASIC UNIT	LIST A		LIST A	
GEN UNIT	LIST A		LIST A	
EQUIPMENT SUMMARY	PRIMARY CONOPS		LIST A	
WEAPONS SUMMARY				
WEAPONS DETAILED			LIST A	
AMMO SUMMARY				
AMMO DETAILED			LIST A	
FUEL INFO			LIST A	
ENEMY UNIT	LIST A		LIST A	
LIST: A	REGT FSCC, BN FWD			
DEFAULT LIST: PRIMARY CONOPS	BN FSCC FWD			

(1) **LISTS.** The battalion FSCC maintains two lists, one is created and one is a default list as depicted in table 6-1.

(2) **CRITERIA.** Criterion for each list is ANY CHANGE.

B. **REGIMENTAL FSCC**.

Table 6-2, REGIMENTAL FSCC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A	LIST C		LIST A
BOUNDRY LINES	LIST A	LIST C	LIST C	
SITUATIONAL GRAPHICS	LIST A	LIST C	LIST C	
BATTLE AREAS	LIST A	LIST C		LIST A
NBC GRAPHICS	LIST A	LIST C	LIST A	LIST A
SENSOR ZONES			LIST C	LIST A
MOVEMENT GRAPHICS	LIST E			
FASCM AREA		LIST C	LIST A	LIST A
TAI	LIST E			
FLOT	LIST A	LIST C	LIST E	
ZOR	LIST A	LIST C	LIST C	LIST A
PAH TAH		LIST C	HIGHER	
BASIC UNIT	LIST A	LIST C	LIST C	LIST D
GEN UNIT	LIST A	LIST C	LIST C	LIST D
EQUIPMENT SUMMARY	LIST B			
WEAPONS SUMMARY	LIST B		LIST C	
WEAPONS DETAILED	LIST B		LIST C	
AMMO SUMMARY	LIST B		LIST C	SUBORDINATES
AMMO DETAILED	LIST B		LIST C	SUBORDINATES
FUEL INFO	LIST B			
ENEMY UNIT	LIST A			
LIST A	DIV FSCC, DS BN FDC, BN FSCC, REGT FWD			
LIST B	REGT FWD, DIV FSCC			
LIST C	BN FSCC, DS BN FDC, REGT FWD			
HIGHER	DIV FSCC			
LIST D	DIV FSCC, DS BN FDC			
LIST E	DIV FSCC, DS BN FDC, REGT FWD			
LIST F	DS BN FDC, BN FSCC, REGT FWD			
DEFAULT LIST SUBORDINATES	BN FSCCs			

(1) **LISTS.** The regimental FSCC maintains 8 distribution lists. Six of these lists are created and two are default lists as depicted in table 6-2.

(2) **CRITERIA**. All data is transmitted using criterion ANY CHANGE.

C. **DIVISION FSCC**.

Table 6-3, DIVISION FSCC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A	LIST B	LIST A	LIST A
BOUNDRY LINES	LIST A	LIST B	LIST A	
SITUATIONAL GRAPHICS	LIST A	LIST B	LIST A	LIST A
BATTLE AREAS	LIST A	LIST B		LIST A
NBC GRAPHICS	LIST A	LIST B	LIST A	LIST A
SENSOR ZONES			LIST A	LIST A
MOVEMENT GRAPHICS	LIST A	LIST B	LIST A	
FASCAM AREAS		LIST B	LIST A	
TAI	LIST A	LIST B		
FLOT	LIST A	LIST B	LIST A	
ZOR	LIST A	LIST B	LIST A	LIST A
PAH TAH		LIST B	LIST A	LIST A
BASIC UNIT	LIST A	LIST B	LIST A	LIST A
GEN UNIT	LIST A	LIST B	LIST A	LIST A
EQUIPMENT SUMMARY	LIST A			
WEAPONS SUMMARY			LIST A	
WEAPONS DETAILED				
AMMO SUMMARY			LIST A	
AMMO DETAILED				
FUEL INFO	LIST A			
ENEMY UNIT	LIST A			
LIST A	REGT FSCC, REGT FDC, DIV FWD, MEF FSCC, DASC			
LIST B	REGT FSCC, REGT FDC, DIV FWD			

(1) **LISTS.** The division FSCC creates two lists as depicted in table 6-3.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

D. **MAGTF FFCC.**

Table 6-4, MEF FSCC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A			LIST A
BOUNDRY LINES	LIST A			
SITUATIONAL GRAPHICS	LIST A			
BATTLE AREAS	LIST A			LIST A
NBC GRAPHICS	LIST A			LIST A
SENSOR ZONES				LIST A
MOVEMENT GRAPHICS	LIST A			LIST A
FASCAM AREA	LIST A			LIST A
TAI				
FLOT	LIST A			LIST A
ZOR	LIST A			LIST A
PAH TAH	LIST A			LIST A
BASIC UNIT	LIST A			LIST A
GEN UNIT	LIST A			LIST A
EQUIPMENT SUMMARY	LIST A			
WEAPONS SUMMARY				
WEAPONS DETAILED				
AMMO SUMMARY				
AMMO DETAILED				
FUEL INFO				
ENEMY UNIT				
LIST A	DIV FSCC, MEF FWD, SACC, TACC			

(1) **LISTS.** The MAGTF FSCC creates one list as depicted in table 6-4.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

E. TACC.

Table 6-5, TACC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A	LIST B	LIST A	LIST A
BOUNDRY LINES	LIST A	LIST B	LIST A	
SITUATIONAL GRAPHICS	LIST A	LIST B	LIST A	LIST A
BATTLE AREAS	LIST A	LIST B		LIST A
NBC GRAPHICS	LIST A	LIST B	LIST A	LIST A
SENSOR ZONES			LIST A	LIST A
MOVEMENT GRAPHICS	LIST A	LIST B	LIST A	
FASCAM AREAS		LIST B	LIST A	
TAI	LIST A	LIST B		
FLOT	LIST A	LIST B	LIST A	
ZOR	LIST A	LIST B	LIST A	LIST A
PAH TAH		LIST B	LIST A	LIST A
BASIC UNIT	LIST A	LIST B	LIST A	LIST A
GEN UNIT	LIST A	LIST B	LIST A	LIST A
EQUIPMENT SUMMARY	LIST A			
WEAPONS SUMMARY	LIST A		LIST A	LIST A
WEAPONS DETAILED				
AMMO SUMMARY	LIST A		LIST A	LIST A
AMMO DETAILED				
FUEL INFO	LIST A		LIST A	LIST A
ENEMY UNIT	LIST A		LIST A	LIST A
LIST A	TAOC, DASC, MEF			
LIST B	TAOC, DASC			

(1) **LISTS.** The TACC creates two lists as depicted in table 6-5.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

F. **DASC.**

Table 6-6, DASC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A	LIST B	LIST A	LIST A
BOUNDRY LINES	LIST A	LIST B	LIST A	
SITUATIONAL GRAPHICS	LIST A	LIST B	LIST A	LIST A
BATTLE AREAS	LIST A	LIST B		LIST A
NBC GRAPHICS	LIST A	LIST B	LIST A	LIST A
SENSOR ZONES			LIST A	LIST A
MOVEMENT GRAPHICS	LIST A	LIST B	LIST A	
FASCAM AREAS		LIST B	LIST A	
TAI	LIST A	LIST B		
FLOT	LIST A	LIST B	LIST A	
ZOR	LIST A	LIST B	LIST A	LIST A
PAH TAH		LIST B	LIST A	LIST A
BASIC UNIT	LIST A	LIST B	LIST A	LIST A
GEN UNIT	LIST A	LIST B	LIST A	LIST A
EQUIPMENT SUMMARY	LIST A			
WEAPONS SUMMARY	LIST A		LIST A	LIST A
WEAPONS DETAILED				
AMMO SUMMARY	LIST A		LIST A	LIST A
AMMO DETAILED				
FUEL INFO	LIST A		LIST A	LIST A
ENEMY UNIT	LIST A		LIST A	LIST A
LIST A	TACC, DASC FWD, DIV			
LIST B	TACC, DASC FWD			

(1) **LISTS.** The DASC creates two lists as depicted in table 6-6.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

G. **REGIMENTAL FDC.**

Table 6-7, REGIMENTAL FDC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS		LIST B	LIST A	SUBORDINATES
BOUNDRY LINES		LIST B	SUBORDINATES	
SITUATIONAL GRAPHICS		LIST B		
BATTLE AREAS		LIST B		LIST B
NBC GRAPHICS	LIST A	LIST B	LIST A	SUBORDINATES
SENSOR ZONES			LIST A	
MOVEMENT GRAPHICS	LIST A	LIST B	LIST C	
FASCAM AREA	LIST A		LIST A	
TAI		LIST B		
FLOT		LIST B		SUBORDINATES
ZOR		LIST B		SUBORDINATES
PAH TAH	LIST A		LIST A	
BASIC UNIT	LIST A	LIST B	LIST A	LIST C
GEN UNIT	LIST A	LIST B	LIST A	LIST C
EQUIPMENT SUMMARY	LIST A		LIST C	
WEAPONS SUMMARY				LIST C
WEAPONS DETAILED			LIST A	LIST C
AMMO SUMMARY				LIST C
AMMO DETAILED			LIST A	LIST C
FUEL INFOEQUIP	LIST A		LIST C	
ENEMY UNIT	LIST A	LIST B	LIST C	LIST A
LIST A	DIV FSCC, BN FDCs, REGT FWD, TPC			
LIST B	BN FDCs, REGT FWD, TPC			
LIST C	DIV FSCC, REGT FWD, TPC			
DEFAULT LIST SUBORDINATES	Bn. FDCs and TPC			

(1) **LISTS.** The REGIMENTAL FDC maintains four lists, creating three lists and utilizing one default list, as depicted as in table 6-7.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

H. **BATTALION FDC.**

Table 6-8, DS BATTALION FDC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS		LIST B		LIST B
BOUNDRY LINES		LIST B		LIST B
SITUATION GRAPHICS		LIST B		LIST B
BATTLE AREAS		LIST B		
NBC GRAPHICS	LIST A	LIST B	LIST C	LIST B
SENSOR ZONES		LIST F	LIST D	
MOVEMENT GRAPHICS	LIST A	LIST E		
FASCAM AREA	LIST A	LIST B	LIST A	LIST B
TAI		LIST F		LIST F
FLOT		LIST B		LIST B
ZOR		LIST B		LIST B
PAH TAH		LIST E		LIST E
BASIC UNIT	LIST C	LIST B	LIST C	LIST B
GEN UNIT	LIST C	LIST E	LIST C	LIST B
EQUIPMENT SUMMARY	LIST D		LIST D	
WEAPONS SUMMARY	SUPPORTED		LIST G	
WEAPONS DETAILED	LIST D		LIST F	
AMMO SUMMARY	LIST A		LIST F	
AMMO DETAILED	LIST D		LIST F	
FUEL INFO	LIST D		LIST D	
ENEMY UNIT	LIST B	LIST F	LIST F	
DEFAULT LIST SUPPORTED	Supported Regt FSCC			
LIST A	REGT FSCC, BN FWD, R BN, GSR BN			
LIST B	BTRY FDCs, BN FWD, R BN, GSR BN			
LIST C	REGT FDC, REGT FSCC, BN FWD, R BN, GSR BN			
LIST D	REGT FDC, BN FWD, R BN, GSR BN			
LIST E	BN FWD, R BN, GSR BN			
LIST F	REGT FSCC, BN FWD, REGT FDC			

(1) **LISTS.** The BATTALION FDC maintains seven lists, creating six and utilizing one default list, as depicted in table 6-8.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

I. **BATTERY FDC.**

Table 6-9, BATTERY FDC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS				
BOUNDRY LINES				
SITUATION GRAPHICS				
BATTLE AREAS				
NBC GRAPHICS	HIGHER			
SENSOR ZONES				
MOVEMENT GRAPHICS	HIGHER			
FASCAM AREA	HIGHER			
TAI				
FLOT				SUBORDINATES
ZOR				SUBORDINATES
PAH TAH				
BASIC UNIT	HIGHER			
GEN UNIT	HIGHER			
EQUIPMENT SUMMARY	HIGHER			
WEAPONS SUMMARY				
WEAPONS DETAILED	HIGHER			
AMMO SUMMARY				
AMMO DETAILED	HIGHER			
FUEL INFO	HIGHER			
ENEMY UNIT	HIGHER			
DEFAULT LIST: HIGHER	BN FDC			
DEFAULT LIST: SUBORDINATES	BCS			

(1) **LISTS.** The BATTERY FDC uses HIGHER and SUBORDINATES, two of their default lists as described as table 6-9.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

J. **TPC.**

Table 6-10, TPC DATA DISTRIBUTION				
MESSAGE	**THIS UNIT**	**HIGHER**	**SUBORDINATE**	**OTHER**
FSCMS	LIST A			
BOUNDRY LINES				
SITUATION GRAPHICS				
BATTLE AREAS				
NBC GRAPHICS				
SENSOR ZONES	LIST A			
MOVEMENT GRAPHICS				
FASCAM AREAS				
TAI				
FLOT				
ZOR				
PAH TAH				
BASIC UNIT	LIST A		LIST A	
GEN UNIT	LIST A		LIST A	
EQUIPMENT SUMMARY	LIST A			
WEAPONS SUMMARY				
WEAPONS DETAILED				
AMMO SUMMARY				
AMMO DETAILED				
FUEL INFO	LIST A			
ENEMY UNIT				
LIST A	REGT FDC, TPC FWD			

(1) **LISTS.** The TPC creates one list as depicted in table 6-10.

(2) **CRITERIA.** All data is transmitted using criterion ANY CHANGE.

2. **THE DISTRIBUTION FUNCTION.** Data distribution is governed by the following rules.

A. **GUIDANCES** are not automatically distributed. This information is transmitted manually from the particular guidance window.

B. **MET DATA** is not distributed via data distribution. Instead meteorological messages are transmitted to stations based on the MET UNIT ID field in the general unit info window.

C. **THIS UNIT DATA**, data changed at an OPFAC, is not distributed automatically. Geometry and unit data entered at that opfac is manually transmitted by the operator. The destination is the appropriate distribution list.

3. **METEOROLOGICAL DATA DISTRIBUTION.**

A. **General.** Meteorological messages, as mentioned above, are not automatically transmitted by the distribution process. Instead, these messages are disseminated by the use of the MET UNIT ID field found in a unit's general information window. When met data is received at a given station, unseen to the operator, the met message indicates the original source of the met. When the receiving station makes the received Met "Current" it searches its current situation unit file examining each stored unit's MET UNIT ID field. If the MET UNIT ID is the same as that from which the message was received the OPFAC will transmit the met to those units. In other words, the receiver of a met relays that met to all stations in his data base that have the MET UNIT ID the same as the original source of the met.

B. When unit data is received via data distribution the MET UNIT ID is blank. This field must be entered by the receiving station if that OPFAC has a need to distribute the met to the stored unit.

C. **MET DISTRIBUTION SETUP.** Met messages are transmitted between artillery units. This can be accomplished in one of two ways.

(1) **MET STATIONS** held at the regimental level. If all met sections are controlled and positioned by the regimental FDC these stations transmit their data to the regimental TPC via the MET/RADAR net. The TPC, at the direction of the MET officer, establishes routing to the battalion FDCs. This routing is based on time-space validity concerns that govern the positioning of the met stations and the timing of met delivery as well as the missions of the artillery battalions. TPC disseminates met from specific met stations to the DS and GS artillery battalion FDCs. The reinforced battalion transmits the met to the reinforcing battalion.

(a) **EXAMPLE**: 10TH Marines has two met stations established.
MET 01 is positioned to support 1/10, a DS battalion. MET 02 is positioned to support 5/10, a GS unit. The TPC enters the general unit data for each battalion and assigns the MET UNIT ID for the correct supporting MET section.

(b) When the met message is transmitted to the TPC it is automatically relayed to the battalion FDCs based on the entry in the MET UNIT ID for that battalion as it is stored at the TPC.

(c) At the battalion FDCs the MET UNIT ID for each subordinate
battery and for the reinforcing battalion FDC is entered with the name of the met station that supports the battalion. This causes the met to be transmitted to the battery FDCs.

(2) **MET STATIONS** attached to battalions. If met stations are attached to battalion FDCs, then the battalion FDC receives the met message and disseminates this to the battery FDCs as described above.

4. **RECEIVED MESSAGE SETUP.**

A. **General.** By default, AFATDS processes all messages received, taking action on each message automatically. This processing can be changed if required to any of the following:

(1) **ROUTE** causes the computer to relay the received messages of the type specified to selected stations without processing the message.

(2) **ROUTE AND PROCESS** causes the computer to take action on the received message as well as relay the message to the specified destinations (currently this function is not enabled).

(3) **DEFER** causes the computer to place the received message in the deferred message log where it is stored until the operator elects to process the message.

Table 6-11 describes changes to the default received message setup used during division level operations.

NOTE: Although it is possible to set up ATI messages to route that function is not working, in this version of software, therefore the procedures for routing ATI messages have been removed.

Table 6-11, Changes to Configure Message Setup for Division Operations

STATION	MESSAGE	SETUP
FU	TARGET INDICATOR	Route to TPC.
GSR, R AND DS BN	TARGET INDICATOR	Route to TPC.
GS BN FDC	TARGET INDICATOR	Route to TPC.
REGT FDC	TARGET INDICATOR	Route to TPC.
BN FSCC	TARGET INDICATOR	Route to TPC.
REGT FSCC	TARGET INDICATOR	Route to TPC.
DIV FSCC	TARGET INDICATOR	Route to TPC.

B. Table 6-12 provides changes to the default received message setup used in MEB level operations.

Table 6-12, Changes to Configure Message Setup for MEB Operations

STATION	MESSAGE	SETUP
FU	TARGET INDICATOR	Route to Bn. FDC.
GSR, R AND DS BN	TARGET INDICATOR	Route to Bn. FDC.
GS BN FDC	TARGET INDICATOR	Route to Bn. FDC.
BN FDC	TARGET INDICATOR	Route to Bn. FDC.

CHAPTER SEVEN

FIRE SUPPORT TARGETING

1. **GENERAL.** Target information is maintained at AFATDS to provide a database of information that can be used for three purposes.

A. Target information that is sufficiently identified and meets the Commander's criteria are used to engage targets in the current situation.

B. Intelligence reports that are not sufficiently developed to yield targets are stored and evaluated against existing and incoming target information to produce targets.

C. Targets that do not merit engagement are stored as potential fire plan targets or inactive targets.

2. **CAPABILITIES.** System capabilities with regard to targets are limited, however, with the addition of the search, query, sort and add data field capabilities AFATDS target processing becomes more capable. Since AFATDS is a fire support system and not an intelligence system, The common enemy picture for Situational Awareness (SA) will take place at the Intelligence All Sources (IAS) terminal to be disseminated to TCO (Tactical Combat Operations) and subsequently to the AFATDS. AFATDS currently allows:

A. The reception of target information in the form of Artillery Target Intelligence (ATI), Air Support Requests (ASRs) and Fire Request (FR) messages.

B. The transmission of Fire Support Element Fire Requests (FSE;FRs), Orders To Fire (OTFs) and Fire Orders (FOs)to other AFATDS and TACFIRE devices. This function facilitates fire mission processing rather than actual targeting.

C. The comparison of FR and ATI messages to guidance to determine how the target should be processed in the current situation.

D. The transmission of ATI messages composed at the AFATDS. These messages are transmitted only to US Army All Source Analysis System (ASAS) and Maneuver Control System (MCS). Attempting to transmit these messages automatically stores the target intelligence in the PLANNED target list.

E. The correlation of undeveloped target information to generate targets. This processing is referred to as suspect target processing.

F. The correlation and development of targetable data from the intersection of three target indicators of similar or same type. Target indicators are any directional target data such as shell reports and flash-to-bang reports.

G. The correlation of target indicator data with any existing target of the same type that plots along the ray from the target.

H. The transmission of ASRs from AFATDS to other AFATDS and to Contingency Theatre Air Planning System (CTAPS) or Theatre Battle Management Core System (TBMCS).

I. The correlation of an FR to update or divert a confirmed oncall ASR.

3. TARGET LISTS

A. **General:** AFATDS automatically creates seven target lists with the capability of adding one or more named target lists and a target indicator list in the current situation, for the storage of target data. As mentioned above, AFATDS allows the establishment of named target lists in either the current or planned situations.

(1) CURRENT SITUATION TARGET LISTS

(a) ACTIVE TARGET LIST. The active target list contains only those targets that are currently being processed as fire missions. These targets are automatically removed from the list when the Mission Fired Report (MFR) is received or entered from/at the controlling OPFAC. ***The operator should under no circumstance add targets to this list by means other than normal fire mission processing nor should this list be used for fire plan targeting.***

(b) INACTIVE TARGET LIST. Targets are entered into the inactive target list in two ways. Targets that were processed as fire missions and have had MFRs associated with them. ATI reports that passed target selection standards, are not entered into the TMM with a precedence of planned, and are not high payoff targets.

(c) PLANNED TARGET LIST. The planned target list receives those ATI generated targets that pass TSS, and are listed in the target management matrix with a precedence of planned. All ATI messages that are transmitted to an ASAS (will fail)or any target built as new will also reside in the planned target list.

(d) ONCALL TARGET LIST. The oncall target list receives all targets that are recorded as target at the end of fire missions, transmitted from another OPFAC as an oncall target, added from the graphical popup menu “ADD TO TARGET LIST” or built as new from the oncall target list.

(e) AMPHIBIOUS TASK FORCE TARGET LIST (ATF). The ATF target list contains targets selected for attack by the CATF and may only be received from another AFATDS. This target list is editable only by the originator.

(f) AIR SUPPORT LIST (ASL). The ASL contains all immediate and preplanned ASRs for the designated air day. These ASRs may have been received from another AFATDS, created automatically as a result of executing an air option, added from the MIDB Facilities window or built new in the ASL.

(g) SUSPECT TARGET LIST. The suspect target list stores targets that fail target selection standards and acts as a pool of target information that may be combined to produce targetable information. This processing can be turned on or off by the operator.

(h) TARGET INDICATOR LIST. The target indicator list contains shell reports and other directional target information. If target indicator processing is turned on and three intersecting rays for similar target indicators produce a suspect target. That target is then processed and those target indicators are deleted.

(i) NEW TARGET LIST. A new target list may be created in the current situation. This target list may be named as per the discretion of the user and may contain targets from any of the current or planned target lists.

B. PLANNED SITUATION TARGET LISTS

(1) MASTER TARGET LIST. The master target list is created automatically when a planned situation is built. This list assumes the name of the "Plan Alias" when this field is entered in the basic plan information window of a plan. If this field is not entered, the master plan target list assumes a numerical default. This list is automatically updated with each new target as well as the contents of new target lists added to the plan. Any time a target is added to a plan it will be added to the master plan target list. If a the same target is added to numerous target lists or fire plans the target will appear that many times in the master plan target list. This is the way the master plan target list was designed to work and "check for duplicates must be utilized frequently with this list.

(2) OPERATOR CREATED LISTS. The AFATDS operator can add target lists by creating and naming these in a planned situation as well as the current. The targets added to these lists are also automatically stored in the master target list of the plan and targets may also be copied to the new list from the Master Plan Target list. There is currently a problem with AFATDS software, in that the first time a New target list is created, and the desire is to copy targets from the Master Plan Target List, The Master Plan Target List is not available for selection. The workaround for this problem is to create a new target in the New (Named) target list. After there is one target stored in the new target list, the Master Plan Target List is then available for selection. This problem was identified too late in the development of A98 software and is scheduled to be fixed in the A99 software release.

4. RESPONSIBILITY

GENERAL As mentioned above, intelligence reports are expected to flow through the IAS. At this time there is no requirement for the IAS and AFATDS to exchange data, however, with the IAS being a JMCIS based system, like the TCO, there is a limited data exchange capability. At this time MIDB files can not be passed from the IAS to AFATDS, however, there is a procedure in place for this exchange. AFATDS and the Tactical Combat Operations, (TCO) a Joint Maritime Command Information System (JMCIS) or as it is now called a Global Command and Control Matitime System (GCCS-M) type system, exchange geometries, friendly and enemy unit data. The TCO and IAS are both GCCS-M type systems and share data. The IAS with access to the Modernized Integrated Data Base (MIDB) will supply the enemy picture to the TCO

and the TCO will supply the friendly and enemy picture to AFATDS. Additionally, MIDB files may be received from TBMCS. Target reports must also be processed at AFATDS, target reports will be received at AFATDS from TACFIRE type devices or a DACT. Currently, ATI target information only processes at AFATDS. Although route is available and another AFATDS may be selected to route to, this functionality does not work. These target reports are processed in AFATDS in the following manner:

ATI report fails TSS **ATI report passes TSS**
Suspect target list. Planned precedence?
YES **NO**
To Planned target list. HPT?
YES **NO**
Active target list. Inactive target list.

Any target processed to the active target list will undergo attack analysis. Any target processed to the inactive target list will remain there, with a status of In Process. Any target processed to the planned target list will reside there for planning purposes and any target processed to the suspect list will reside there for comparison against other suspect targets. All units will have suspect processing on and only the TPC will have target indicator processing on. Should these targets require routing to their supported unit, a search of the inactive target list for targets in process can be made by the supported unit. These targets could then be added to any target list desired. A search may also be made, for planning purposes, of the planned target list. Another option would be to copy these lists into a named target list for transmission. For example the Bn. FSCC (1/7)is required to transmit ATI reports, not being fired to Regt (7MR). The Bn. FSCC would copy all planned and inactive targets, with a status of In Process into a new target list named as 1a7ATI and transmit them to Regt, deleting them afterwards.

A. MAGTF FFCC. The MAGTF FFCC processes and stores all target reports received. All target indicators are routed to the TPC for processing. The MAGTF FFCC also creates any additional lists required in the current situation plus an ASL for the three day air cycle.

B. DIVISION FSCC. The division FSCC processes and stores all target reports received. All target indicators are routed to the TPC for processing. The division FSCC also creates any additional lists required plus an ASL for the three day air cycle.

C. REGIMENTAL FSCC. The regimental FSCC processes and stores all target data received. All target indicators are routed to the TPC for processing. The regimental FSCC also creates any additional lists required plus an ASL for the three day air cycle.

D. BATTALION FSCC. The battalion FSCC processes and stores all target data received. All target indicators are routed to the TPC for processing. The battalion FSCC also creates any additional lists required plus an ASL for the three day air cycle if required.

E. ARTILLERY TPC. The TPC is responsible for counterfire processing and has target indicator processing turned on. The artillery TPC processes and stores all target data received. The TPC also creates any additional

lists required.

5. TARGET INFORMATION DISSEMINATION IN THE CURRENT PLAN

A. PURPOSE. The purpose of target dissemination is to ensure that targetable information is provided to those stations that require it or whose operations could be affected by it. All target indicators are routed to the artillery TPC (see tables 7-1 and 7-2).

B.BOTTOM UP FLOW. Target information can be generated at any station that possesses a TACFIRE or AFATDS device. This information must be transmitted to other stations via a named target list if required.

(1) Table 7-1 describes the flow of target information in a division level operation.

Table 7-1, Bottom-up Target Information Flow in a DIVISION LEVEL OPERATION

STEP	STATION	ACTION
1	FO	FO transmits ATI GRID, POLAR or SHELLREP message from the DMS (DACT) to his supported battalion FSCC.
2	BN FSCC	BN FSCC receives and processes all ATI MESSAGES. Target indicators are routed to the TPC, due to the CONFIGURE MESSAGE SETUP alterations.
3	REGT FSCC	REGT FSCC receives and processes all ATI messages. The TGT INDICATOR information is automatically routed to the TPC due to the CONFIGURE MESSAGE SETUP alterations.
4	DIV FSCC	DIV FSCC receives and processes all ATI messages. The TGT INDICATOR information is automatically routed to the TPC due to the CONFIGURE MESSAGE SETUP alterations.
5	FU FDC	The fire unit composes and transmits the ATI;CDR, ATI;AZR or ATI;SHR from the BCS/FDS to the FU AFATDS. The AFATDS routes the TGT INDICATOR (ATI;SHR) to the TPC, due to the CONFIGURE MESSAGE SETUP alterations. All planned and inactive, in process targets are copied into a named target list and transmitted to the Bn. FDC. The suspect target list is also transmitted to the Bn. FDC.
6	DS BN FDC	DS BN FDC builds all ATI MESSAGES into a named target list and transmits to the REGT FSCC. DS BN FDC routes TGT INDICATORS to the TPC due to the CONFIGURE MESSAGE SETUP.
7	GSR FDC	GSR FDC builds all ATI MESSAGES into a named list and transmits to the supported FSCC. Target indicators are routed to the TPC, due to the CONFIGURE MESSAGE SETUP.
	R FDC	R FDC builds all ATI MESSAGES into a named list and transmits to the supported FDC. Target indicators are routed to the TPC, due to the CONFIGURE MESSAGE SETUP.
8	GS FDC	GS FDC builds all ATI MESSAGES into a named target list and transmits to the supported FSCC. Target indicators are routed to the TPC, due to the CONFIGURE MESSAGE SETUP.

	Table 7-1, Bottom-up Target Information Flow in a DIVISION LEVEL OPERATION	
STEP	**STATION**	**ACTION**
9	REGT FDC	REGT FDC routes TGT INDICATORS to the TPC due to the CONFIGURE MESSAGE SETUP. REGT FDC builds ATI MESSAGES into named target list and transmits to the DIV FSCC.

6. TARGET INFORMATION RETRIEVAL

A. AFATDS has the ability to search it's own database or query another AFATDS OPFAC's database. This search/query may be conducted using numerous options tailored to your needs. The options include search by: target lists, target categories, target types, geometry, area, DTG or status. Upon receiving a list of targets answering your query, the targets may be added to any target list. Targeting for a future plan is discussed further in chapter 8.

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CHAPTER EIGHT

FIRE SUPPORT AND FIRE PLANNING

1. **General.** Fire support planning allows the GCE commander to plan for future operations. Future operations are those operations in which the friendly and enemy situations change sufficiently to prevent the use of the current situation data for predicting operations. Fire planning is the targeting of enemy forces and the scheduling of these targets to support the GCE commander's intent. There are two general situations that alter the method of fire planning that occur using the AFATDS computer. These are defined based on the time that will exist until the plan is executed.

A. **Current situation planning** is accomplished at echelons where the focus is on the current battle. Plans are prepared based on the current situation assuming that little will change between the preparation of the plan and its execution. These plans are the simplest to prepare and execute.

B. **Future situation planning** is performed when there is a need to focus on tactical situations that differ from the current battle. Using this type of planning, AFATDS supports the entire staff planning process and the decide-detect-deliver-assess (D3I) targeting methodology.

2. **Responsibility**. Each OPFAC is responsible for some part of fire support and fire planning.

A. **Prior to establishment of the landing force ashore.** Prior to establishment of the landing force ashore, the MAGTF FFCC (SACC) builds all future plans in accordance with the CATF and CLF intent, orders and verbal direction. All plans created are transmitted to the LFOC (regimental FSCC-AFLOAT) and subordinate battalion FSCCs and fire support assets controlled by the MAGTF FFCC.

B. **After establishment of the landing force ashore.** After establishment of the landing force ashore, the GCE FSCC plans for future operations. The regimental FSCC may also conduct targeting and fire planning in the future plan.

C. **Planning at battalion FSCCs.** Fire planning at the battalion FSCC is always conducted in the current situation due the lack of assets for determining the future situation and the battalion's focus on the immediate battle.

D. **Planning at the battalion FDC.** The battalion FDC receives the FS plan from the regimental FSCC. Unit movements are added to support the plan and then submitted to the regimental FSCC for approval. FS plans are then disseminated to the battery FDCs.

E. **Implementation of fire plans.** Fire plans are implemented at the

direction of the maneuver commander that the plan supports.

3. TARGET LISTS.

A. **Current fire planning** is conducted by entering targets into the planned target list using the MESSAGES selection under FIRE MISSIONS. These targets can be augmented by adding the contents of the other lists in the current situation. These are the ACTIVE, INACTIVE, ONCALL or a named target list.

B. **Future fire planning** automatically creates a MASTER PLANNED TARGET LIST for the new plan. This list is automatically updated with all targets that are added to the plan including the contents of target lists received and those added by the operator for the plan. Additional lists can be added to the plan. It is recommended that the maneuver element responsible for the plan create a separate named list for each plan. This list allows the responsible FSCC to control the targets added to the list as opposed to accepting the master list that is automatically updated.

4. **Current fire planning sequence.** Current fire planning is accomplished using the sequence of events described in table 8-1 below.

Table 8-1. The Current Fire Planning Sequence

STAFF ACTION	AGENCY	AFATDS ACTION	REMARKS
1. Receive the maneuver course of action.	Fire support planner at FSCC/FFCC.		The fire plan will be executed within a short period of time and therefore will be constructed as a schedule of fire in the current situation. No additional steps are required at the AFATDS computer at this point.
2 Begin targeting for the plan.		Create the initial target list.	The fire plan target list can be created by: -targeting the enemy units in current situation -adding the contents of other plans' lists -adding individual targets from current target lists to the named target list
2a.		Create the Fire Plan Target List	Add all desired targets from the Current On-Call, Inactive and Planned target list to the Fire Plan, by Clicking 1 on TARGETS, FIRE PLANS, NEW and NAME the target list. Copy targets from the lists and Click 1 on OK.
NOTE: All targets are stored in the named target list, due to the fact targets cannot be added to the planned target list.			
2b		Disseminate the list.	Transmit a freetext warning order followed by the Fire Plan target list. The list is transmitted by clicking 1 on TARGETS, FIRE PLANS, EDIT and select the Fire Plan. Click 1 on SEND and select the destination. OK the select UNIT window to transmit the list.

NOTE: A received target list does not produce an alert. Instead the list is stored under the Fire Plan Name and in the Current On-Call Target List. The list is accessible in the current situation by displaying the Fire Plan List or the Current On-Call Target List.			
3. Refine the target list.	Subordinate maneuver units.	Compose their additions to the target list as additions to the fire plan target list.	Subordinates add targets using the MISSION PROCESSING, MESSAGES option.
3a	Subordinate maneuver units.	Transmit their recommended lists to the fire support planner.	A freetext warning order is followed by transmitting the planned target list to the fire support planner.
NOTE: A target search may be done in lieu of step 3a. and in place of step 3.			
3b	Fire support planner.	Resolve duplications and delete targets.	The fire support planner receives the lists of targets from subordinates and adds those targets deemed necessary to the oncall target list. Duplications are resolved in the ONCALL TARGET LIST window. Click 1 on SORT, CHECK FOR DUPLICATES. Delete all duplicates found.
4	Fire support planner.	Create schedules of fire to support the Current Situation.	Click 1 on TARGETS. Select GROUPS or SERIES to create either. Select FIRE PLANS to build a plan and schedule groups, series or individual targets in a plan.
5		Compute schedules of fire.	Click 1 on PLANNING, TARGETS, FIRE PLAN and select each FP in turn. Click 1 on OPTIONS, SCHEDULE, OPTIONS, CALCULATE. Resolve all unscheduled targets.
6		Coordinate fires on fire plan target.	Click 1 on TARGETS, PLANNED TARGET LIST. Select LIST, CHECK FOR COORDINATION. Those targets that can not be cleared must be manually cleared or deleted from the SOF.
7		Transmit the schedule to fire support agencies.	Transmit a freetext message warning that SOF will be transmitted, Click 1 on SEND and select the fire support unit IDs. Click 1 on OK.
8		Send the SOF to non-digitized units.	Send SOF via voice net.
9 Disseminate the SOF	Arty support unit HQ.	Warn subordinates that the fire plan is to be transmitted.	Send a free text message to all battalion or battery FDCs warning of the transmission of the SOF.

10		Transmit the SOF to AFATDS equipped fire units.	Click 1 on TARGETS, SOF, SEND and select the fire support unit IDs. Click 1 on OK.
10a		Transmit NNFP;CFF/NNFP ;TARGET messages to non-AFATDS BCS and FDS units	Click 1 on TARGETS, FIRE PLANS, Select Fire Plan, EDIT, EXECUTE, Select OK. Then select TARGETS, SOF, Select the SOF Name, EDIT, Highlight the Unit you are sending to, Select OPTIONS, SEND TO SELECTED, Select the BCS, and OK. All data for that firing unit is transmitted.
10b	Fire units	Receive SOF.	At BCS units the SOF is received as NNFP;CFFs that are stored by selecting FIRE PLAN GROUP ENTRY from the BCS main index. At FDS units each received NNFP;TARGET message is stored. . **DENY ALL MISSIONS IN THE IP WINDOW GENERATED BY EXECUTING THE SOF.**
11. Execute the SOF.	Fire support planner.	Announce trigger for plan.	The fire support planner transmits the fire plan H-HOUR via free text message.

5. **Future fire planning sequence**. The future fire planning sequence supports the staff planning process with a parallel sequence of processing and decision support tools. Table 8-2 describes this process.

Table 8-2. The Future Fire Planning Sequence

STAFF ACTION	AGENCY	AFATDS ACTION	REMARKS
1. Receive the maneuver course of action.	Fire support planner at FSCC/FFCC .	Create planned situation.	Click 1 on SITUATIONS, NEW PLAN. This window allows the operator to copy data from any other situation or specify what aspects of guidance, data base and text that will be built unique to the planned situation.
1a		Open the planned situation.	Click 1 on SITUATIONS, OPEN PLAN, the plan name and OK. Display the map by clicking 1 on MAP, DISPLAY MAP.
1b		Create friendly situation	Click 1 on PLANNING, SITUATION, FRIENDLY. Enter your subordinate UNIT IDs that possess ZORs. Select the UNIT ID of the main effort.
1c		Create enemy situation	Click 1 on PLANNING, SITUATION, ENEMY. Select the enemy force size and their activity. (add enemy template)
1d		Add or alter unit data.	Click 1 on UNITS, NEW to build new units in the planned situation. Click 1 on UNITS, EDIT to alter existing planned units or copy units from the current or any other situation. (add individual enemy units)

1e		Add or alter geometry data.	Click 1 on GEOMETRY, NEW to build new data in the situation. Click 1 on GEOMETRY, EDIT to alter existing situation data or copy geometry from the current or any other situation.
1f		Add or alter guidance.	Click 1 on GUIDANCES and select any category to add or edit existing guidance.
2. Wargame fire support task organizations.	Fire support planner.	Create the FS COA task organization.	Click 1 on PLANNING, FS ESTIMATE. The displayed window shows a column for each unit assigned a sector in step 1b. Each column is labeled with tactical missions. Assign fire support units from the selection list to the correct supported unit or to support the entire force. These assignments determine fire support capability for the COA.
2a		Compute statistics for the COA.	Click 1 on OPTIONS, COMPUTE STATISTICS. ROUNDS REQUIRED, TUBES IN SECTOR, MASSING CAPABILITY, SYSTEM UTILIZATION, SIMPLICITY and TASKS SUPPORTABLE are computed.
2b		Create additional COAs.	Click 1 on PLANNING, COA, and click 1 on the button corresponding to the next COA. Complete steps 2 and 2a for each new COA. Up to 3 COAs can be created.
2c		Compare COAs.	From any COA's TASK ORGANIZATION window, click 1 on OPTIONS, COMPARE COAs.
3. Select the Task organization for fire support	Fire Support planner.	Select a COA.	Click 1 on PLANNING, COA, click 1 on the button corresponding to the desired COA then click 1 on SELECT COA.
3a		Create additional phases.	Click 1 on SITUATIONS, OPEN PLAN, highlight the planned situation name and click 1 on NEW PHASE. Enter the second phase in the same manner as the first.
3b Begin targeting for the Fire Plans.		Create the Fire Plan Target List	Select TARGETS, TARGET LISTS, NEW, name the FP Target List. The FP Target list is now created and ready for targets.
3c.		Add targets to the FP target list.	The fire plan target list can be created by: -targeting the enemy units in planned situation -adding the contents of other fireplans lists -adding individual targets from current target lists to the FP target list
NOTE: All targets are stored in the fire plan and phase master list. These are copied into a plan list created by the operator to avoid complications associated with the fact that any new target or list is copied to the master list automatically.			

3d		Disseminate the list.	Transmit a freetext warning order followed by the Fire Plan target list. The list is transmitted by clicking 1 on TARGETS, TARGET LISTS, EDIT and select the target list. Click 1 on SEND and select the destination. OK the select UNIT window to transmit the list.
NOTE: A received target list does not produce an alert. Instead the list is stored under the received name. In a planned situation the named list can be accessed directly.			
4. Refine the target list.	Subordinate maneuver units.	Compose their additions to the target list as separate lists.	Subordinates produce lists of targets for inclusion.
4a	Subordinate maneuver units.	Transmit their recommended lists to the fire support planner.	A freetext warning order is followed by transmitting the lists of targets to the fire support planner.
NOTE: A target search may be done in lieu of step 3d. and in place of step 4 and 4a.			
4b	Fire support planner.	Resolve duplications and delete targets.	The fire support planner receives the lists of targets and adds those targets deemed necessary to the target list (click 1 on TARGETS, TARGET LISTS and the plan target list). On the TARGET LIST window click 1 on SORT, CHECK FOR DUPLICATES.
4c	Fire support planner.	Create schedules of fire to support the planned situation.	Click 1 on TARGETS. Select GROUPS or SERIES to create either. Select FIRE PLANS to build a fire plan and schedule groups, series or individual targets in a fire plan.
5. Write the op order.		Create the op order or FS annex.	Click 1 on TEXT, INDEX, (text type), OPTION, EDIT. ***Note:*** unit data for the creating OPFAC of the planned situatuion will assume the format of the unit's service **(USMC format vice USA, the entry is important do not let the service default.).**
5a		Create the FS execution matrix	Click 1 on PLANNING, TEXT, FS EXECUTION MATRIX. Matrix displays the units with sectors assigned on the SITUATIONS, FRIENDLY window and columns of phases based on the number of phases created. The cross indexed boxes are free text areas of up to seven lines.

6 Disseminate the plan.	Fire support planner.	Transmit the planned situation to subordinate and supporting units.	Click 1 on SITUATIONS, TRANSFER PLAN. Click 1 on COMM to transmit the planned situation or on ARCHIVE to save the planned situation as an OD export file. If COMM is selected those portions of the situation to be sent must be selected. ARCHIVE saves the entire planned situation.
6b		Print complete operations order for non-digital support units.	Click 1 on PLANNING, TEXT, INDEX and select OPERATIONS ORDER, FS ANNEX and/or FA ANNEX. Click 1 on PRINT, select the print and click OK.
6c Write arty fire support documents.	FA support HQ unit.	Prepare the FA estimate.	Click 1 on PLANNING, FA ESTIMATE. Select the caliber and units for the estimate. Click 1 on OK. Provides the number of master target list targets that fall in sensor sectors (ACQUIRABLE), those in fire unit fans (ATTACKABLE) and those that are both with the required ammunition expenditure to engage.
6d		Prepare the FA annex.	Click 1 on PLANNING, TEXT, FA SUPPORT MATRIX. Matrix displays the artillery units in the plan and columns of phases based on the number of phases created. The cross indexed boxes are free text areas of up to seven lines.
6e		Examine unit locations and targets.	FS units' planned locations can moved to accommodate improved attackability and sensors can be re-positioned to improve acquisition.
6f		Recommend changes to sensor and fire unit locations to support the plan.	Recommended changes are submitted by freetext to the fire support planner.
6g	Maneuver unit HQ.	Approve/disap-prove new unit/sensor locations.	Free text approval/denial of new positions is transmitted to the requesting agencies.
6h	FA support unit HQ.	Disseminate FA annex.	Select PLANNING, TEXT, INDEX, highlight the FA annex and transmit to subordinate fire support assets and the fire support planner.
6I		Request ammunition to support the planned situation and it's SOFs	In the current plan, click 1 on UNITS, EDIT THIS UNIT, OPTIONS, AMMO REQUISITION. Complete this form with the required ammunition and print for submission.
6j	All CPs.	Plan and order movement of subordinates.	Plan the movement of units and routes. Produce unit move order and seek approval where required. Transmit the move orders.

7. Implement the planned situation.	All stations.	Establish Clock synchronization.	By voice communication direct the time hack or direct use of satellite time. To sync, click 1 on SYSTEM, ADMINISTRATION, SET TIME. Type the time zone in the LOCAL TIME ZONE field then click 1 on SET TIME ZONE. Type the time in the SYNC TIME field then click 1 on the SYNCHRONIZE button.
7a.	All stations.	Move to locations required at start of the situation.	Each unit reports to its higher HQ when in place. Send in unit updates via data distribution.
7b.	All stations.	Report ready when all subordinate units are in place.	Each HQ reports to commanding and supported HQ when all subordinates are in place.
7c.	Fire support planner.	Direct implementation of the planned situation.	At the appointed time, click 1 on SITUATIONS, IMPLEMENT PLAN. Select all aspects of the plan to be implemented. Click 1 on OK. Implement the new comm configuration if directed.
8. Update target list.	Subordinate maneuver units.	Transmit changes to the list of targets.	Send warning order followed by any new submissions to the target lists.
8a	Fire support planner	Consolidate target list and check for duplicates	The fire support planner receives the lists of targets and adds those targets deemed necessary to the target list (click 1 on TARGETS, TARGET LISTS and the Current On-Call target list). On the TARGET LIST window click 1 on SORT, CHECK FOR DUPLICATES.
8b	Fire support planner.	Alter schedules of fire as required.	Add or remove targets and/or fire units from fire plans.
8c.		Compute schedules of fire.	Click 1 on PLANNING, TARGETS, FIRE PLANS and select each FP in turn. Click 1 on OPTIONS, SCHEDULE, OPTIONS, CALCULATE. Resolve all unscheduled targets.
8d.	Fire support planner.		Click 1 on targets, planned target list. Select list, check for coordination. Those targets that cannot be cleared must be deleted from the SOF.
8e.		Transmit the schedule to fire support agencies.	Click 1 on SEND and select the fire support unit IDs. Click 1 on OK.
8f.		Send the SOF to non-digitized units.	Send SOF via voice net.

10 Disseminate the SOF	Arty support unit HQ.	Warn subordinates that the fire plan is to be transmitted.	Send a free text message to all battalion or battery FDCs warning of the transmission of the SOF.
10b		Transmit the SOF to AFATDS equipped fire units.	Click 1 on TARGETS, SOF, SEND and select the fire support unit IDs. Click 1 on OK.
10c		Transmit NNFP;CFF/NNFP; TARGET messages to non-AFATDS BCS and FDS units	Click 1 on TARGETS, FIRE PLANS, Select Fire Plan, EDIT, EXECUTE, Select OK. Then select TARGETS, SOF, Select the SOF Name, EDIT, Highlight the Unit you are sending to, Select OPTIONS, SEND TO SELECTED, Select the BCS, and OK. All data for that firing unit is transmitted. **DENY ALL MISSIONS IN THE IP WINDOW GENERATED BY EXECUTING THE SOF.**
10c	Fire units	Receive SOF.	At BCS units the SOF is received as NNFP;CFFs that are stored by selecting FIRE PLAN GROUP ENTRY from the BCS main index. At FDS units each received NNFP;TARGET message is stored.
11. Execute the SOF.	Fire support planner.	Announce trigger for plan.	The fire support planner transmits the fire plan H-HOUR via free text message.
12.	BCS/FDS operator	Receives the H-Hour	The new H-Hour is entered into the fire plan via BCS;COMD. The fire plan is executed at the BCS.

6. **Fire plan execution**. In either future or current fire plan execution, the objective is to cause the targets to be fired based on a time sequence and fire unit selection established in the schedule of fires. A schedule of fire can be executed at any AFATDS OPFAC, however it is recommended that execution be done at the lowest level possible. The above method is accomplished by displaying the SOF window (Selecting TARGETS, SCHEDULE OF FIRES) Activating, if necessary, and then selecting execute. AFATDS will place all targets that were assigned to the fire plan in the active target list. This includes all targets that were not scheduled. All targets are compared to the fire units and guidance of the current situation as it exists at the instant of execution. This results in possible new fire unit selection and the potential for targets to be fired at different times and with different munitions that were originally predicted. Targets that require coordination are processed for clearance at this time and the SOF is transmitted to the fire units.

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CHAPTER NINE

AFATDS AIR PROCESSING

General. AFATDS 98 software now conducts air processing within the AFATDS application. AFATDS divides all Air processing into two categories; immediate and preplanned. The basis for the functionality that allows air mission processing, is based on the creation of Air Support Requests (ASRs), within an Air Support List (ASL). AFATDS functionality divides all ASRs into seven types; Close Air Support (CAS), Air Interdiction (AI), Air Assault, Electronic Warfare (EW), Medevac, Reconnaissance (RECCE) and Air Drop. Both immediate and preplanned air requests may be any of the seven types. AFATDS further categorizes the seven ASR types into "fires" and "non-fires" ASRs. "Fires" ASRs are CAS and AI and "non-fires" include all of the other five. AFATDS also "talks" to both Contingency Theater Air Planning Systems (CTAPS) and Theater Battle Management Core Systems (TBMCS) for the submission of ASRs, the reception of the Air Tasking Order (ATO), Airspace Coordination Order (ACO) and their associated messages. Although AFATDS processes both immediate and preplanned air requests, preplanned processing is fully automated while immediate is not. This is due to the Forward Air Controller (FAC) using the Digital Message Terminal (DCT) for the forward entry device, and the continuing development of the TBMCS interface.

1. IMMEDIATE AIR PROCESSING.

General. Immediate air request functionality is fully implemented in AFATDS 98 software, and works well, with a few exceptions; these exceptions will be addressed later in this chapter. The primary fault with using AFATDS in processing immediate air requests, hinges on the automated systems with which AFATDS interfaces, or in some cases the lack of an automated system with which to interface. To demonstrate the deficiencies inherent in interfacing with other automated systems, let us examine the forward entry device, (DMS) used by the observer (FAC). The DMS can not specifically request air. The DMS requests fires generically with no capability to specify air as the preferred FS system, or request confirmed on-call or scheduled CAS using ASR numbers. Further, when a recommendation for an air solution is generated by AFATDS, the observer generated information required for an air mission, can not be sent from the DMS to the FSCC in an automated format i.e. callsign, freq., air defenses. There simply is no JVMF message set for transmission of this information. Conversely, the information received back from the Contingency Theatre Air Planning System (CTAPS)/Theatre Battlefield Management Core System (TBMCS) at the DASC AFATDS, populates their ASR and all other AFATDS in the mission chain, but can not be disseminated to the FO/DMS i.e. approved mission number, aircraft callsign, contact point, type aircraft, configuration. Finally, the lack of an interfacing system is demonstrated by the fact there is no automated device in the plane's cockpit. Neither the DASC nor the observer can communicate with the pilot via any means other than voice. So as can be seen, the middle of an immediate air mission can be automated and processed fine by AFATDS. The end connections however, consisting of the DASC to pilot, and observer to pilot link can only be conducted voice. The DASC to observer, and observer to DASC link can only be conducted voice or freetext message. This marriage of voice and digital is not desirable and complicates immediate air processing. Table 9-1 depicts the flow of an immediate air mission that is generated at the Battalion FSCC.

1. Database Setup. There are specific parameters governing the processing of immediate air missions. These parameters must be established to allow processing, and will be discussed in this chapter. These parameters include commander's guidance, air mission routing, ASL creation and ASR numbering.

A. Commander's Guidance. Commander's guidance must reflect the ability of an FSCC/FFCC to request air, prioritize the selection of air in relation to other FS assets and provide a path for the ASR to the DASC.

1) The FS System Attack Parameters allows for the selection of air as an FS asset as well as providing a route for the FSE;FR to the controlling OPFAC.

2) The FS System Task List along with mission prioritization (mission cutoff) allows the simplest method of prioritizing of the allocation of FS assets.

B. Air Mission Routing. Air mission routing allows for the dissemination of immediate

air missions and info copies and the quick setup of intervention.

1) Like preplanned ASRs, immediate ASRs are divided into "Fires" and "Non-fires" type ASRs. Just as in preplanned ASRs, CAS and AI are "Fires" and all other types are "Non-fires". An Action Address must be provided for all ASR types to furnish a destination for the ASR.

   a. When the action address is the TACC CTAPS/TBMCS, a unit icon must be created for that system, or communications will not be available to that system.

2) An Information Address may be provided for all CAS and AI missions. This allows the air request to be viewed for approval or denial by an FSCC's supported unit. This function simulates the silence is consent rule when FSCCs monitored the voice TAR/HR net.

3) Intervene may be selected as a shortcut in establishing an intervention point for an ASR by type. Non-fires type ASRs will display in the active monitor and Fires type ASRs will display in the normal IP icon.

4) ASL Creation. ASLs are created in conjunction with the ATO cycle, hence, as the start time becomes the current time, the ASL becomes the current ASL. If there is no current ASL built a default ASL will be created. The naming convention is important for determining the establishing unit and the air day. Name the ASL in conjunction with appendix "A" of this publication.

5) ASR Numbering. In order for ASR numbers to be assigned automatically as ASRs are created, this block must be entered.

ACTION	RESULT	COMMENTS
1. The observer transmits a FR to the Bn. FSCC via a DMS.	** The FR is processed at the Bn FSCC's AFATDS and an air solution with a recommendation to send to DASC is generated. The mission is in the active target list, however, an ASR will not be added to the current ASL until the recommendation is accepted.	The Bn. FSCC has confirmed air available on the ATO or CAS is pushed down from the Regimental FSCC and guidances reflect this. In this case the Bn. FSCC is in FS System attack analysis, with the DASC entered in the Route To field under Air in the System Attack Parameters. The MAG supports the DASC.
2. The observer sends a freetext message to the Bn. FSCC.	The observer follows-up his FR immediately with a freetext message requesting air as the FS system and including the additional air information.	Freetext message includes callsign, frequency, friendlies location, desired effects and enemy air defenses.
3. The FR is modified to specify air if necessary.	If another FS system has been selected, the mission is recalculated and Air is selected, or the air option is highlighted and send is selected.	
4. The Bn. FSCC accepts the recommendation.	The FSE;FR is transmitted as per the recommendation. An immediate ASR is created on the current ASL with a status of requested and a state of execute. The ASL is transmitted to the action and info address in the air mission routing window.	If the current air day's ASL does not exist, a default ASL named ASL Current will be generated with the system's current DTG as a start time and the end time being 24 hours later. If an immediate ASR is received the current day's ASL is not built, the unit sending the ASR also sends his current ASL.
4a. The info copy is received at the Regt. FSCC.	The recommendation may be accepted or the mission denied. This message creates an ASR in the current ASL, which does not get updated.	In this case the information address at the Bn. FSCC was setup to be transmitted to FSCC 7MR. FSCC 7MR had their information setup to be transmitted to 1MD. Due to this setup, the recommendation on 7MR's info copy displayed Send info copy to FSCC 1MD. This functionality equates to the silence is consent rule of the voice world.

Table 9-1

ACTION	RESULT	COMMENTS
4b. The info copy is received at the Div. FSCC.	The recommendation may be accepted or the mission denied. This message creates an ASR in the current ASL, which does not get updated	In this case the information address at the Regt. FSCC was setup to be transmitted to FSCC 1MD. FSCC 1MD had no information address setup.
5. The Bn. FSCC edits the ASR.	The air information received from the observer is manually typed into the corresponding ASR.	Once the air recommendation is accepted the ASR is created and transmitted to the action address. At that time the ASR may be edited and then must be sent again.
6. The DASC receives the FSE;FR and ASR.	The FSE;FR is placed in the IP buffer if intervention is set. The ASR is placed in the current air day's ASL. The status is requested and the state is execute. In this case the information address at the Bn.	There will be an alert post stating the ASL has been received. This is the indication that the FSCC has updated the ASR with the observer's air mission information, when the recommendation is accepted, the OTF will fail to the MAG. The ASR is printed from the alert. At the same time, the ASR is also transmitted to the action address TACC TBMCS

	FSCC was setup to be transmitted to FSCC 7MR. FSCC 7MR had their information setup to be transmitted to 1MD. Due to this setup, the recommendation on 7MR's info copy displayed Send info copy to FSCC 1MD. The DASC waits for the ASR to be updated before accepting the recommendation.	(IRIS). This is the server of TACC TBMCS which routes the ASR to the CAST application which is running in the DASC.
7. The DASC receives the REQSTATASK from TBMCS.	This message updates the Air Status of the ASL to Confirmed or Denied. All other AFATDS in the mission chain also have their Air Status updated. The air status may be updated manually as well. If this were the desired method, the air status would not be changed to confirmed until after completing step 8.	The REQSTATASK is a message used by TBMCS to approve or deny an air mission. The DASC has both an AFATDS and a TBMCS. This is the CAST application, which is a client to the TACC TBMCS server (IRIS). An alert posts in the air mission monitor alerting the operator that the mission has been confirmed or denied at all AFATDS in the mission chain. The observer receives an MTO of confirmed or denied with a corresponding target number.
8. Air mission data is entered in the ASR at DASC.	Air mission info is gleaned from the CAST application, entered in the corresponding ASR and transmitted to the Bn. FSCC.	Mission ID, aircraft callsign, aircraft type and number, configuration, contact point and any other data that must be entered by hand into the ASR at the DASC AFATDS and transmitted to the requestor.
9. The pilot is briefed by DASC voice.	The DASC contacts the aircraft voice and briefs the mission on the TAD net.	
10. The observer is updated with air mission information from the Bn. Air officer.	This is the data entered by DASC into AFATDS from the CAST in 5. Above. This data must be sent to the observer by voice or by freetext message. The Bn. air officer, upon examination of the corresponding ASR may do this.	Includes Mission ID, flight callsign, number and type of aircraft, type of ordinance, ETA and frequency.
ACTION	**RESULT**	**COMMENTS**
11. The aircraft contacts the observer voice.	The aircraft contacts the observer UHF on the TAD net, as per the DASCs brief.	Includes Mission ID, number and type of aircraft, configuration and time on station.
12. Observer briefs pilot voice.	TAD net, UHF, voice.	Includes IP, heading, distance, target elevation, target description, target location, type mark, location of friendlies and egress.
13. The mission TOT is established and the mission controlled.	TAD net, UHF, voice.	
14. BDA is reported by the observer to the DASC.	This includes target location, time on/off the target, percent ordinance on target/percent target destroyed.	This information is entered into the CAST application at the DASC.
15. Pilot reports	The DASC enters completed	All AFATDS in the mission chain are updated to

the flight on the deck to DASC.	into the CAST application, and a MISREP is transmitted to the DASC AFATDS, updating the mission to completed.	completed.

** Duplication is checked, using the same parameters as when processing an active mission, target similarity and target proximity. An ASR that has been denied will still cause duplication failure. When an ASR is denied, it should be deleted. An air mission state of Completed will not cause duplication.

2. PREPLANNED AIR PROCESSING.

A. **General**. As mentioned earlier, preplanned air is one of the functional areas of AFATDS air mission processing. AFATDS preplanned air mission processing allows for the submission of Air Support Requests (ASRs) and reception of the Air Tasking Order (ATO), Airspace Control Order (ACO) and the approved or denied messages (REQSTATASK). This functionality will be enhanced by the fielding of TBMCS and AFATDS' ability to interface with TBMCS. The advantage to using TBMCS over CTAPS is that ASRs process automatically and TBMCS is capable of receiving and transmitting unit data and a limited set of geometries. The communications setup is the same for TBMCS as CTAPS, a LAN connection using UNIX sendmail in an USMTF format. At this time TBMCS is not a fielded system, however, fielding should take place sometime in 2001. The interim plan is to run a Y2K compliant CTAPS until TBMCS is released.

B. **CONCEPT**. Like immediate air processing, preplanned air processing gives AFATDS the capability to submit seven types of Air Support Requests (ASRs). These ASR types are Close Air Support (CAS), Air Interdiction (AI), Reconnaissance (RECCE), Electronic Warfare (EW), Air Drop (AD), Assault support (ASSLT SPT) and Medical Evacuation (MEDEVAC). The ASRs are built into an Air Support List (ASL) for submission up the chain to MEF (TACC) or the JFACC for inclusion in the Air Tasking Order (ATO). The ASLs that are submitted must have start and end times that correspond to the ATO start and end times or ASRs will not update (TBMCS) or the ATO will not parse (CTAPS). Another option with A98 software is that an ASL may be built in either the current or planned situations. It is recommended that the ASLs be built in the current situation so that implementation is automatic and all ASLs may be viewed at one place in the database. Other functionality includes the ability to merge ASLs, ("rack") to approve or deny ASRs at any echelon and to sort an ASL by priority ("stack"). As mentioned above AFATDS interfaces with both CTAPS and TBMCS. Currently, TBMCS (IRIS) does not recognize a preplanned CAS ASR, and any preplanned CAS request is not processed. Preplanned CAS must be submitted as AI.

C. **DATABASE SETUP**. Like immediate air processing, specific areas of the database must be setup to cause the desired results. Unlike immediate air processing there is no requirement for establishing special entries in commander's guidance. The areas

requiring entries are Air Mission Routing, ASL creation and ASR numbering.

1) Air Mission Routing. The only requirement in this field is a single entry for your unit's supported unit. i.e. Division enters MEF, Regiment enters Division.

2) ASL Creation. ASLs are created in conjunction with the ATO cycle, in the case of a preplanned submission the ASL is being submitted 72 hours in advance. It is extremely important that the ASL reflect the same start and end times as that day's ATO. The naming convention is also important for determining the establishing unit and the air day. Name the ASL in conjunction with appendix "A" of this publication.

3) ASR Numbering. In order for ASR numbers to be assigned automatically as ASRs are created, this block must be entered.

D. **PREPLANNED SUBMISSION SEQUENCE**. Planned air targets are collated from subordinates and submitted to the MEF future ops. section. These targets are for attack 48 to 72 hours out, and after undergoing a targeting board are either submitted to TACC for inclusion in the ATO, are determined unsupportable or are attacked by another FS asset (ATACMS). If working jointly with the Air Force these unsupportable requests are submitted to the JFACC for inclusion in the joint ATO. The Marine ATO is then merged with the joint ATO and sent as one. Table 9-2 depicts this process.

TABLE 9-2

STAFF ACTION	AGENCY	AFATDS ACTION	REMARKS
1. Determine air mission routing.	FSCC fire support planner.	Enter preplanned air mission routing.	All FSCCs enter their higher headquarters. MEF enter the TACCs CTAPS/TBMCS.
2. Determine ASR number block.	FFCC/FSCC/ TACC	Enter ASR number block.	ASRs will not be created without an ASR number block.
3. Determine ASL residence.	FSCC fire support planner and TACC.	A planned situation would have to be built.	Building the ASL in the current situation is recommended. If built in a plan the ASL must be implemented manually. Only the ASL being executed could be viewed in current.
4. Determine air targets.	FSCC fire Support planner.		Determine targets either from the target lists, enemy targets, the enemy template or MIDB Facilities file.
5. Determine start and end times for the ATO cycle.	Fire support planner at FSCC.	Create an Air Support List.	Select on TARGETS, TARGET LISTS, NEW ASL. Name the ASL by your tag name and air day. The default is 48 to 72 hours out from the current AFATDS time, ensure the correct time (Exact ATO start and end times).
6.	FSCC.	Build ASRs into the ASL.	Targets may be copied from any existing target list or may be created new. When a target is copied, it must be edited and at a minimum the No Earlier Than (NET), Msn Loc and Type, and the Mission Type entered. The NET determines into which ASL (air day) the target is placed. All ASR should have the status of created. Any ASR created from the MIDB Facilities list will default to a type of AI.
7. Determine ASL data fields.	FSCC fire support planner.	Taylor the data fields of the ASR.	Each target list has default data fields. The data fields desired may be added to or subtracted from the target list.
8.	FSCC.	Transmit the ASL.	Select the Send radio button on the bottom of the ASL list, from the list displayed, select the same unit input into the preplanned air mission routing table. The ASL may also be transmitted by the transmit current option or sent individually from the ASR window. All ASRs should be updated to Requested.
9.	FFCC.	Receive subordinates ASLs.	A low level alert is generated upon reception of an ASL.

10. Combine subordinates ASLs.	Fire support planner FFCC.	Subordinate's ASLs are added to the your ASL.	The targets from your subordinates ASL's are added to your ASL, using the **MERGE** function. By using the proper naming convention and building ASLs in current all subordinates ASL are available for selection when your ASL is displayed. **It is important to use the merge function and not the copy function, as copy will lose the transmitting units association to the ASR.**
11. Check ASL for duplicates	FSCC fire support planner.	Check for duplicates.	Check ASL for duplicate submissions. Deny the ASR before deleting. Ensure that reason is typed in.
12. Sort the ASL.	FSCC fire support planner.	Sort the ASL.	The ASL may be sorted or listed in any order desired. The ASL may be sorted by air priority, referred to as "stacking".
13.	FSCC.	Transmit the ASL to higher.	Same as step 8.
14. Receive the ASL.	FFCC fire planner.	Same as 9-12	Repeat steps 9 through 12.
15. Submission of ASRs to targeting board.	FFCC fire planner.		9-1 All ASRs are submitted to the targeting board to determine if they are to be serviced by air, another FS asset or be denied. If working jointly unsupportable ASRs are sent to the JFACC for submission to the joint targeting board and subsequently the joint ATO.
16. Transmit the ASL to the TACC.	FSCC	Transmit ASL to CTAPS/TBMCS.	The ASL is transmitted to the TACC CTAPS/TBMCS.
17. Receive the ASL at the TACC.	TACC	Generate the ATOC.	The CTAPS receives the ASRs as an E-mail file and must be input manually into the Air Planning System (APS) which is a component of the CTAPS system and generates the ATOC which is the ATO plus commanders intent. The TBMCS receives the ASRs and processes them automatically into the ATO. The ACO is also generated at the CTAPS/TBMCS at the Airspace Deconfliction System (ADS).

18. Receive the ATOC/ATO/ ACO at MEF.	FFCC	The ATO/ACO is received at MEF.	The entire ATOC/ATO/ACO is received at the AFATDS. If the ATOC was sent from CTAPS it is parsed to subordinates. If the ATO is received from TBMCS, it will process automatically. The ATO is not parsed, however, all ASRs are updated to confirmed or denied (Only fires ASRs with the type AI are recognized). All air corridors are extracted from the ACO by AFATDS. The Air Corridors (ACs) are converted into Airspace Coordination Areas (ACAs) automatically and are disseminated as per data distribution.
19. ATO/ATOC/ ACO is received at subordinates	FFCC.	The ATO/ATOC/ACO updates subordinate's ASRs.	All ASRs are updated to confirmed or denied. In addition denied ASRs are added to the Denied list and Approved ASRs are added to the approved list.

APPENDIX A
NAMING CONVENTIONS

NAMING OF GEOMETRY

1. Geometry files are used by all stations in AFATDS. Because of their universal nature and the requirement to interface with IFSAS, TCO etc, a naming convention must be established to ensure understanding and lack of duplication.

2. Geometry names use not more than six characters. These six characters are slit to provide the following three pieces of information:

a. The first two characters designate the type of geometry:

MEASURE	NAMING CONVENTION
ATI ZONE	ATIZ - followed by sequential number
AIR CORRIDOR	AC
AIRSPACE COORDINATION AREA	AS
AMMUNITION HOLDING AREA	AH
AMPHIBIOUS OBJECTIVE AREA	OA
ASSAULT OBJECTIVE	AO
ASSAULT POSITION	AP
ASSEMBLY AREA	AA
ATTACK POSITION	AP
BATTLE POSITION	BP
BEACH SUPPORT AREA	BSA - followed by unit tag name.
BIOLOGICAL CONTAMINATED AREA	BC
BRIGADE SUPPORT AREA	SU
CALL FOR FIRE ZONE	CFFZ - followed by sequential number
CENSOR ZONE	CZ - followed by sequential number
CHEMICAL CONTAMINATED AREA	CC
CLOSE BATTLE AREA	CBA
COMBAT SERVICE SUPPORT AREA	CS
CRITICAL FRIENDLY ZONE	CFZ - followed by sequential number
DEAD SPACE AREA	DS
DEEP BATTLE AREA	DBA followed by responsible unit tag.
DIVISION SUPPORT AREA	DSA-followed by supported division tag.
DROP ZONE	DZ
ENGAGEMENT AREA	EA
FASCAM SAFETY ZONE	AFATDS names based on target number.
FIRE SUPPORT AREA	SA
FORWARD ARMING AND REFUELING POINT	FAR – followed by establishing unit tag.
FREE FIRE AREA	FF
HELICOPTER LANE	HL
LANDING ZONE	LZ
LANDING ZONE SUPPORT AREA	LZS
LIMITED ACCESS POSITION AREA	LA
MINE FIELD	MF
NO FIRE AREA	NF
OBSTACLE AREA	OO
PICKUP ZONE	PZ

MEASURE	NAMING CONVENTION
PLATOON AREA HAZARD	AFATDS names based on target number.
POSITION AREA	PA
RADIOACTIVE AREA	RAD
REAR BATTLE AREA	RBA
RESTRICTIVE FIRE AREA	RF
SHORAD ZONE	SZ
STRONG POINT AREA	SP
TARGET AREA HAZARD	TA
TARGET BUILD UP AREA	TB
TARGET GEOMETRY	TG
TARGET VALUE AREA	TV
VULNERABLE AREA	VA
ZONE OF RESPONSIBILITY	ZO
AIR HEAD LINE	AL
AXIS OF ADVANCE	AX
BOUNDARY LINE	Named using the tag name of unit on left then unit on right.
BRIDGEHEAD LINE	BL
COORDINATED FIRE LINE	CF
CROSSOVER LINE	CO
DIRECTION OF ATTACK	DA
FEINT	FT
FINAL COORDAINTION LINE	FL
FORCE BEACHHEAD LINE	FB
FORD CROSSING	FC
FORTIFIED LINE	FL
FORWARD EDGE OF BATTLE AREA	FE
FORWARD LINE OF OWN TROOPS	FL
HOLDING LINE	HD
LANE CROSSING	CR
LIGHT LINE	LL
LIMIT OF ADVANCE	LA
LINE OF CONTACT	LC
LINE OF DEPARTURE	LD
LINE OF DEPARTURE/CONTACT	LC
MAIN ATTACK	MA
MAIN SUPPLY ROUTE	MSR
MINE FIELD LINE	ML
OBSTACLE LINE	OL
PHASE LINE	PL
PROBABLE LINE OF DEPLOYMENT	PD
RESTRICTED FIRE LINE	RL
SUPPORTING ATTACK	SP
AIR CONTROL POINT	AC
AMBUSH POINT	AP
BRIDGE SITE	BR
BYPASS DIFFICULTY	BD
CHECKPOINT	CP
COMMUNCATIONS CHECKPOINT	CM
CONTACT POINT	CN
COORDINATION POINT	CR
DECON POINT	DP
DEPARTURE POINT	DE

MEASURE	NAMING CONVENTION
FIRE SUPPORT STATION	SS
FIRING POINT	FP
FORD CROSSING	FC
HIDE POINT	HP
INITIAL POINT	IP
LAUNCH POINT	LP
LINKUP POINT	LN
OBSTACLE	OO
OVERHEAD POINT	OV
PASSAGE POINT	PP
PENETRATION CONTROL POINT	PC
POINT OF DEPARTURE	PD
POP UP POINT	PU
RALLY POINT	RP
REDUCED WIDTH POINT	RW
RENDEZVOUS POINT	RZ
RELOAD POINT	RE
TRAFFIC CONTROL POINT.	TC

b. The third character is a numerical sequencing of the geometry input. For example, the first RFA established by an agency is number 1. Number one may be updated or completely deleted and replaced with number 2

c. The forth, fifth and sixth characters are the tag name of the unit that established the geometry.

d. Examples:

(1) ZO13MD = the first zone established by 3RD Marine Division.
(2) FL29MR = the second FLOT established by 9th Marine Regiment.
(3) DS4E11 = forth DSA established by E battery, 11th Marines.
(4) RF21A8 = second RFA established by 1st Battalion, 8th Marines.

UNIT TAG NAMES

1. TAG names are three digit abbreviations used to identify units in message data fields with limited space. The TAG names are used in the FSCOORD fields of support messages as well as in the naming of fire plans and geometry.

2. The following rules apply:

a. Regimental and larger size units are identified by the numerical designation followed by two characters identifying the unit size. The following unit size designators are used:

(1) MF = MEF

(2) FF = MEF FORWARD

(3) MU = MEU

(4) MD = Marine Division

(5) MR = Marine Regiment

(6) MAG = Marine Air Group

(7) MAW = Marine Air Wing

(8) Regiments with two digit designation (i.e. 25th Marines) use the number followed by M.

b. Battalions use the battalion name replacing the virgil (/) with the letter A. For example 1A5 is 1st Battalion, 5th Marines.

c. Battalions of regiments numbered greater than 9 use the battalion name, omitting the virgil (/). For example 127 is 1st Battalion, 27th Marines.

d. Separate battalions use the battalion name followed by two letters identifying the battalion:

(1) AA = Assault Amphibian Battalion

(2) CE = Combat Engineer Battalion

(3) LA = Light Armored Infantry Battalion

(4) TK = tank battalion.

e. Batteries use the battery letter followed by the regiment number.

f. Forward observers use the letters FO followed by the letter of the supported infantry company.

g. The TPC uses the letter T followed by the artillery regiment's number.

NAMING OF PLANNED SITUATIONS

Planned situations are named using nine characters in the following convention.

1. The first two letters of a planned situation will always be PL.

2. The third character is a letter designating the sequencing of the planned situation. For example, the first planned situation established by an agency is A.

3. The forth, fifth and sixth characters are the tag name of the unit that established the planned situation.

4. The seventh and eighth characters are PH designating phase and the ninth character is the sequential number of the phase. These three additional characters are necessary as AFATDS archives a plan by phases. The name of an archived plan/phase is extracted from the name field of the basic plan information and listed as such in the import/export window.

If the phase number is not included in the name, all phases in a plan would be named exactly the same, and it would become impossible to distinguish what archived file is contains a specific phase.

NAMING OF A AIR SUPPORT LIST (ASL)

When higher headquarters designates that an ASL containing Air Support Requests (ASRs) be submitted, the ASLs should be named using the following convention. This convention must be followed to ensure the identification and reception of all ASLs for that air day.

1. The first second and third characters are the unit tag name of the unit submitting the ASL.

2. The fourth through eight characters will designate the air day. The fourth, fifth and sixth characters will always be DAY, typed in lower case, and the seventh and eight digits will be the date for the air day i.e. 05, 23 etc.

EXAMPLE

7MRday25: name of the ASL containing the ASRs of Seventh Marines, submitted on the 23rd for execution the 25th.

NAMING OF FIRE PLANS

1. Fire plans are named using six characters and the following convention.

2. The first two letters indicate the type of plan:

a. CA = counter mech (armor) program

b. CF = counterfire program

c. CP = counter prep

d. FA = FASCAM

e. FP = fire plan

f. GP = group

g. MO = counter mobility program

h. OC = on call plan

i. PP = preparation fire

j. QK = quick fire plan

k. SA = suppression of enemy air defense plan

l. SE = series

m. TB = target bulletin

n. TL = target list

o. LT = list of targets

3. The third character is a numerical sequencing of the fire plan schedule of fire. For example, the first prep established by an agency is number 1. If the plan is a future fire support plan in AFATDS (not simply a schedule of fire) the third character is a letter.

4. The forth, fifth and sixth characters are the tag name of the unit that established the fire plan.

5. Examples:

a. SE21A6 = is the second series established by 1st Battalion, 6th Marines.

b. CF1T10 = is the first counterfire program established by 10th Marines TPC.

c. PP12MD = is the first prep established by 2d Marine Division.

APPENDIX B

EXAMPLE MCFSS TAB

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4.1st Marines
5.ROTA, SPAIN
6.201730Z Sep 2000
7.AAD-1

TAB B (Marine Corps Fire Support System Plan) to Appendix 19 (Fire Support) to Annex C (Operations) to Operation Order 2-00 (Operation SEA LION)

Ref: (a) Map: Abyar As Saluqi, Libya 4088IV
(b) MCRP 3-16.2A Draft
(c) Example UNIT SOP

Time Zone: B (Commencing 2 Sep 2000)

1. SITUATION. Refer to paragraph 1 of this order.

2. ORGANIZATION FOR COMBAT

FIRE SUPPORT	**MISSION**	**SUPPORTING**
FDC 11TH MARINES	DS	1ST MARDIV
FDS/A 6-27FA CARTY	GS	1ST MARDIV
1ST BN 11TH MARINES	DS	1ST MARINES
2ND BN 11TH MARINES	DS	5TH MARINES
3RD BN 11TH MARINES	DS	7TH MARINES
	O/O GS	1ST MARDIV
5TH BN 11TH MARINES	R	3RD BN 11TH MARINES
	O/O GS	1ST MARDIV

3. OBSERVER AND RADAR ASSIGNMENTS

UNIT	ASSIGNED OBSERVER/RADAR	FLOT POINTS
1ST BN 1ST MARINES	FO11 CO A 1ST BN 1ST MARINES	01-02
	FO12 CO B 1ST BN 1ST MARINES	03-04
	FO13 CO C 1ST BN 1ST MARINES	05-06
2ND BN 1ST MARINES	FO14 CO E 2ND BN 1ST MARINES	07-08
	FO15 CO F 2ND BN 1ST MARINES	09-10
	FO16 CO G 2ND BN 1ST MARINES	11-12
3RD BN 1ST MARINES	FO17 CO I 3RD BN 1ST MARINES	13-14
	FO18 CO K 3RD BN 1ST MARINES	15-16
	FO19 CO L 3RD BN 1ST MARINES	17-18
FDC 11TH MARINES	CBR 01 11TH MARINES	
	CBR 02 11TH MARINES	
	CBR 03 11TH MARINES	
	CBR 04 11TH MARINES	
	UAV 09	

4. MAP MOD

A. Center coordinates: 776000 03537000
B. Grid zone: +34
C. Datum: WGS 84

5. TARGET NUMBER ASSIGNMENTS

STATION	TARGET BLOCK	ASR NUMBER BLOCK
FFCC IMEF	AL1001-1499	ALA0001-ALA0999
FFCC FWD IMEF	AL1501-1999	ALA1001-ALA1999
FSCC 1ST MARDIV	AL3001-3499	ALB0001-ALB0999
FSCC FWD 1ST MARDIV	AL3501-3999	ALB1OO1-ALB1999
TACC MASS3 3MAW	AL4001-4499	ALC0001-ALC0999
DASC MASS3 3MAW	AL4501-4999	ALD0001-ALD0999
FSCC 1ST MARINES	AA0001-0499	AAA0001-AAA0499
FSCC FWD 1ST MARINES	AA0501-0999	AAA0501-AAA9999
FSCC 1ST BN 1ST MARINES	AA1001-1499	AAB0001-AAB0199
FSCC 2ND BN 1ST MARINES	AA2001-2499	AAC0001-AAC0199
FSCC 3RD BN 1ST MARINES	AA3001-3499	AAD0001-AAD0199
FSCC 5TH MARINES	AE0001-0499	AEA0001-AEA0499
FSCC FWD 5TH MARINES	AE0501-0999	AEA0501-AEA0599
FSCC 1ST BN 5TH MARINES	AE1001-1499	AEB0001-AEB0199
FSCC 2ND BN 5TH MARINES	AE2001-2499	AEC0001-AEC0199
FSCC 3RD BN 5TH MARINES	AE3001-3499	AED0001-AED0199
FSCC 7TH MARINES	AG0001-0499	AGA0001-AGA0499
FSCC FWD 7TH MARINES	AG0501-0999	AGA0501-AGA0999
FSCC 1ST BN 7TH MARINES	AG1001-1499	AGB0001-AGB0199
FSCC 2ND BN 7TH MARINES	AG2001-2499	AGC0001-AGC0199
FSCC 3RD BN 7TH MARINES	AG3001-3499	AGD0001-AGD0199
FDC 11TH MARINES	AL6001-6499	ALG0001-ALG0199
TPC 11TH MARINES	AL6701-6999	ALH0001-ALH0199
FDC/A 6-27FA CARTY IIICORPS	AL6501-6699	
FDC 1ST BN 11TH MARINES	AG4001-4999	
A BTRY 1ST BN 11TH MARINES	AG5001-5199	
B BTRY 1ST BN 11TH MARINES	AG5201-5399	
C BTRY 1ST BN 11TH MARINES	AG5401-5599	
FDC 2ND BN 11TH MARINES	AC4001-4999	
E BTRY 2ND BN 11TH MARINES	AC5001-5199	
F BTRY 2ND BN 11TH MARINES	AC5201-5399	
G BTRY 2ND BN 11TH MARINES	AC5401-5599	
FDC 3RD BN 11TH MARINES	AA4001-4999	
I BTRY 3RD BN 11TH MARINES	AA5001-5199	
K BTRY 3RD BN 11TH MARINES	AA5201-5399	
L BTRY 3RD BN 11TH MARINES	AA5401-5599	
FDC 5TH BN 11TH MARINES	AL8001-8999	
R BTRY 5TH BN 11TH MARINES	AL9001-9199	

S BTRY 5TH BN 11TH MARINES AL9201-9399
T BTRY 5TH BN 11TH MARINES AL9401-9599

COMMANDER'S CRITERIA

A. TARGET SELECTION STANDARDS AND DECAY TIMES:

TARGET	MAX TLE (m)	MAX REP AGE (min)	DECAY TIME
CP, REGIMENT	300	60	4 HOURS
CP, BATTALION	300	45	"
CP, DIVISION	300	240	"
CP, SMALL	250	30	"
ARTY, TOWED	200	45	1 HOUR
ARTY, UNKNOWN	200	45	"
MSL, MEDIUM	400	60	30 MIN
APC	200	30	30 MIN
ARMORED, VEHICLE	200	30	30 MIN
AA, TROOPS	400	60	30 MIN
AA, TRPS AND ARMOR	400	45	30 MIN
AA, TROOPS AND VEHICLE	400	45	30 MIN
ADA, MSL	100	90	30 MIN
BUNKER	100	300	30 MIN
PATROL	100	30	10 MIN

Note: Fire Requests will not be checked against TSS.

B. HVT LIST:

TARGET CATEGORY	RELATIVE VALUE									
C3	■	■	■	■	■	■	■	■	■	
FIRE SUPPORT	■	■	■	■	■	■	■	■		
MANEUVER	■	■	■	■	■	■	■			
ADA	■	■	■							
ENGINEER	■									
RSTA	■									
REC	■	■	■							
NUC/CHEM	■	■								
POL	■	■	■	■	■					
AMMUNITION	■	■	■							
MAINTENANCE	■	■	■	■	■	■	■			
LIFT	■	■	■							
LOC	■									

C. ATTACK GUIDANCE:

ATTACK GUIDANCE MATRIX		
TARGET	**EFFECTS**	**WHEN**
C3	Destroy	A
FIRE SUPPORT	15%	A
MANUEUVER	Neutralize	I
ADA	Suppress	P

ENGINEER	Suppress	A
RSTA	10%	A
REC	Neutralize	A
NUC/CHEM	Destroy	I
POL	15%	P
AMMUNITION	20%	P
MAINTENANCE	Neutralize	A
LIFT	Suppress	P
LOC	Suppress	P

D. HPT LIST:

HPT MATRIX												
TARGET	**EFFECTS**	WHEN	RELATIVE VALUE									
CP, REGIMENT	Destroy											
ARTY, TOWED	Neutralized											
TANK, MED	Neutralize											
AA, TRPS & ARMOR	Suppress											

E. TARGET AND FIRE SUPPORT SYSTEM EXCLUSIONS:

Railroad targets will not be attacked due to the need to maintain the infrastructure of the country.

F. MISSION PRIORITIZATION:

TARGET TYPE:	Weight 30	PRIORITY OF FIRES:	Weight 50
ON-CALL TGTS:	Weight 5	TAI:	Weight 15

G. MISSION CUTOFF VALUES:

FA:	20	AIR:	30
MORTAR:	10	NGF:	10
Rkt/Msl	30	Aviation	20

H. PRIORITY OF FIRE TO:

UNIT	RANK
1/1	(1)
1MR	(3)
3/1	(2)
5MR	(4)
2/1	(3)
7MR	(4)

I. TARGET AREA OF INTEREST RANK:

TA11MD 1

J. SYSTEM ATTACK PARAMETERS:

FA: FDC 3RD BN 11TH MARINES NGF:FSCC 1SR MARDIV
AIR: FSCC 1ST MARDIV

M. Immediate missions will be routed to the FDC 3RD BN 11TH MARINES.

N. AIR ATTACK METHODS:

TARGET CATEGORY/TYPE	PREFERENCE
C3/CP Regiment	6 GP bombs, 4 Napalm

O. NSFS ATTACK METHODS:

TARGET CATEGORY/TYPE	PREFERENCE
FS/Missle, Med	20 rds, 5"54 HE, 20 rds WP

P. FA RESTRICTIONS: Maximum volleys for FA is 3, (This has to entered at each OPFAC under the FUs as the units with restrictions, using DETAILED attack analysis) and maximum fire units per target for Div. FSCC/Regt. FDC is 7. Maximum fire units per target for Regt. FSCC/BN. FDC is 3. Concrete piercing fuzes are restricted from use. (This data is entered for each FSCC UNIT ID that the unit is supported by).

Q. FA ATTACK METHODS:

TARGET CATEGORY/TYPE	PREFERENCE
FS/Arty, Towed	Battery 2 volleys DPICM, 4 volleys HE/VT
MAN/AA, Troops & Armor	Bn, 1 volley DPICM, 3 volleys HE/PD

R. FA IMMEDIATE ATTACK METHODS:

Immediate Suppression: SECTION, 1 volley, DPICM
Immediate Smoke: SECTION, 1 volley WP/PD, 1 volley WP2/TI

S. TARGET DUPLICATION:

TARGET SEPARATION DISTANCE: ANY TARGETS: 100 meters
SIMILAR TARGETS: 400 meters

T. FIRE SUPPORT SYSTEM BUFFERS:

FA:	600 meters	NSFS:	750 meters
Mortar:	400 meters	AIR:	1000 meters
Aviation:	500 meters	Rkt/Msl	1000 meters

1. FIRE PLANNING:

As per reference (b).

1. ARTILLERY TARGET INTELLIGENCE (ATI):

A. SUSPECT TARGET MAXIMUM OVERLAY: 30%

B. ATI REPORTING. The following will be reported in ATI message formats:

(1) All enemy activity that is judged by the observer as likely to remain in place for at least two hours.

1. BATTLEFIELD GEOMETRY. Current support data. Initial support data is provided in enclosure 1 of this TAB.

2. AMMUNITION AND FIRING UNITS

A. CONTROLLED SUPPLY RATE FOR 155MM:

AMMUNITION	D-DAY	S-DAY
HE	80	100
RAP	60	100
DPICM	120	160
Copperhead	0	8

B. CRITICAL AMMUNITION LEVELS FOR 155MM

AMMUNITION	DEGRADED	CRITICAL	NO-GO
HE	60%	40%	10%
RAP	50%	30%	10%
DPICM	65%	40%	15%
Copperhead	50%	25%	20%

1. MET DISTRIBUTION:

MET SECTION	SUPPORTED UNIT
FDC 11TH MARINES	MET 04
FDC 1ST BN 11TH MARINES	MET 01
FDC 2ND BN 11TH MARINES	MET 02
FDC 3RD BN 11TH MARINES	MET 03

1. COMMUNICATIONS:

A. Communications will be conducted in accordance with reference (c).

B. Subscriber table and digital nets guard chart are provided in enclosure 2 of this TAB.

1. REPORTS: Battery BCS submit an AFU;UPDATE with OUTTIL immediately prior to displacement and a corrected AFU;UPDATE with READY when in place and guns are up. All BCS will report ammo to their controlling AFATDS.

ENCLOSURES:

1 - INITIAL GEOMETRY
2 - DIGITAL GUARD CHART
3 - SUBSCRIBER TABLE

ACKNOWLEDGE RECEIPT

J. A. LEJEUNE

8. General, U. S. Marine Corps
9. Commanding

OFFICIAL:

S. D. BUTLER
Col USMC
G-3

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ENCLOSURE 1 (Initial geometry) to TAB B (Marine Corps Fire Support System Plan) to Appendix 19 (Fire Support) to Annex C (Operations) to Operations Order 2-00 (Operation SEA LION)

Note: All geometry is effective at the start of operations unless otherwise indicated by an on-call time.

ZONES.

A. ZO11MF

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	423 626/5	34	2	427 573/50	34	3	435 455/190	34
4	431 360/165	34	5	436 278/287	34	6	451 245/170	34
7	482 220/170	34	8	560 165/185	34	9	642 148/190	34
10	719 150/195	34	11	780 168/200	34	12	360 170/210	35
13	370 440/195	35	14	380 720/180	35	15	410 740/0	34

B. ZO11MD

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	423 626/5	34	2	427 573/50	34	3	435 455/190	34
4	431 360/165	34	5	436 278/287	34	6	451 245/170	34
7	482 220/170	34	8	510 201/175	34	9	702 319/190	34
10	773 331/180	34	11	780 420/140	34	12	777 500/110	34
13	765 528/80	34	14	773 567/5	34	15	597 625/5	34
16	514 636/5	34						

C. ZO12MD

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	773 567/5	34	2	765 528/80	34	3	777 500/110	34
4	780 420/140	34	5	773 331/180	34	6	366 391/195	35
7	377 587/65	35	8	236 588/5	35			

D. ZO11MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	558 550/110	34	2	555 489/170	34	3	556 427/180	34
4	557 377/165	34	5	561 345/110	34	6	599 285/140	34
7	718 358/160	34	8	712 482/155	34	9	710 525/50	34
10	665 530/85	34	11	656 528/90	34	12	617 548/70	34

13	609	549/90	34	14	598	547/90

E. ZO11A1

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	558 550/110	34	2	555 489/170	34	3	556 427/180	34
4	557 377/165	34	5	617 382/170	34	6	617 548/70	34
7	609 549/90	34	8	598 547/90				

F. ZO12A1

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	617 548/70	34	2	617 382/170	34	3	666 368/175	34
4	665 530/85	34	5	656 528/90	34			

G. ZO13A1

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	665 530/85	34	2	666 368/175	34	3	718 358/160	34
4	712 482/155	34	5	710 525/50	34			

H. ZO17MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	427 573/50	34	2	435 455/190	34	3	431 360/165	34
4	436 278/155	34	5	599 285/140	34	6	561 345/110	34
7	557 377/165	34	8	556 427/180	34	9	555 489/170	34
10	558 550/110	34	11	480 565/70	34	12	437 568/60	34

I. ZO11A7

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	558 550/110	34	2	555 489/170	34	3	556 427/180	34
4	557 377/165	34	5	561 345/110	34	6	599 285/140	34
7	546 283/140	34	8	517 342/140	34	9	516 558/140	34

J. ZO12A7

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	51600 55808	34	2	517 342/140	34	3	54600 28273	34
4	50500 28096	34	5	489 341/165	34	6	480 565/70	34

K. ZO13A7

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	480 565/70	34	2	489 341/130	34	3	50500 28096	34
4	436 278/155	34	5	431 360/165	34	6	435 455/190	34
7	427 573/50	34	8	437 568/60	34			

L. ZO15MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	710 525/50	34	2	712 482/155	34	3	718 358/160	34

4	773	331/140	34	5	780	421/140	34	6	777	500/110	34
7	765	528/80	34								

FLOTs.

A. FL11MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	707 487/150	34	2	666 497/160	34	3	632 511/155	34
4	598 519/120	34	5	555 518/100	34			

B. FL17MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	554 524/110	34	2	501 518/150	34	3	432 519/160	34

C. FL15MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	778 477/140	34	2	713 495/135	34

CFLs.

A. CL17MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	556 503/110	34	2	433 494/190	34

B. CL11MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	712 470/155	34	2	609 498/180	34	3	555 498/170	34

C. CL15MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	777 470/140	34	2	713 480/150	34			

FSCLs.

A. FS11MD

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	367 391	35	2	773 331/140	34	3	718 358/90	34
4	599 285	34	5	436 278/125	34			

RFLs.

A. RL11MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	620 405/170	34	2	599 418/175	34	3	586 436/180	34

RFAs.

A. RF31MF (ONCALL, Effective from H+10 to H+480) Restriction: No AIR or FA

delivered FASCAM.

PT#	GRID/ALT	GZ	RADIUS
1	516 416/80	34	1300

NFAs.

A. NF11MF

GRID/ALT	GZ	RADIUS
715 535/90	34	1200m

OBJECTIVES.

A. OB31MF

GRID/ALT	GZ	RADIUS
750 290/160	34	2500m

B. OB11MR

GRID/ALT	GZ	RADIUS
616 435/190	34	800m

C. OB21MR

GRID/ALT	GZ	RADIUS
620 330/150	34	1000m

FFAs.

A. FF11MF (ONCALL from H+10 to H+480)

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	WIDTH
1	709 206/180	34	2	680 225/225	34	2000

PHASE LINES.

A. PL11MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	709 481/130	34	2	556 482/150	34

B. PL21MR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	712 446/170	34	2	556 455/180	34

BATTLE AREAS.

A. CLOSE

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	427 573	34	2	437 568	34	3	480 565	34
4	558 550	34	5	598 547	34	6	609 549	34
7	617 548	34	8	656 528	34	9	665 530	34
10	710 525	34	11	765 528	34	12	777 500	34
13	780 420	34	14	773 331	34	15	718 358	34
16	599 285	34	17	436 278	34	18	431 360	34
19	435 455	34						

B. REAR

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	423 626	34	2	427 573	34	3	437 568	34
4	480 565	34	5	558 550	34	6	598 547	34
7	609 549	34	8	617 548	34	9	656 528	34
10	665 530	34	11	710 525	34	12	765 528	34
13	773 567	34	14	597 625	34	15	514 636	34

C. DEEP

PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ	PT#	GRID/ALT	GZ
1	718 358	34	2	599 285	34	3	436 278	34
4	451 245	34	5	482 220	34	6	560 165	34
7	642 148	34	8	719 150	34	9	780 168	34
10	780 241	34	11	773 331	34			

TARGET BUILDUP AREAS.

A. TB11MD

GRID/ALT	GZ	RADIUS	TARGET CATEGORY/TYPE	THRESHOLD
690 432/190	34	1000m	C3/Battalion	3

B. TB11MD

GRID/ALT	GZ	RADIUS	TARGET CATEGORY/TYPE	THRESHOLD
447 451/200	34	1000m	C3/Battalion	3

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ENCLOSURE 2 (Communications Guard Chart) to TAB B (Marine Corps Fire Support System Plan) to Appendix 19 (Fire Support) to Annex C (Operations) to Operations Order 2-00 (Operation SCUMBAG)

Digital Guard Chart C=Net Ctrl X=Guard A=As Req W=When Dir R=Relay																					
PROTOCOL L=LAN, T=TACFIRE V=VMF 1=188-220																					
KEY TIME																					
FSK 1=12/24 2=13/21 3=NRZ 4=CDP																					

Digital Guard Chart C=Net Ctrl X=Guard A=As Req W=When Dir R=Relay																					
BLK MODE																					
Data Rate (bps)																					
CARRIER DROP OUT TIME																					0.5
COMSEC																					
1MFFFCC	C																				X
3AWTACC	X																				
1MDFSCC	X	C																			X
3AWDASC	X	X																			C

Digital Guard Chart C=Net Ctrl X=Guard A=As Req W=When Dir R=Relay																					
1MR FSCC		X	C																		X
1a1 FSCC			X						X												X
1a1 FOs									X												
2a1 FSCC			X							X											X
2a1 FOs										X											
3a1 FSCC			X								X										X
3a1 FOs											X										
5MR FSCC		X		C																	X
1a5 FSCC				X									X								X
1a5 FOs													X								
2A5 FSCC				X										X							X
2a5 FOs														X							
3A5 FSCC				X											X						X
3a5 FOs															X						
7MR FSCC		X			C																X
1a7 FSCC					X												X				X
1a7 FOs																	X				
2a7 FSCC					X													X			X
2a7 FOs																		X			
3a7 FSCC					X														X		X
3a7 FOs																			X		
11M FDC		X				C	X														
11M TPC							C	C													
11M MET								X													
11M RADAR								X													
UAV	X																				
111 FDC			X			X			C	C	C	C									
A11 FDC												X									

Digital Guard Chart C=Net Ctrl X=Guard A=As Req W=When Dir R=Relay																					
B11 FDC												X									
C11 FDC												X									
211 FDC				X		X							C	C	C	C					
E11 FDC																X					
F11 FDC																X					
G11 FDC																X					
311 FDC					X	X							C	C			C	C	C	C	
I11 FDC													X							X	
K11 FDC													X							X	
L11 FDC														X						X	
511 FDC						X								C	C						
Q11 FDC														X							
R11 FDC														X							
S11 FDC															X						
A27 FDC						X															

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21. 101730Z Sep 2000
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ENCLOSURE 3 (Subscriber Table) to TAB B (Marine Corps Fire Support System Plan) to Appendix 19 (Fire Support) to Annex C (Operations) to Operations Order 2-00 (Operation SCUMBAG)

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
1	FFCC IMEF	onemef	MFFC	LAN		193.8.12.1	255.255.245.224	192.179.8.31	
2	FFCC IMEF		TAR/HR	VMF	ADAPTIVE	11			3/12

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
1	FFCC FWD IMEF	onemeffwd	193.8.12.2		PD via MFFC
2	FSCC 1ST MARDIV	onemar	193.8.08.11		PD via MFFC
3	FSCC FWD 1ST MARDIV	onemardivfwd	193.8.08.12		PD via MFFC
4	TACC MASS3 3MAW	tacc	193.8.12.111		PD via MFFC
5	TAOC MASS3 3MAW	taoc	193.8.11.112		PD via MFFC
6	DASC MASS3 3MAW		14		PD via TAR/HR

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
7	DASC MASS3 3MAW		TAR/HR	VMF	ADAPTIVE	03			1/12
8	DASC MASS3 3MAW		DFSC	VMF	ADAPTIVE	14			5/11

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
9	DASC FWD MASS3 3MAW		15		PD via DFFC net
1	0 FSCC 1ST MARDIV			12	PD via DFFC net
11	FSCC FWD 1ST MARDIV		13		PD via DFFC net

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
1	2 FSCC 1ST MARDIV		MFFC	LAN		193.8.08.1	255.255.241.232	192.167.8.20	
13	FSCC 1ST MARDIV		DFSC	VMF	ADAPTIVE	12			1/11

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE

1	FFCC IMEF	onemef	193.8.12.1	
	PD via MFFC net			
2	FFCC FWD IMEF	onemeffwd	193.8.12.2	
	PD via MFFC net			
3	FSCC FWD 1ST MARDIV	onemardivfwd		193.8.08.2
	PD via MFFC net			
4	DASC MASS3 3MAW		14	
	PD via DFSC net			
5	DASC FWD MASS3 3MAW		15	
	PD via DFSC net			
6	FSCC 1ST MARINES		16	
	PD via DFSC net			
7	FSCC FWD 1ST MARINES		17	
	PD via DFSC net			
8	FSCC 5TH MARINES		18	
	PD via DFSC net			
9	FSCC FWD 5TH MARINES		19	
	PD via DFSC net			
10	FSCC 7TH MARINES		20	
	PD via DFSC net			
11	FSCC FWD 7TH MARINES		21	
	PD via DFSC net			
12	FDC 11TH MARINES		22	
	PD via DFSC net			
13	FDC FWD 11TH MARINES		23	
	PD via DFSC net			
14	TPC 11TH MARINES			
	PI via FDC MAIN 11MAR			
15	TPC FWD 11TH MARINES			
	PI via FDC FWD 11MAR			

LINE #	OWN	NAME	HOSTNAME	NET ACCESS	PROTOCOL	NET MASK	ADD / IP ADDRESS	SUBNET ADD	ROUTER	RANK
1	6	FSCC 1ST MARINES		DFSC	VMF	ADAPTIVE				
			16		4/11					
17	FSCC 1ST MARINES			RFSC	VMF	ADAPTIVE		02		
			1/10							

LINE #	STATION	NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
1	8	FSCC 1ST MARDIV		12		PD via DFSC net
19		FSCC FWD 1ST MARDIV		13		PD via DFSC net
2	0	DASC MASS3 3MAW		14		PD via DFSC net
21		DASC FWD MASS3 3MAW		15		PD via DFSC net
22		FSCC 5TH MARINES		18		PD via DFSC net
23		FSCC FWD 5TH MARINES		19		PD via DFSC net

24 FSCC 7TH MARINES 20 PD via DFSC net
25 FSCC FWD 7TH MARINES 21 PD via DFSC net
26 FDC 11TH MARINES 22 PD via DFSC net
27 FDC FWD 11TH MARINES 23 PD via DFSC net
28 FSCC FWD 1ST MARINES 03 PD via RFSC net
29 FSCC 1ST BN 1ST MARINES 04 PD via RFSC net
3 0 FSCC FWD 1ST BN 1ST MARINES 05 PD via RFSC net
31 FSCC 2ND BN 1ST MARINES 06 PD via RFSC net
32 FSCC FWD 2ND BN 1ST MARINES 07 PD via RFSC net
33 FSCC 3RD BN 1ST MARINES 08 PD via RFSC net
34 FSCC FWD 3RD BN 1ST MARINES 09 PD via RFSC net
35 FDC 1ST BN 11TH MARINES 10 PD via RFSC net
36 FDC FWD 1ST BN 11TH MARINES 11 PD via RFSC net

LINE #	OWN NAME	HOSTNAME	NET ACCESS	PROTOCOL	NET MASK	ADD / IP ADDRESS	SUBNET ADD	ROUTER RANK
37	FSCC 1ST BN 1ST MARINES	RFSC	VMF	ADAPTIVE	04	1/10		
38	FSCC 1ST BN 1ST MARINES	COF	TACFIRE	1/3/3/5	C			

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
39	FSCC 1ST MARINES PD via RFSC net		02		
40	FSCC FWD 1ST MARINES PD via RFSC net		03		
41	FSCC FWD 1ST BN 1ST MARINES PD via RFSC net		05		
42	FSCC 2ND BN 1ST MARINES PD via RFSC net		06		
43	FSCC FWD 2ND BN 1ST MARINES PD via RFSC net		07		
44	FSCC 3RD BN 1ST MARINES PD via RFSC net		08		
45	FSCC FWD 3RD BN 1ST MARINES PD via RFSC net		09		
46	FDC 1ST BN 11TH MARINES PD via RFSC net		10		
47			A		SD via COF A
48	FDC FWD 1ST BN 11TH MARINES PD via RFSC net		11		
49			B		SD via COF A

50	FO11 CO_A 1ST BN 1ST MARINES	E	11	PD via COF A
51				SI via FDC MAIN
52	FO12 CO_B 1ST BN 1ST MARINES	F	12	PD via COF A
53				SI via FDC MAIN
54	FO13 CO_C 1ST BN 1ST MARINES	G	13	PD via COF A
55				SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
56	F/O/A/11/___	COFA	4	E

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
57	COFA	_/_/_/1_/11_	Y	A
58		F/W/D/1_/11_	Y	B
59		F/S/C/1_/1__	Y	C
60		F/W/D/1_/1__	Y	D
61		/ /A/1_/11_	Y	I
62		F/O/B/12/___	N	F
63		F/O/C/13/___	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
64	F/O/B/12/___	COFA	4	F

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
65	COFA	_/_/_/1_/11_	Y	A
66		F/W/D/1_/11_	Y	B
67		F/S/C/1_/1__	Y	C
68		F/W/D/1_/1__	Y	D
69		/ /A/1_/11_	Y	I
70		F/O/A/11/___	N	E
71		F/O/C/13/___	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
72	F/O/C/13/___	COFA	4	G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
73	COFA	_/_/_/1_/11_	Y	A
74		F/W/D/1_/11_	Y	B
75		F/S/C/1_/1__	Y	C
76		F/W/D/1_/1__	Y	D

77	/ /A/1_/11_	Y	I
78	F/O/A/11/___	N	E
79	F/O/B/12/___	N	F

LINE #	OWN	NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
80		FSCC 2ND BN 1ST MARINES		RFSC	VMF	ADAPTIVE			06	5/10
81		FSCC 2ND BN 1ST MARINES		COFA	TACFIRE	1/3/3/5			K	N/A

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
82	FSCC 1ST MARINES		02		
	PD via RFSC net				
83	FSCC FWD 1ST MARINES		03		
	PD via RFSC net				
84	FSCC FWD 2ND BN 1ST MARINES		07		
	PD via RFSC net				
85	FSCC 1ST BN 1ST MARINES		04		
	PD via RFSC net				
86	FSCC FWD 1ST BN 1ST MARINES		05		
	PD via RFSC net				
87	FSCC 3RD BN 1ST MARINES		08		
	PD via RFSC net				
88	FSCC FWD 3RD BN 1ST MARINES		09		
	PD via RFSC net				
89	FDC 1ST BN 11TH MARINES		10		
	PD via RFSC net				
90			A		SD via COF B
91	FDC FWD 1ST BN 11TH MARINES		11		PD via RFSC net
92			B		SD via COF B
93	FO14 CO_E 2ND BN 1ST MARINES		M	14	PD via COF B
94					SI via FDC MAIN
95	FO15 CO_F 2ND BN 1ST MARINES		N	15	PD via COF B
96					SI via FDC MAIN
97	FO16 CO_G 2ND BN 1ST MARINES		O	16	PD via COF B
98					SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
99	F/O/E/14/___	COFB	4	M	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
100	COFB	_/_/_/1_/11_	Y	A	
101		F/W/D/1_/11_	Y		B
102		F/S/C/2_/1__	Y		K
103		F/W/D/2_/1__	Y		L

104	_/_/B/1_/11_	Y	0
105	F/O/E/15/___	N	N
106	F/O/G/16/___	N	O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
107	F/OF/15/___	COFB	4	M

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
	1 08	COFB	_/_/_/1_/11_ Y	A
109		F/W/D/1_/11_	Y	B
110		F/S/C/2_/1__	Y	K
111		F/W/D/2_/1__	Y	L
112		_/_/B/1_/11_	Y	0
113		F/O/E/14/___	N	M
114		F/O/G/16/___	N	O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
	1 15	F/O/G/16/___	COFB 4	O

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
	1 16	COFB	_/_/_/1_/11_ Y	A
117		F/W/D/1_/11_	Y	B
118		F/S/C/2_/1__	Y	K
119		F/W/D/2_/1__	Y	L
120		_/_/B/1_/11_	Y	0
121		F/O/E/14/___	N	M
122		F/O/F/15/___	N	N

LINE #	OWN NAME	HOSTNAME	NET PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
1	23	FSCC 3RD BN 1ST MARINES	RFSC	VMF	ADAPTIVE			
	08		7/10					
124	FSCC 3RD BN 1ST MARINES	COFC	TACFIRE	1/3/3/5		C		

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
1	25	FSCC 1ST MARINES			02
		PD via RFSC net			
126		FSCC FWD 1ST MARINES		03	
		PD via RFSC net			
127		FSCC FWD 3RD BN 1ST MARINES		09	
		PD via RFSC net			
128		FSCC 1ST BN 1ST MARINES		04	
		PD via RFSC net			
129		FSCC FWD 1ST BN 1ST MARINES		05	
		PD via RFSC net			
130		FSCC 2ND BN 1ST MARINES		06	
		PD via RFSC net			

131 FSCC FWD 2BN 1ST MARINES 07
PD via RFSC net
132 FDC 1ST BN 11TH MARINES 10
PD via RFSC net
133 A SD via
COF C
134 FDC FWD 1ST BN 11TH MARINES 11
PD via RFSC net
135 B SD via
COF C
136 FO17 CO I 3RD BN 1ST MARINES E 17 PD via
COF C
137 SI via
FDC MAIN
138 FO18 CO K 3RD BN 1ST MARINES F 18 PD via
COF C
139 SI via
FDC MAIN
140 FO19 CO K 3RD BN 1ST MARINES G 19
PD via COF C
141 SI via
FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
142	F/O/I/17/___	COFC	4	G	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
1	43	COFC	_/_/_/1_/11_	Y	A
144		F/W/D/1_/11_	Y		B
145		F/S/C/3_/1__	Y		C
146		F/W/D/3_/1__	Y		D
147		_/_/C/1_/11_	Y		I
148		F/O/H/18/___	N		F
149		F/O/I/19/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
1	50	F/O/K/18/___	COFC	4	F

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
1	51	COFC	_/_/_/1_/11_	Y	A
152		F/W/D/1_/11_	Y		B
153		F/S/C/3_/1__	Y		C
154		F/W/D/3_/1__	Y		D
155		_/_/C/1_/11_	Y		I
156		F/O/I/17/___	N		E
157		F/O/L/19/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD

1 58 F/OLI/19/___ COFC 4 G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
1	59	COFC _/_/_/1_/11_	Y	A
160		F/W/D/1_/11_	Y	B
161		F/S/C/3_/1__	Y	C
162		F/W/D/3_/1__	Y	D
163		_/_/C/1_/11_	Y	I
164		F/O/I/17/___	N	E
165		F/O/K/18/___	N	F

LINE #	OWN RANK	NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD
1	66	FSCC 5TH MARINES	DFSC 6/11	VMF	ADAPTIVE				18
167		FSCC 5TH MARINES	RFSC 1/10	VMF	ADAPTIVE				02

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
1	68	FSCC 1ST MARDIV PD via DFSC net			12
169	FSCC FWD 1ST MARDIV PD via DFSC net				13
170	DASC MASS3 3MAW PD via DFSC net				14
171	DASC FWD MASS3 3MAW PD via DFSC net				15
172	FSCC 1ST MARINES PD via DFSC net				16
173	FSCC FWD 1ST MARINES PD via DFSC net				17
174	FSCC 7TH MARINES PD via DFSC net				20
175	FSCC FWD 7TH MARINES PD via DFSC net				21
176	FDC 11TH MARINES PD via DFSC net				22
177	FDC FWD 11TH MARINES PD via DFSC net				23
178	FSCC FWD 5TH MARINES PD via RFSC net				03
179	FSCC 1ST BN 5TH MARINES PD via RFSC net				04
180	FSCC FWD 1ST BN 5TH MARINES PD via RFSC net				05
181	FSCC 2ND BN 5TH MARINES PD via RFSC net				06
182	FSCC FWD 2ND BN 5TH MARINES PD via RFSC net				07
183	FSCC 3RD BN 5TH MARINES PD via RFSC net				08
184	FSCC FWD 3RD BN 5TH MARINES PD via RFSC net				09

185 FDC 2ND BN 11TH MARINES 10
PD via RFSC net
186 FDC FWD 2ND BN 11TH MARINES 11
PD via RFSC net

LINE #	OWN ROUTER #	RANK	NAME	HOSTNAME	NET ACCESS	PROTOCOL	NET	ADD / IP ADDRESS	SUBNET MASK	ADD
1		87	FSCC 1ST BN 5TH MARINES		RFSC	VMF	ADAPTIVE			
			04		1/10					
188			FSCC 1ST BN 5TH MARINES		COFA	TACFIRE	1/3/3/5		C	

LINE #	STATION	NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
1	89	FSCC 5TH MARINES				02
		PD via RFSC net				
190		FSCC FWD 5TH MARINES		03		
		PD via RFSC net				
191		FSCC FWD 1ST BN 5TH MARINES		05		
		PD via RFSC net				
192		FSCC 2ND BN 5TH MARINES		06		
		PD via RFSC net				
193		FSCC FWD 2ND BN 5TH MARINES		07		
		PD via RFSC net				
194		FSCC 3RD BN 5TH MARINES		08		
		PD via RFSC net				
195		FSCC FWD 3RD BN 5TH MARINES		09		
		PD via RFSC net				
196		FDC 2ND BN 11TH MARINES		10		
		PD via RFSC net				
197				A		
		SD via COF A				
198		FDC FWD 2ND BN 11TH MARINES		11		
		PD via RFSC net				
199				B		SD via COF A
2	00	FO51 CO A 1ST BN 5TH MARINES				E
	51	PD via COF A				
201						SI via FDC MAIN
202		FO52 CO B 1ST BN 5TH MARINES			F	52
		PD via COF A				
203						SI via FDC MAIN
204		FO53 CO C 1ST BN 5TH MARINES			G	53
PD via COF A						
205						SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
206	F/O/A/51/___	COFA	4	E	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
207	COFA	_/_/_/2_/11_	Y	A
208		F/W/D/2_/11_	Y	B

209	F/S/C/1_/5__	Y	C
210	F/W/D/1_/5__	Y	D
211	_/_ /E/2_/11_	Y	I
212	F/O/B/52/___	N	F
213	F/O/C/53/___	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
214	F/O/B/52/___	COFA	4	F

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
215	COFA	_/_/_/2_/11_	Y	A
216		F/W/D/2_/11_	Y	B
217		F/S/C/1_/5__	Y	C
218		F/W/D/1_/5__	Y	D
219		_/_ /E/2_/11_	Y	I
220		F/O/A/51/___	N	E
221		F/O/C/53/___	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
222	F/O/C/53/___	COFA	4	G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
223	COFA	_/_/_/2_/11_	Y	A
224		F/W/D/2_/11_	Y	B
225		F/S/C/1_/5__	Y	C
226		F/W/D/1_/5__	Y	D
227		_/_ /E/2_/11_	Y	I
228		F/O/A/51/___	N	E
229		F/O/B/52/___	N	F

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
230	FSCC 2ND BN 5TH MARINES		RFSC	VMF	ADAPTIVE			06	5/10
231	FSCC 2ND BN 5TH MARINES		COFB	TACFIRE	1/3/3/5			K	

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
232	FSCC 5TH MARINES		02		
PD via RFSC net					
233	FSCC FWD 5TH MARINES			03	
PD via RFSC net					
234	FSCC FWD 2ND BN 5TH MARINES			07	
PD via RFSC net					
235	FSCC 1ST BN 5TH MARINES			04	
PD via RFSC net					
236	FSCC FWD 1ST BN 5TH MARINES		05		
PD via RFSC net					
237	FSCC 3RD BN 5TH MARINES		08		
PD via RFSC net					
238	FSCC FWD 3RD BN 5TH MARINES		09		
PD via RFSC net					

239 FDC 2ND BN 11TH MARINES 10
PD via RFSC net
240 A SD via
COF B
241 FDC FWD 2ND BN 11TH MARINES 11
PD via RFSC net
242 B SD via
COF B
243 FO54 CO E 2ND BN 5TH MARINES M 54 PD via
COF B
244 SI via
FDC MAIN
245 FO55 CO F 2ND BN 5TH MARINES N 55 PD via
COF B
246 SI via
FDC MAIN
247 FO56 CO G 2ND BN 5TH MARINES O 56 PD via
COF B
248 SI via
FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
249	F/O/E/54/___	COFB	4	M	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
250	COFB	_/_/_/2_/11_	Y	A	
251		F/W/D/2_/11_	Y		B
252		F/S/C/2_/5__	Y		K
253		F/W/D/2_/5__	Y		L
254		_/_/F/2_/11_	Y		0
255		F/O/F/55/___	N		N
256		F/O/G/56/___	N		O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
257	F/O/F/55/___	COFB	4	M	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
258	COFB	_/_/_/2_/11_	Y	A	
259		F/W/D/2_/11_	Y		B
260		F/S/C/2_/5__	Y		K
261		F/W/D/2_/5__	Y		L
262		_/_/F/2_/11_	Y		0
263		F/O/E/54/___	N		M
264		F/O/G/56/___	N		O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
265	F/O/G/56/___	COFB	4	O	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
266	COFB	_/_/_/2_/11_	Y	A	
267		F/W/D/2_/11_	Y		B

268		F/S/C/2_/5__	Y	K
269		F/W/D/2_/5__	Y	L
270		_/_/F/2_/11_	Y	0
271		F/O/E/54/___	N	M
272		F/O/F/55/___	N	N

LINE #	OWN NAME	HOSTNAME	NET PROTOCOL	NET ADD / IP ADDRESS	SUBNET MASK	ROUTER RANK ADD
273	FSCC 3RD BN 5TH MARINES	RFSC	VMF ADAPTIVE	7/10		08
274	FSCC 3RD BN 5TH MARINES	COFC	TACFIRE	1/3/3/5	C	

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE	
275	FSCC 5TH MARINES		02			PD via RFSC net
276	FSCC FWD 5TH MARINES		03			PD via RFSC net
277	FSCC FWD 3RD BN 5TH MARINES		09			PD via RFSC net
278	FSCC 1ST BN 5TH MARINES		04			PD via RFSC net
279	FSCC FWD 1ST BN 5TH MARINES		05			PD via RFSC net
280	FSCC 2ND BN 5TH MARINES		06			PD via RFSC net
281	FSCC FWD 2ND BN 5TH MARINES		07			PD via RFSC net
282	FDC 2ND BN 11TH MARINES		10			PD via RFSC net
283			A			SD via COF C
284	FDC FWD 2ND BN 11TH MARINES		11			PD via RFSC net
285			B			SD via COF C
286	FO57 CO I		E		57	PD via COF C
287						SI via FDC MAIN
288	FO58 CO K		F		58	PD via COF C
289						SI via FDC MAIN
290	FO59 CO L		G		59	PD via COF C
291						SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
292	F/O/I/57/___	COFC	4	G	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
293	COFC	_/_/_/2_/11_	Y	A

294	F/W/D/2_/11_	Y	B
295	F/S/C/3_/5__	Y	C
296	F/W/D/3_/5__	Y	D
297	_/_/G/2_/11_	Y	I
298	F/O/K/58/___	N	F
299	F/O/L/59/___	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
300	F/O/K/58/___	COFC	4	F

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
301	COFC	_/_/_/2_/11_	Y	A
302		F/W/D/2_/11_	Y	B
303		F/S/C/3_/5__	Y	C
304		F/W/D/3_/5__	Y	D
305		_/_/G/2_/11_	Y	I
306		F/O/I/57/___	N	E
307		F/O/L/59/__	N	G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
308	F/O/L/59/___	COFC	4	G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
309	COFC	_/_/_/2_/11_	Y	A
310		F/W/D/2_/11_	Y	B
311		F/S/C/3_/5__	Y	C
312		F/W/D/3_/5__	Y	D
313		_/_/G/2_/11_	Y	I
314		F/O/I/57/___	N	E
315		F/O/K/58/___	N	F

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
316	FSCC 7TH MARINES		DFSC	VMF	ADAPTIVE		20		8/11
317	FSCC 7TH MARINES		RFSC	VMF	ADAPTIVE		02		1/10

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
318	FSCC 1ST MARDIV		12		
	PD via DFSC net				
319	FSCC FWD 1ST MARDIV		13		
	PD via DFSC net				
320	DASC MASS3 3MAW		14		
	PD via DFSC net				
321	DASC FWDMASS3 3MAW		15		
	PD via DFSC net				
322	FSCC 1ST MARINES		16		
	PD via DFSC net				
323	FSCC FWD 1ST MARINES		17		
	PD via DFSC net				

324	FSCC 5TH MARINES	18
	PD via DFSC net	
325	FSCC FWD 5TH MARINES	19
	PD via DFSC net	
326	FDC 11TH MARINES	22
	PD via DFSC net	
327	FDC FWD 11TH MARINES	23
	PD via DFSC net	
328	FSCC FWD 7TH MARINES	03
	PD via RFSC net	
329	FSCC 1ST BN 7TH MARINES	04
	PD via RFSC net	
330	FSCC FWD 1ST BN 7TH MARINES	05
	PD via RFSC net	
331	FSCC 2ND BN 7TH MARINES	06
	PD via RFSC net	
332	FSCC FWD 2ND BN 7TH MARINES	07
	PD via RFSC net	
333	FSCC 3RD BN 7TH MARINES	08
	PD via RFSC net	
334	FSCC FWD 3RD BN 7TH MARINES	09
	PD via RFSC net	
335	FDC 3RD BN 11TH MARINES	10
	PD via RFSC net	
336	FDC FWD 3RD BN 11TH MARINES	11
	PD via RFSC net	

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
337	FSCC 1ST BN 7TH MARINES		RFSC	VMF	ADAPTIVE		04		1/10
338	FSCC 1ST BN 7TH MATINES		COFA	TACFIRE	1/3/3/5		C		

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
339	FSCC 5TH MARINES		02		
	PD via RFSC net				
340	FSCC FWD 5TH MARINES			03	
	PD via RFSC net				
341	FSCC 1ST BN 7TH MARINES			05	
	PD via RFSC net				
342	FSCC 2ND BN 7TH MARINES			06	
	PD via RFSC net				
343	FSCC FWD 2ND BN 7TH MARINES		07		
	PD via RFSC net				
344	FSCC 3RD BN 7TH MARINES			08	
	PD via RFSC net				
345	FSCC FWD 3RD BN 7TH MARINES		09		
	PD via RFSC net				
346	FDC 3RD BN 11TH MARINES			10	
	PD via RFSC net				
347			A		SD via COF A
348	FDC FWD 3RD BN 11TH MARINES		11		
	PD via RFSC net				

349			B		SD via COF A
350	FO71 CO A		E	71	PD via COF A
351					SI via FDC MAIN
352	FO72 CO B		F	72	PD via COF A
353					SI via FDC MAIN
354	FO73 CO C		G	73	PD via COF A
355					SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
356	F/O/A/71/___	COFA	4	E	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
357	COFA	_/_/_/3_/11_	Y	A	
358		F/W/D/3_/11_	Y		B
359		F/S/C/1_/7__	Y		C
360		F/W/D/1_/7__	Y		D
361		_/_ /I/3_/11_	Y		I
362		F/O/B/72/___	N		F
363		F/O/C/73/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
364	F/O/B/72/___	COFA	4	F	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
365	COFA	_/_/_/3_/11_	Y	A	
366		F/W/D/3_/11_	Y		B
367		F/S/C/1_/7__	Y		C
368		F/W/D/1_/7__	Y		D
369		_/_ /I/3_/11_	Y		I
370		F/O/A/71/__	N		E
371		F/O/C/73/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
372	F/O/C/73/___	COFA	4	G	

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
373	COFA	_/_/_/3_/11_	Y	A	
374		F/W/D/3_/11_	Y		B
375		F/S/C/1_/7__	Y		C
376		F/W/D/1_/7__	Y		D
377		_/_ /I/3_/11_	Y		I
378		F/O/A/71/__	N		E
379		F/O/B/72/___	N		F

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK

380 FSCC 2ND BN 7TH MARINES RFSC VMF ADAPTIVE 06
5/10
381 FSCC 2ND BN 7TH MARINES COFB TACFIRE 1/3/3/5 K

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
382	FSCC 7TH MARINES		02		
	PD via RFSC net				
383	FSCC FWD 7TH MARINES		03		
	PD via RFSC net				
384	FSCC FWD 2ND BN 7TH MARINES			07	
	PD via RFSC net				
385	FSCC 1ST BN 7TH MARINES			04	
	PD via RFSC net				
386	FSCC FWD 1ST BN 7TH MARINES			05	
	PD via RFSC net				
387	FSCC 3RD BN 7TH MARINES			08	
	PD via RFSC net				
388	FSCC FWD 3RD BN 7TH MARINES			09	
	PD via RFSC net				
389	FDC 3RD BN 11TH MARINES			10	
	PD via RFSC net				
390			A		
	SD via COF B				
391	FDC FWD 3RD BN 11TH MARINES			11	
	PD via RFSC net				
392			B		SD via COF B
393	FO74 CO E 2ND BN 7TH MARINES			M	74
	PD via COF B				
394					SI via FDC MAIN
395	FO75 CO F 2ND BN 7TH MARINES			N	75
	PD via COF B				
396					SI via FDC MAIN
397	FO76 CO G 2ND BN 7TH MARINES			O	76
	PD via COF B				
398					SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
399	F/O/E/74/___	COFB	4	M

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
400	COFB	_/_/_/3_/11_	Y	A
401		F/W/D/3_/11_	Y	B
402		F/S/C/2_/7__	Y	K
403		F/W/D/2_/7__	Y	L
404		_/_/K/3_/11_	Y	0
405		F/O/F/75/___	N	N
406		F/O/G/76/___	N	O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD

407	F/O/F/75/___	COFB	4	M

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD
408	COFB	_/_/_/3_/11_	Y	A
409		F/W/D/3_/11_	Y	B
410		F/S/C/2_/7__	Y	K
411		F/W/D/2_/7__	Y	L
412		_/_/K/3_/11_	Y	0
413		F/O/E/74/___	N	M
414		F/O/G/76/___	N	O

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD
415	F/O/G/76/___	COFB	4	O

LINE #	NET	LO GICAL NAME	COMPTR	PHY ADD
416	COFB	_/_/_/3_/11_	Y	A
417		F/W/D/3_/11_	Y	B
418		F/S/C/2_/7__	Y	K
419		F/W/D/2_/7__	Y	L
420		_/_/K/3_/11_	Y	0
421		F/O/E/74/___	N	M
422		F/O/F/75/___	N	N

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
423	FSCC 3RD BN 7TH MARINES		RFSC	VMF	ADAPTIVE		08		7/10
424	FSCC 3RD BN 7TH MARINES		COFC	TACFIRE	1/3/3/5		C		

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
425	FSCC 7TH MARINES		02		
	PD via RFSC net				
426	FSCC FWD 7TH MARINES			03	
	PD via RFSC net				
427	FSCC FWD 3RD BN 7TH MARINES			09	
	PD via RFSC net				
428	FSCC 1ST BN 7TH MARINES			04	
	PD via RFSC net				
429	FSCC FWD 1ST BN 7TH MARINES			05	
	PD via RFSC net				
430	FSCC 2ND BN 7TH MARINES			06	
	PD via RFSC net				
431	FSCC FWD 2ND BN 7TH MARINES			07	
	PD via RFSC net				
432	FDC 3RD BN 11TH MARINES			10	
	PD via RFSC net				
433			A		
	SD via COF C				
434	FDC FWD 3RD BN 11TH MARINES			11	
	PD via RFSC net				

435 B SD via COF C

436 FO77 CO I 3RD BN 7TH MARINES E 77 PD via COF C

437 SI via FDC MAIN

438 FO78 CO K 3RD BN 7TH MARINES F 78 PD via COF C

439 SI via FDC MAIN

440 FO79 CO L 3RD BN 7TH MARINES G 79 PD via COF C

441 SI via FDC MAIN

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
442	F/O/I/77/___	COFC		4	G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
443	COFC	_/_/_/3_/11_	Y	A	
444		F/W/D/3_/11_	Y		B
445		F/S/C/3_/7__	Y		C
446		F/W/D/3_/7__	Y		D
447		_/_/L/3_/11_	Y		I
448		F/O/K/78/___	N		F
449		F/O/L/79/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
450	F/O/K/78/___	COFC		4	F

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
451	COFC	_/_/_/3_/11_	Y	A	
452		F/W/D/3_/11_	Y		B
453		F/S/C/3_/7__	Y		C
454		F/W/D/3_/7__	Y		D
455		_/_/L/3_/11_	Y		I
456		F/O/I/77/___	N		E
457		F/O/L/79/___	N		G

LINE #	OWN NAME	NET	NET ACCESS	PHY ADD	
458	F/O/L/79/___	COFC		4	G

LINE #	NET	LOGICAL NAME	COMPTR	PHY ADD	
459	COFC	_/_/_/3_/11_	Y	A	
460		F/W/D/3_/11_	Y		B
461		F/S/C/3_/7__	Y		C
462		F/W/D/3_/7__	Y		D
463		_/_/L/3_/11_	Y		I
464		F/O/I/77/___	N		E
465		F/O/K/78/___	N		F

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ADD ROUTER RANK
466	FDC 11TH MARINES	DFSC		VMF	ADAPTIVE	22		
467	FDC 11TH MARINES	RFD		VMF	ADAPTIVE	02		
		1/10						
468	FDC 11TH MARINES	elevenmar	TPC		LAN	193.8.12.11		

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
469	FSCC 1ST MARDIV		12		
	PD via DFSC net				
470	FSCC FWD 1ST MARDIV		13		
	PD via DFSC net				
471	DASC MASS3 3MAW		14		
	PD via DFSC net				
472	DASC FWD MASS3 3MAW		15		
	PD via DFSC net				
473	FSCC 1ST MARINES		16		
	PD via DFSC net				
474	FSCC FWD 1ST MARINES		17		
	PD via DFSC net				
475	FSCC 5TH MARINES		18		
	PD via DFSC net				
476	FSCC FWD 5TH MARINES		19		
	PD via DFSC net				
477	FSCC 7TH MARINES		20		
	PD via DFSC net				
478	FSCC FWD 7TH MARINES		21		
	PD via DFSC net				
479	FDC FWD 11TH MARINES		03		
	PD via RFD net				
480	FDC 1ST BN 11TH MARINES		04		
	PD via RFD net				
481	FDC FWD 1ST BN 11TH MARINES		05		
	PD via RFD net				
482	FDC 2ND BN 11TH MARINES		06		
	PD via RFD net				
483	FDC FWD 2ND BN 11TH MARINES		07		
	PD via RFD net				
484	FDC 3RD BN 11TH MARINES		08		
	PD via RFD net				
485	FDC FWD 3RD BN 11TH MARINES		09		
	PD via RFD net				
486	FDC 5TH BN 11TH MARINES		10		
	PD via RFD net				
487	FDC FWD 5TH BN 11TH MARINES		11		
	PD via RFD net				
488	TPC 11TH MARINES	tpcelevenmar	193.8.12.12		
	PD via TPC WIRE				
489	TPC FWD 11TH MARINES				PD via TPC WIRE

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
490	TPC 11TH MARINES	tpcelevenmar	TPC WIRE	LAN		193.8.12.12			
491	TPC 11TH MARINES		RDR/MET	TACFIRE	1/3_/3_/5_				K

LINE #	STATION NAME	DEVICE	ADD	MOI	AGENCY	FO#	ROUTE
			ADD				
492	FSCC 1ST MARDIV						
	PI via FDC 11TH MARINES						
493	FSCC FWD 1ST MARDIV						
	PI via FDC 11TH MARINES						
494	FDC 11TH MARINES	elevenmar	193.8.12.11				
	PD via TPC WIRE						
495	FDC FWD 11TH MARINES						
	PI via FDC 11TH MARINES						
496	CBR01 11TH MARINES	M	01				
	PD via RDR/MET						
497	CBR02 11TH MARINES	N	02				
	PD via RDR/MET						
498	CBR03 11TH MARINES	O	03				
	PD via RDR/MET						
499	CBR04 11TH MARINES	P	04				
	PD via RDR/MET						
500	MET01 11TH MARINES	1					
	PD via RDR/MET						
501	MET02 11TH MARINES	2					
	PD via RDR/MET						
502	MET03 11TH MARINES	3					
	PD via RDR/MET						
503	MET04 11TH MARINES	4					
	PD via RDR/MET						

LINE #	OWN NAME	HOSTNAME	NET	PROTOCOL	NET ACCESS	ADD / IP ADDRESS	SUBNET MASK	ROUTER ADD	RANK
504	FDC 1ST BN 11TH MARINES		RFSC	VMF	ADAPTIVE			10	
505	FDC 1ST BN 11TH MARINES		RFD	VMF	ADAPTIVE			04	
506	FDC 1ST BN 11TH MARINES		COFA	TACFIRE	2_/4_/4_/6_				A
507	FDC 1ST BN 11TH MARINES		COFB	TACFIRE	2_/4_/4_/6_				A

LINE #	STATION NAME	HOSTNAME	ADD / IP ADDRESS	FO#	ROUTE
508	FSCC 1ST MARINES			02	
	PD via RFSC net				
509	FSCC FWD 1ST MARINES			03	
	PD via RFSC net				
510	FSCC 1ST BN 1ST MARINES			04	
	PD via RFSC net				
511	FSCC FWD 1ST BN 1ST MARINES			05	
	PD via RFSC net				
512	FSCC 2ND BN 1ST MARINES			06	
	PD via RFSC net				
513	FSCC FWD 2ND BN 1ST MARINES			07	
	PD via RFSC net				

514 FSCC 3RD BN 1ST MARINES 08
PD via RFSC net
515 FSCC FWD 3RD BN 1ST MARINES 09
PD via RFSC net
516 FDC FWD 1ST 11TH MARINES 05
PD via RFD net
517 FDC 11TH MARINES 02
PD via RFD net
518 FDC FWD 11TH MARINES 03
PD via RFD net
519 FDC 2ND BN 11TH MARINES 06
PD via RFD net
520 FDC FWD 2ND BN 11TH MARINES 07
PD via RFD net
521 FDC 3RD BN 11TH MARINES 08
PD via RFD net
522 FDC FWD 3RD BN 11TH MARINES 09
PD via RFD net
523 FDC 5TH BN 11TH MARINES 10
PD via RFD net
524 FDC FWD 5TH BN 11TH MARINES 11
PD via RFD net
525 FO11 CO A 1ST BN 1ST MARINES E 11
PD via COFA
526 SI via
FSCC MAIN 1/1
527 FO12 CO B 1ST BN 1ST MARINES F 12
PD via COFA
528 SI via
FSCC MAIN 1/1
529 FO13 CO C 1ST BN 1ST MARINES G
13 PD via COFA
530 SI via
FSCC MAIN 1/1
531 A BTRY 1ST BN 11TH MARINES I
PD via COFA
532 FO14 CO E 2ND BN 1ST MARINES M 14
PD via COFA
533 SI via
FSCC MAIN 2/1
534 FO15 CO F 2ND BN 1ST MARIINES N 15
PD via COFA
535 SI via
FSCC MAIN 2/1
536 FO16 CO G 2ND BN 1ST MARINES O 16
PD via COFA
537 SI via
FSCC MAIN 2/1
538 B BTRY 1ST BN 11TH MARINES 0
PD via COFA
539 FO17 CO I 3RD BN 1ST MARINES E 17
PD via COFB
540 SI via
FSCC MAIN 3/1
541 FO18 CO K 3RD BN 1ST MARINES F 18
PD via COFB

542 SI via
FSCC MAIN 3/1
543 FO19 CO L 3RD BN 1ST MARINES G 19
PD via COFB
544 SI via
FSCC MAIN 3/1
545 C BTRY 1ST BN 11TH MARINES I
PD via COFB

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
546	A BTRY 1ST BN 11TH MARINES		COFA	TACFIRE	1/3/3/5	I	N/A
547	A BTRY 1ST BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1	J	N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE	
548	FDC 1ST BN 11TH MARINES			A				
	PD via COFA							
549	FDC FWD 1ST BN 11TH MARINES			B				
	PD via COFA							
550	FO11 CO A 1ST BN 1ST MARINES			E			11	
	PD via COFA							
551								SI via
FDC 1/11								
552	FO12 CO B 1ST BN 1ST MARINES				F		12	
	PD via COFA							
553								SI via
FDC 1/11								
554	FO13 CO C 1ST BN 1ST MARINES			G			13	
	PD via COFA							
555								SI via
FDC 1/11								
556	B BTRY 1ST BN 11TH MARINES			0				
	PD via COFA							
557	FO14 CO E 2ND BN 1ST MARINES			M				
	14 PD via COFA							
558								SI via
FDC 1/11								
559	FO15 CO F 2ND BN 1ST MARINES				N		15	
	PD via COFA							
560								SI via
FDC 1/11								
561	FO16 CO G 2ND BN 1ST MARINES			O			16	
	PD via COFA							
562								SI via
FDC 1/11								
563	C BTRY 1ST BN 11TH MARINES			0				
	PD via COFA							
564	FO17 CO I 3RD BN 1ST MARINES						17	PI via
FDC 1/11								
565	FO18 CO K 3RD BN 1ST MARINES						18	PI via
FDC 1/11								
566	FO19 CO L 3RD BN 1ST MARINES						19	
	PI via FDC 1/11							

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY	MOI	RANK

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
567	B BTRY 1ST BN 11TH MARINES		COFA	TACFIRE	1/3/3/5	0	N/A
568	B BTRY 1ST BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1	0	N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE	
569	FDC 1BN 11TH MARINES				A			
	PD via COFA							
570	FDC FWD 1ST BN 11TH MARINES				B			
	PD via COFA							
571	FO11 CO A 1ST BN 1ST MARINES				E		11	
	PD via COFA							
572								SI via FDC MAIN 1/11
573	FO12 CO B 1ST BN 1ST MARINES				F		12	
	PD via COFA							
574								SI via FDC MAIN 1/11
575	FO13 CO C 1ST BN 1ST MARINES				G		13	
	PD via COFA							
576								SI via FDC MAIN 1/11
577	A BTRY 1ST BN 11TH MARINES				I			
	PD via COFA							
578	FO14 CO E 2ND BN 1ST MARIINES				M			
14	PD via COFA							
579								SI via FDC MAIN 1/11
580	FO15 CO F 2ND BN 1ST MARINES				N		15	
	PD via COFA							
581								SI via FDC MAIN 1/11
582	FO16 CO G 2ND BN 1ST MARINES				O		16	
	PD via COFA							
583								SI via FDC MAIN 1/11
584	C BTRY 1ST BN 11TH MARINES							
	PD via COFA							
585	FO17 CO I 3RD BN 1ST MARINES						17	
	PI via FDC MAIN 1/11							
586	FO18 CO K 3RD BN 1ST MARINES						18	
	PI via FDC MAIN 1/11							
587	FO19 CO L 3RD BN 1ST MARINES						19	
	PI via FDC MAIN 1/11							

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
588	C BTRY 1ST BN 11TH MARINES		COFB	TACFIRE	1/3/3/5	0	N/A
589	C BTRY 1ST BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1	0	N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE	
590	FDC 1ST BN 11TH MARINES				A			
	PD via COFB							

591	FDC FWD 1ST BN 11TH MARINES		B				PD via COFB
592	FO11 CO A 1ST BN 1ST MARINES				11		PI via FDC 1/11
593	FO12 CO B 1ST BN 1ST MARINES				12		PI via COFA
594	FO13 CO C 1ST BN 1ST MARINES					13	PI via COFA
595	A BTRY 1ST BN 11TH MARINES						PI via COFA
597	FO14 CO E 2ND BN 1ST MARINES				14		PI via COFA
598	FO15 CO F 2ND BN 1ST MARINES				15		PI via COFA
599	FO16 CO G 2ND BN 1ST MARINES				16		PI via COFA
600	B BTRY 1ST BN 11TH MARINES						PI via COFA
601	FO17 CO I 3RD BN 1ST MARINES			E		17	PD via COFB
602							SI via FDC 1/11
603	FO18 CO K 3RD BN 1ST MARINES		F		18		PD via COFB
604							SI via FDC 1/11
605	FO19 CO L 3RD BN 1ST MARINES		G		19		PD via COFB
606							SI via FDC 1/11

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
607	FDC 2ND BN 11TH MARINES		RFSC	VMF	ADAPTIVE	10	
608	FDC 2ND BN 11TH MARINES		RFD	VMF	ADAPTIVE	06	
609	FDC 2ND BN 11TH MARINES		COFA	TACFIRE	2_/4_/4_/6_	A	N/A
610	FDC 2ND BN 11TH MARINES		COFB	TACFIRE	2_/4_/4_/6_	A	N/A

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE
611	FSCC 5TH MARINES		02			PD via RFSC net
612	FSCC FWD 5TH MARINES		03			PD via RFSC net
613	FSCC 1ST BN 5TH MARINES		04			PD via RFSC net
614	FSCC FWD 1ST BN 5TH MARINES		05			PD via RFSC net
615	FSCC 2ND BN 5TH MARINES		06			PD via RFSC net
616	FSCC FWD 2ND BN 5TH MARINES		07			PD via RFSC net
617	FSCC 3RD BN 5TH MARINES		08			PD via RFSC net
618	FSCC FWD 3RD BN 5TH MARINES		09			PD via RFSC net

619 FDC FWD 2ND BN 11TH MARINES 07
PD via RFD net
620 FDC 11TH MARINES 02
PD via RFD net
621 FDC FWD 11TH MARINES 03
PD via RFD net
622 FDC 1ST BN 11TH MARINES 04
PD via RFD net
623 FDC FWD 1ST BN 11TH MARINES 05
PD via RFD net
624 FDC 3RD BN 11TH MARINES 08
PD via RFD net
625 FDC FWD 3RD BN 11TH MARINES 09
PD via RFD net
626 FDC 5TH BN 11TH MARINES 10
PD via RFD net
627 FDC FWD 5TH BN 11TH MARINES 11
PD via RFD net
628 FO51 CO A 1ST BN 5TH MARINES E 51
PD via COFA
629 SI via
FSCC MAIN 1/5
630 FO52 CO B 1ST BN 5TH MARINES F 52
PD via COFA
631 SI via
FSCC MAIN 1/5
632 FO53 CO C 1ST BN 5TH MARINES G 53
PD via COFA
633 SI via
FSCC MAIN 1/5
634 E BTRY 2ND BN 11TH MARINES I
PD via COFA
635 FO54 CO E 2ND BN 5TH MARINES M 54
PD via COFA
636 SI via
FSCC MAIN 2/5
637 FO55 CO F 2ND BN 5TH MARINES N 55
PD via COFA
638 SI via
FSCC MAIN 2/5
639 FO56 CO G 2ND BN 5TH MARINES O 56
PD via COFA
640 SI via
FSCC MAIN 2/5
641 F BTRY 2BN 11T H MARINES 0
PD via COFA
642 FO57 CO I 3RD BN 5TH MARINES E 57
PD via COFB
643 SI via
FSCC MAIN 3/5
644 FO58 CO K 3RD BN 5TH MARINES F 58
PD via COFB
645 SI via
FSCC MAIN 3/5
646 FO59 CO L 3RD BN 5TH MARINES G 59
PD via COFB

647 SI via
FSCC MAIN 3/5
648 G BTRY 2ND BN 11TH MARINES I
PD via COFB

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
649	E BTRY 2ND BN 11TH MARINES		COFA	TACFIRE	1/3/3/5	I	N/A
650	E BTRY 2ND BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1	J	N/A

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE	
651	FDC 2ND BN 11TH MARINES		A				
	PD via COFA						
652	FDC FWD 2ND BN 11TH MARINES		B				
	PD via COFA						
653	FO51 CO A 1ST BN 5TH MARINES		E			11	
	PD via COFA						
654							SI via
FDC MAIN 2/11							
655	FO52 CO B 1ST BN 5TH MARINES			F		12	
	PD via COFA						
656							SI via
FDC MAIN 2/11							
657	FO53 CO C 1ST BN 5TH MARINES			G		13	
	PD via COFA						
658							SI via
FDC MAIN 2/11							
659	F BTRY 2ND BN 11TH MARINES		0				
	PD via COFA						
660	FO54 CO E 2ND BN 5TH MARINES		M			14	
	PD via COFA						
661							SI via
FDC MAIN 2/11							
662	FO55 CO F 2ND BN 5TH MARINES			N		15	
	PD via COFA						
663							SI via
FDC MAIN 2/11							
664	FO56 CO G 2ND BN 5TH MARINES		O			16	
	PD via COFA						
665							SI via
FDC MAIN 2/11							
666	FO57 CO I 3RD BN 5TH MARINES				17		PI via
FDC MAIN 2/11							
667	FO58 CO K 3RD BN 5TH MARINES				18		PI via
FDC MAIN 2/11							
668	FO59 CO L 3RD BN 5TH MARINES				19		PI via
FDC MAIN 2/11							
669	G BTRY 1BN 11TH MARINES						PD via
FDC MAIN 2/11							

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
670	F BTRY 2ND BN 11TH MARINES		COFA	TACFIRE	1/3/3/5	0	N/A

671 F BTRY 2ND BN 11TH MARINES BRTY WIRE TACFIRE 1/1/1/1 0 N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE	
672	FDC 2ND BN 11TH MARINES			A				
	PD via COFA							
673	FDC FWD 2ND BN 11TH MARINES			B				
	PD via COFA							
674	FO51 CO A 1ST BN 5TH MARINES			E			11	
	PD via COFA							
675								SI via FDC 2/11
676	FO52 CO B 1ST BN 5TH MARINES			F			12	
	PD via COFA							
677								SI via FDC 2/11
678	FO53 CO C 1ST BN 5TH MARINES			G			13	
	PD via COFA							
679								SI via FDC 2/11
680	E BTRY 2ND BN 11TH MARINES			I				
	PD via COFA							
681	FO54 CO E 2ND BN 5TH MARINES			M			14	
	PD via COFA							
682								SI via FDC 2/11
683	FO55 CO F 2ND BN 5TH MARINES			N			15	PD via COFA
684								SI via FDC 2/11
685	FO56 CO G 2ND BN 5TH MARINES			O			16	PD via COFA
686								SI via FDC 2/11
687	FO57 CO I 3RD BN 5TH MARINES						17	PI via FDC 2/11
688	FO58 CO K 3RD BN 5TH MARINES						18	PI via FDC 2/11
689	FO59 CO L 3RD BN 5TH MARINES						19	PI via FDC 2/11
690	G BTRY 2ND BN 11TH MARINES							
	PD via FDC 2/11							

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
691	G BTRY 2ND BN 11TH MARINES		COFB	TACFIRE	1/3/3/5	0	N/A
692	G BTRY 2ND BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1	0	N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE
693	FDC 2ND BN 11TH MARINES			A			
	PD via COFB						

694 FDC FWD 2ND BN 11TH MARINES B
PD via COFB
695 FO51 CO A 1ST BN 5TH MARINES E 11
PI via FDC 2/11
696 FO52 CO B 1ST BN 5TH MARINES F 12
PI via COFA
697 FO53 CO C 1ST BN 5TH MARINES G 13
PI via COFA
698 E BTRY 2ND BN 11TH MARINES D
PI via COFA
699 FO54 CO E 2ND BN 5TH MARINES M 14
PI via COFA
700 FO55 CO F 2ND BN 5TH MARINES N 15
PI via COFA
701 FO56 CO G 2ND BN 5TH MARINES O 16
PI via COFA
702 F BTRY 2ND BN 11TH MARINES 0
PI via COFA
703 FO57 CO I 3RD BN 5TH MARINES E 17
PD via COFB
704 SI via
FDC 2/11
705 FO58 CO K 3RD BN 5TH MARINES F 18
PD via COFB
706 SI via
FDC 2/11
707 FO59 CO L 3RD BN 5TH MARINES G 19
PD via COFB
708 SI via
FDC 2/11

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
709	FDC 3RD BN 11TH MARINES		RFSC	VMF	ADAPTIVE		10
710	FDC 3RD BN 11TH MARINES		RFD	VMF	ADAPTIVE		08
711	FDC 3RD BN 11TH MARINES		COFA	TACFIRE	2_/4_/4_/6_	A	N/A
712	FDC 3RD BN 11TH MARINES		COFB	TACFIRE	2_/4_/4_/6_	A	N/A

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE
713	FSCC 7TH MARINES			02		
	PD via RFSC net					
714	FSCC FWD 7TH MARINES			03		
	PD via RFSC net					
715	FSCC 1ST BN 7TH MARINES			04		
	PD via RFSC net					
716	FSCC FWD 1ST BN 7TH MARINES			05		
	PD via RFSC net					
717	FSCC 2ND BN 7TH MARINES			06		
	PD via RFSC net					
718	FSCC FWD 2ND BN 7TH MARINES			07		
	PD via RFSC net					
719	FSCC 3RD BN 7TH MARINES			08		
	PD via RFSC net					
720	FSCC FWD 3RD BN 7TH MARINES			09		
	PD via RFSC net					

721 FDC FWD 3RD BN 11TH MARINES 09
PD via RFD net
722 FDC 11TH MARINES 02
PD via RFD net
723 FDC FWD 11TH MARINES 03
PD via RFD net
724 FDC 1ST BN 11TH MARINES 04
PD via RFD net
725 FDC FWD 1ST BN 11TH MARINES 05
PD via RFD net
726 FDC 2ND BN 11TH MARINES 06
PD via RFD net
727 FDC FWD 2ND BN 11TH MARINES 07
PD via RFD net
728 FDC 5TH BN 11TH MARINES 10
PD via RFD net
729 FDC FWD 5TH BN 11TH MARINES 11
PD via RFD net
730 FO71 CO A 1ST BN 7TH MARINES E 71
PD via COFA
731 SI via FSCC 1/7
732 FO72 CO B 1ST BN 7TH MARINES F 72
PD via COFA
733 SI via FSCC 1/7
734 FO73 CO C 1ST BN 7TH MARINES G 73
PD via COFA
735 SI via FSCC 1/7
736 I BTRY 3RD BN 11TH MARINES I
PD via COFA
737 FO74 CO E 2ND BN 7TH MARINES M 74
PD via COFA
738 SI via FSCC 2/7
739 FO75 CO F 2ND BN 7TH MARINES N 75
PD via COFA
740 SI via FSCC 2/7
741 FO76 CO G 2ND BN 7TH MARINES O 76
PD via COFA
742 SI via FSCC 2/7
743 K BTRY 3RD BN 11TH MARINES 0
PD via COFA
744 FO77 CO I 3RD BN 7TH MARINES E 77
PD via COFB
745 SI via FSCC 3/7
746 FO78 CO K 3RD BN 7TH MARINES F 78
PD via COFB
747 SI via FSCC 3/7
748 FO79 CO L 3RD BN 7TH MARINES G 79
PD via COFB

749 SI via FSCC 3/7

750 L BTRY 3RD BN 11TH MARINES I PD via COFB

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
751	I BTRY 3RD BN 11TH MARINES		COFA	TACFIRE 1/3/3/5			I
N/A							
752	I BTRY 3RD BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1		
J	N/A						

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE	
753	FDC 3RD BN 11TH MARINES		A				
	PD via COFA						
754	FDC FWD 3RD BN 11TH MARINES		B				
	PD via COFA						
755	FO71 CO A 1ST BN 7TH MARINES		E			11	
	PD via COFA						
756							SI via FDC 2/11
757	FO72 CO B 1ST BN 7TH MARINES		F			12	
	PD via COFA						
758							SI via FDC 2/11
759	FO73 CO C 1ST BN 7TH MARINES		G			13	
	PD via COFA						
760							SI via FDC 2/11
761	K BTRY 3RD BN 11TH MARINES		0				
	PD via COFA						
762	FO74 CO E 2ND BN 7TH MARINES		M			14	
	PD via COFA						
763							SI via FDC 2/11
764	FO75 CO F 2ND BN 7TH MARINES		N			15	
	PD via COFA						
765							SI via FDC 2/11
766	FO76 CO G 2ND BN 7TH MARINES		O			16	
	PD via COFA						
767							SI via FDC 2/11
768	FO77 CO I 3RD BN 7TH MARINES				17		PI via FDC 2/11
769	FO78 CO K 3RD BN 7TH MARINES				18		PI via FDC 2/11
770	FO79 CO L 3RD BN 7TH MARINES					19	
	PI via FDC 2/11						
771	L BTRY 3RD BN 11TH MARINES						
	PI via FDC 2/11						

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK

772	K BTRY 3RD BN 11TH MARINES		COFA	TACFIRE	1/3/3/5		0
N/A							
773	K BTRY 3RD BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1		0
N/A							

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE	
774	FDC 3RD BN 11TH MARINES				A			
	PD via COFA							
775	FDC FWD 3RD BN 11TH MARINES				B			
	PD via COFA							
776	FO71 CO A 1ST BN 7TH MARINES				E		11	
	PD via COFA							
777								SI via
FDC 3/11								
778	FO72 CO B 1ST BN 7TH MARINES				F		12	
	PD via COFA							
779								SI via
FDC 3/11								
780	FO73 CO C 1ST BN 7TH MARINES				G		13	
	PD via COFA							
781								SI via
FDC 3/11								
782	I BTRY 3RD BN 11TH MARINES				I			
	PD via COFA							
783	FO74 CO E 2ND BN 7TH MARINES				M		14	
	PD via COFA							
784								SI via
FDC 3/11								
785	FO75 CO F 2ND BN 7TH MARINES				N		15	
	PD via COFA							
786								SI via
FDC 3/11								
787	FO76 CO G 2ND BN 7TH MARINES				O		16	
	PD via COFA							
788								SI via
FDC 3/11								
789	FO77 CO I 3RD BN 7TH MARINES						17	
	PI via FDC 3/11							
790	FO78 CO K 3RD BN 7TH MARINES						18	
	PI via FDC 3/11							
791	FO79 CO L 3RD BN 7TH MARINES						19	
	PI via FDC 3/11							
792	L BTRY 3RD BN 11TH MARINES							
	PI via FDC 3/11							

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
793	L BTRY 3RD BN 11TH MARINES		COFB	TACFIRE	1/3/3/5		0
N/A							
794	L BTRY 3RD BN 11TH MARINES		BRTY WIRE	TACFIRE	1/1/1/1		0
N/A							

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE
795	FDC 3RD BN 11TH MARINES				A		
	PD via COFB						

796 FDC FWD 3RD BN 11TH MARINES B
PD via COFB
797 FO71 CO A 1ST BN 7TH MARINES 11
PI via FDC 3/11
798 FO72 CO B 1ST BN 7TH MARINES 12
PI via FDC 3/11
799 FO73 CO C 1ST BN 7TH MARINES 13
PI via FDC 3/11
800 I BTRY 3RD BN 11TH MARINES
PI via FDC 3/11
801 FO74 CO E 2ND BN 7TH MARINES 14
PI via FDC 3/11
802 FO75 CO F 2ND BN 7TH MARINES 15
PI via FDC 3/11
803 FO76 CO G 2ND BN 7TH MARINES 16
PI via FDC 3/11
804 K BTRY 1ST BN 11TH MARINES
PI via FDC 3/11
805 FO77 CO I 3RD BN 7TH MARINES E 17
PD via COFB
806 SI via
FDC 3/11
807 FO78 CO K 3RD BN 7TH MARINES F 18
PD via COFB
808 SI via
FDC 3/11
809 FO79 CO L 3RD BN 7TH MARINES G 19
PD via COFB
810 SI via
FDC 3/11

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
811	FDC 5TH BN 11TH MARINES		RFD	VMF	ADAPTIVE		10
812	FDC 5TH BN 11TH MARINES		COFA	TACFIRE	2_/4_/4_/6_	A	N/A
813	FDC 5TH BN 11TH MARINES		COFB	TACFIRE	2_/4_/4_/6_	A	N/A

LINE #	STATION NAME	DEVICE	ADD	MOI ADD	AGENCY	FO#	ROUTE
814	FDC FWD 5TH BN 11TH MARINES			11			
	PD via RFD net						
815	FDC 11TH MARINES			02			
	PD via RFD net						
816	FDC FWD 11TH MARINES			03			
	PD via RFD net						
817	FDC 1ST BN 11TH MARINES			04			
	PD via RFD net						
818	FDC FWD 1ST BN 11TH MARINES			05			
	PD via RFD net						
819	FDC 2ND BN 11TH MARINES			06			
	PD via RFD net						
820	FDC FWD 2ND BN 11TH MARINES			07			
	PD via RFD net						
821	FDC 3RD BN 11TH MARINES			08			
	PD via RFD net						

822 FDC FWD 3RD BN 11TH MARINES 09
PD via RFD net
823 Q BTRY 5TH BN 11TH MARINES I
PD via COFA
824 R BTRY 5TH BN 11TH MARINES 0
PD via COFA
825 S BTRY 5TH BN 11TH MARINES I
PD via COFB

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
826	Q BTRY 5TH BN 11TH MARINES	COFA	TACFIRE	1/3/3/5			I
N/A							
827	Q BTRY 5TH BN 11TH MARINES	BRTY WIRE	TACFIRE	1/1/1/1			
J	N/A						

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE
828	FDC 5TH BN 11TH MARINES		A			
	PD via COFA					
829	FDC FWD 5TH BN 11TH MARINES		B			
	PD via COFA					
830	R BTRY 5TH BN 11TH MARINES		0			
	PD via COFA					
831	S BTRY 5TH BN 11TH MARINES					
	PI via FDC 5/11					

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
832	R BTRY 5TH BN 11TH MARINES	COFA	TACFIRE	1/3/3/5			0
N/A							
833	R BTRY 5TH BN 11TH MARINES	BRTY WIRE	TACFIRE	1/1/1/1			0
N/A							

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE
834	FDC 5TH BN 11TH MARINES		A			
	PD via COFA					
835	FDC FWD 5TH BN 11TH MARINES		B			
	PD via COFA					
836	Q BTRY 5TH BN 11TH MARINES		I			
	PD via COFA					
837	S BTRY 5TH BN 11TH MARINES					
	PI via FDC 5/11					

LINE #	OWN NAME	NET	PROTOCOL	NET ACCESS	PHY ADD	MOI ADD	RANK
838	S BTRY 5TH BN 11TH MARINES	COFB	TACFIRE	1/3/3/5			0
N/A							
839	S BTRY 5TH BN 11TH MARINES	BRTY WIRE	TACFIRE	1/1/1/1			0
N/A							

LINE #	STATION NAME	DEVICE ADD	MOI ADD	AGENCY	FO#	ROUTE
840	FDC 5TH BN 11TH MARINES		A			
	PD via COFB					

841 FDC FWD 5TH BN 11TH MARINES B
PD via COFB
842 Q BTRY 5TH BN 11T H MARINES
PI via FDC 5/11
843 R BTRY 5TH BN 11TH MARINES
PI via FDC 5/11

APPENDIX C

EXAMPLE AUTOMATED FIRE SUPPORT SOP

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DivO P3120
G-3
08 Sep 00

DIVISION ORDER P3120

From: Commanding General, 1st Marine Division
To: Distribution List

Subj: 1st MARINE DIVISION AUTOMATED FIRE SUPPORT STANDARD OPERATING PROCEDURES.

Ref: (a) FMFM 6-9 Marine Artillery Support
(b) FMFM 6-18 Techniques and Procedures for Fire Support Coordination
(c) FMFM 6-18-1 Techniques and Procedures for MCFSS
(d) TC 6-40A Field Artillery Automated Cannon Gunnery.
(e) ST 6-1-1 Lightweight Tactical Fire Direction System (LTACFIRE) Operations
(f) ST 6-40-30 Battery Computer System Job Aids
(g) TM 11-7440-283-12-1-1-1&2 Cannon Battery Computer System
(h) TM 11-5840-354-10 Operators Manual for RADAR set AN/TPQ-36
(i) TM 08625A-10/1-1&2 Meteorological Data System AN/TMQ-31

Encl: (1) Locator Sheet

1. **Purpose**. To implement standard procedures and techniques in the use of automated fire direction and fire support coordination within the 1st Marine Division.

2. **General**. Standard entries are required to allow the digital fire support systems to communicate and to avoid confusion during the processing of information. This standardization requires a much greater degree of precision than most voice/manual operations. The basis for this SOP is the AFATDS Techniques and Procedures Manual (TPM). Strict adherence to the procedures established in the TPM and this SOP are paramount to our success in the digital arena. Commanding Officers and staff section Officers-in-charge will use this SOP as a basis for the operation of their digital devices.

3. **Cancellation**. None.

4. **Summary of Revisions**. This manual contains significant changes over past operating procedures and must be completely reviewed.

5. **Action**. This SOP is effective upon receipt. Commanding Officers and staff section Officers-in-charge will use this SOP as a basis for the operation of their digital devices. This SOP will be present and readily available at all centers using automated/digital devices in the 1st Marine Division.

6. **Certification**. Reviewed and approved this date.

L. L. MIKE-FOX

Distribution: A

1ST MARINE DIVISION AUTOMATED SOP

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Received	Date Entered	Signature of Person Entering Change

DivO P3120
08 Sep 00

LOCATOR SHEET

Subj: 1st Marine Division Automated Fire Support SOP

Location:
(Indicate the location(s) of the copy(ies) of this SOP)

CHAPTER 1
SOP SCOPE

1. **PURPOSE.** The purpose of this draft SOP is to combine the techniques and procedures defined in MCRP 3-16.2B, Techniques and Procedure for MCFSS and those for AFATDS in draft MCRP 3-16.2A, Techniques and Procedures for AFATDS. Because AFATDS is the objective system of the Marine Corps' effort to automate all fire support command and control, MCRP 3-16.2A is focused on a future warfighting environment when AFATDS is the only system existing in the fire support arena. Until this time it will be necessary for units to possess and operate with a combination of IFSAS and BCS equipment and AFATDS.

2. **SCOPE.** This SOP applies to all units that must interface the currently fielded equipment of the MAGTFC4I with the AFATDS. Techniques provided here modify those provided in both the MCRP 3-16.2B and MCRP 3-16.2A.

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CHAPTER 2

COMMUNICATIONS

1. **GENERAL.** AFATDS, combined with SINCGARS, provides a significant improvement over previous TACFIRE protocol MCFSS devices by use of variable message format (VMF) protocol. However, it is necessary to consider the fact that less capable devices will be netted with AFATDS. This chapter addresses necessary changes to the communications structure to support both AFATDS and MCFSS devices.

2. **NETWORKS.** Table SOP 2-1 dictates the required protocols and data rates necessary to enable data fire support networks to operate with a mix of MCFSS and AFATDS equipment.

Table SOP 2-1, NETWORK PROTOCOLS

NETWORK	STATIONS	PROTOCOL	MEDIA	DATA ENCODING	DATA RATE
MAGTF FFC	MAGTF FFCC DIV FSCC	LAN	WAN		
DIV FSC	DIV FSCC REGT FSCCs REGT FDC	VMF	SINCGARS	NRZ FSK 1200/2400 1300/2100 1575/2425 1300/1700	16K/4.8k/2.4k/ 1.2k/.6k 1.2k/.6k .6k
			2 WIRE	CDP FSK 1200/2400 1300/2100 1575/2425 1300/1700	8k/16k/32k 1.2k/.6k .6k
			4 WIRE	FSK 1200/2400 1300/2100	1.2k/.6k
REGT FD	REGT FDC BN FDCs	VMF	SINCGARS	NRZ FSK 1200/2400 1300/2100 1575/2425 1300/1700	16K/4.8k/2.4k/ 1.2k/.6k 1.2k/.6k .6k
			2 WIRE	CDP FSK 1200/2400 1300/2100 1575/2425 1300/1700	8k/16k/32k 1.2k/.6k .6k
			4 WIRE	FSK 1200/2400 1300/2100	1.2k/.6k
COF NETS	BN FSCC FOs	TACFIRE	SINCGARS	NRZ (**will not work with TACFIRE)** FSK 1200/2400 1300/2100	16K/4.8k/2.4k/ 1.2k/.6k FSK 1200/2400 1300/2100
			2 WIRE	CDP FSK 1200/2400 1300/2100	8k/16k/32k 1.2k/.6k
			4 WIRE	FSK 1200/2400 1300/2100	1.2k/.6k

BN FD	ARTY BN FDC ARTY BTRY FDC	188-220	SINCGARS 2 WIRE 4 WIRE	NRZ FSK 188C 4202A CDP FSK 188C 4202A CDP FSK 188C 4202A	.6k/1.2k/2.4k/4. 8k/16k/ .075k/.15k/.3k/ .6k/1.2k 16k/32k .075k/.15k/.3k/ .6k/1.2k 16k/32k .075k/.15k/.3k/ .6k/1.2k
BTRY WIRE	ARTY BTRY AFATDS ARTY BTRY BCS	188-220	2 WIRE 4 WIRE	CDP FSK 188C 4202A CDP FSK 188C 4202A	16k/32k .075k/.15k/.3k/ .6k/1.2k 16k/32k .075k/.15k/.3k/ .6k/1.2k

3. COMMUNICATIONS SECURITY. Actual security or encryption of networks is dictated by the communications plan. Software settings at all IFSAS devices will indicate secure nets to allow these devices to employ serialization. This is especially important at the BCS.

4. **DEVICE SPECIFIC CONCERNS**.

A. **AFATDS.** When AFATDS is interfacing with a package 11 device (IFSAS, BCS, FDS, MMS, or Q-36/37 there is sufficient unit data passed to AFATDS to create that unit. Additionally, IFSAS and BCS are also capable of receiving unit data, 3 dimensional ACAs, chemical contamination areas and NFAs from AFATDS. The following deficiencies will be left in place, in the event of package 11 not being implemented.

(1) TACFIRE nets operated at AFATDS will use serialization for transmitted messages only (This is default). This will prevent AFATDS from returning a NAK to the MCFSS device.

(2) All AFATDS stations require a communications route to the TPC. This allows the routing of TARGET INDICATORS.

(3) Due to the fact that an AFU:UPDATE or FM;OBCO sent from a TACFIRE type device (BCS, IFSAS, DMS, Q36) does not contain all the data required for AFATDS to build that unit's data, that unit must be initially keypunched in at the AFATDS. After that unit is built and has a unit icon displayed, an AFU;UPDATE or FM;OBCO message will update it's unit data.

(4) Communications are limited to freetext messages until unit data is built for that unit.

B. **IFSAS.** IFSAS computers that communicate with AFATDS will make all messages legal for the AFATDS station and change all message classifications to UNCLASSIFIED in the PCLD file.

C. **BCS/FDS** stations will change the classification of messages transmitted to UN in the C: field of the communications line prior to transmitting.

D. **DMS** equipped stations do not require a code file for AFATDS stations

with which the DMS communicates. The AFATDS ignore received serialization by default.

5. DATA DISTRIBUTION AND MOI STRUCTURE.

A. **AFATDS.** Data distribution is established as per chapter 6 of AFATDS TECHNIQUES AND PROCEDURES. Additional procedures are required.

(1) **Unit data distribution to IFSAS.** IFSAS cannot store a complete AFATDS unit data record. IFSAS can store artillery, NSFS, mortar fire unit data, radar and observer unit data. Subordinate IFSAS FSCCs require unit data of fire support assets that support their command unit. This is distributed to IFSAS stations by transmitting the location of the fire units via freetext message. The IFSAS station builds the unit data and assigns a 6400 mil traverse to these units and allows azimuth of lay and ranges to default. After building the unit data, the IFSAS station indicates it is ready to receive ammunition. The AFATDS station then transmits the AMMO DETAILED data to that station to establish an ammunition count. ***WARNING: THESE PROCEDURES ARE DESIGNED TO ALLOW A SUBORDINATE FSCC TO TRANSMIT AN UNSUPPORTABLE MISSION TO THE SUPPORTED FSCC WITHOUT TRANSMITTING AN FM;CFF:X AS A REQUEST FOR FIRES (see Appendix D, Chapter 3-2 para. 3B.).***

(2) **DATA REQUESTS TO IFSAS.** AFATDS uses the request status message to query other AFATDS systems for unit data. The IFSAS computer does not understand this message, however, this data may be obtained from the IFSAS computer by transmitting one of various command (COMD) messages to the IFSAS. SPRT;COMD causes the IFSAS to return all or specified geometry; AFU;COMD message returns all or specified fire unit data. These messages are available to the AFATDS operator by selecting ALERTS & MESSAGES, MESSAGES.

B. **IFSAS.** IFSAS equipped stations use the MOI setup described in FMFM 6-18-1, MCFSS TECHNIQUES AND PROCEDURES changed as described here.

(1) **Standing requests for information (SRIs).** SRIs are not transmitted to AFATDS stations. Instead, requests must be transmitted as SYS;PTMs and specific targets or lists are returned by the AFATDS operators.

(2) **GEOMETRIES.**

(a) **Air space coordination area (ACA).** ACAs are stored at AFATDS as circular, linear or rectangular geometries. IFSAS only stores linear measures. All other shapes are received as alerts and must be printed and plotted on a map.

(b) **Chemically Contaminated Areas (CCA).** CCAs are stored in IFSAS as irregular geometries of 3 to 5 points. CCAs received with more points produce an alert and must be printed and plotted.

(c) **No Fire Areas (NFA)** cannot be transmitted to IFSAS due to the fact that IFSAS does not recognize NFAs. These geometries must be sent down as freetext messages.

Table 2-2 depicts problems when transmitting from or to a TACFIRE type device from or to an AFATDS. Remember these problems are fixed when working with a package device.

MESSAGE	AFATDS TO IFSAS	IFSAS TO AFATDS	AFATDS TO BCS
AFU;AMSS			
AFU;OPSTAT			
AFU;UPDATE	AFATDS will not transmit AFU;UPDATES to IFSAS computers. IFSAS is not capable of receiving unit data from AFATDS.	Unit data must be previously entered for successful reception. Min. and max. rgs. Do not update	
AFU;AMMO			
FM;CFF:R	Received at IFSAS any time OTF is transmitted.	Received as FM;CFF;X, do not send.	
FM;CFF:X		Recognized as a fire mission denial.	
NNFP;XSCD		PLAN field has first six spaces of sender logical name inserted.	
NNFP;XTGT		PLAN field has first six spaces of sender logical name inserted.	
AFATDS MSGS			
AIR CORRIDOR	If two points then SPRT;BEGEOM;ACA is received. If more than two points , alert at AFATDS indicating END SYSTEM will accept only two points.		
ATI ZONE	Alert at AFATDS "INVALID GEOMETRY TYPE FOR DEVICE".		
CALL FOR FIRE ZONE	Alert at AFATDS "INVALID GEOMETRY TYPE FOR DEVICE".		
AFATDS MSGS	AFATDS TO IFSAS	IFSAS TO AFATDS	AFATDS TO BCS

CHEM CONTAMINATED AREA	Received as SPRT;BGEM;CHA. If more than 5 points, AFATDS produces alert when attempt to transmit:"INCORRECT VALUE FOR FIELD-# COORDINATE POINTS".		
COORDINATE FIRE LINE	SPRT;BGEOM:CFL is received.		
CSR GUIDANCE	Cannot send-nothing happens when attempting.		
FA ATTACK METHODS	Received at IFSAS as FM;ATTACK messages. Shell/Fuze is not transmitted.		
FA RESTRICTIONS	Caused alert indicating guidance received and ready to preview at AFATDS???		
FA SYSTEM PREFERENCE TABLE	Cannot send-nothing happens when attempted.		
FIRE SUPPORT AREA	Alert at AFATDS "INVALID GEOMETRY TYPE FOR DEVICE".		
FIRE SUPPORT COORDINATION LINE	Received as SPRT;BGEOM:FSCL.		
FIRE SUPPORT STATION	Alert at AFATDS"INVALID GEOMETRY FOR DEVICE".		
MESSAGES-ATI CBTI	Receives ATI;CBTI		
MESSAGES-ATI;CDR	Receives ATI;CDR(note:transmitting this message does not store a target at AFATDS)		
MESSAGES-FSE NBC1NU	Receives FSE;NBC1NU.		
MESSAGES-SPRT; AMMODAT	Receives SPRT; AMMODAT.	Receives and processes, stores in database.	
AFATDS MSGS	AFATDS TO IFSAS	IFSAS TO AFATDS	AFATDS TO BCS

MESSAGES-SPRT; DATUM	Allows AFATDS to select a unit ID from among units stored in DB. Sends the unit location and datum.		
MESSAGES-SPRT; EFFDAT	Receives SPRT; EFFDAT.	Receives and processes, stores in database.	
MESSAGES-SPRT; RGERR	Receives SPRT; RGERR.	Receives and processes, stores in database.	
MESSAGES-SPRT; TEDE	Receives SPRT; TEDE.		
MISSION FIRED REPORT	Receives AFU;MFR.		
ONCALL, INACTIVE or PLANNED TGT LIST	Sends NNFP;FPTU with plan name ONCALL, INACTV or PLANNED for each target. All targets are transmitted at one time.		
FIRE PLAN	Received as FPTGT; shells assigned to targets are lost.	Received anytime an FPLST or TISF is transmitted.	
OTF/FO	Received as FM;CFF:R		
PLAN TEXT	Nothing happens when attempt is made to send data except alert indicating plan transfer is complete at AFATDS.		
REQUEST STATUS	Produces alert at AFATDS indicating inability to send this message to non-AFATDS units.		
RESTRICTED FIRE LINE	Receives SPRT;BGEOM:RFA.		
SNED STATUS-AMMO SUMMARY	Nothing happens when attempt is made to send data.		
AFATDS MSGS	AFATDS TO IFSAS	IFSAS TO AFATDS	AFATDS TO BCS

SEND STATUS-BASIC UNIT INFO	Cannot be transmitted to IFSAS for any unit type except OBS, RADAR. If no route for the unit exists at the sending AFATDS, then the observer number transmitted 00 yielding an alert"RANGE VIOLATION" at IFSAS. Transmitting all other units types produces an alert at AFATDS "CANNOT GENERATE INTERFACE".		
SEND STATUS-DETAILED AMMO SUMMARY	Sends AFU;UPDATES and AFU;AMOL with quantity based on critical threshold percent multiplied by ammo quantity on hand.		
SEND STATUS-EQUIPMENT	Produces an alert at AFATDS "CANNOT GENERATE INTERFACE".		
SEND STATUS-GENERAL UNIT INFO	Produces an alert at AFATDS "CANNOT GENERATE INTERFACE".		
SEND STATUS-DETAILED WEAPONS	Produces an alert AFATDS "CANNOT GENERATE INTERFACE".		
SEND STATUS-WEAPON SUMMARY	Produces an alert AFATDS "CANNOT GENERATE INTERFACE".		
SEND STATUS-POL	Cannot be transmitted.		
SOF	Received as TISF; fire unit volleys displays 0 and default fuzes are stored.	Received when a TISF is transmitted to AFATDS. Fire plan name is first six characters of IFSAS TACFIRE alias.	
AFATDS MSGS	AFATDS TO IFSAS	IFSAS TO AFATDS	AFATDS TO BCS
SUSPECT TARGET LIST	Cannot be transmitted.		

TARGET MANAGEMENT MATRIX	Produces alert"MISSING MANDATORY FIELD(S)-TARGET INFORMATION LIST.		
TARGET LIST FROM PLAN	RECEIVES NNFP;FPTU with plan name as indicated in the BASIC PLAN INFO window. Transmission will fail if no PLAN ALIAS is entered in BASIC PLAN INFO.		
TRANSFER PLAN	Only those parts of the plan that IFSAS can receive are transmitted. All others are listed as medium level alerts at AFATDS. If plan alias is not entered in BASIC PLAN INFO all plan fields are blank when received at IFSAS.		
ZOR	Received as SPRT;ZNE.		

Tactical Combat Operations (TCO). In addition to interfacing with TACFIRE type devices, AFATDS exchanges data with TCO. Data is exchanged via AFATDS' external or internal LAN to the TCO LAN. The exchange takes place through the Tactical Data Base Manager (TDBM) of the Unified Build (UB) residing in the Defense Infrastructure Information, Common Operating Environment (DII, COE). This exchange is made possible by establishing a client, server relationship between the TCO and AFATDS within the DII, COE. At this time three message types may be passed between the TCO and AFATDS, geometries, friendly unit data and enemy unit data. We will deal with the specifics of this interface later in this section, first let us look at the interface setup.

AFATDS TCO/GCCS-M SETUP

TCO SETUP. The TCO/GCCS-M interface may be setup using either the internal (Hme1) or the external (Hme0) LAN, both methods will be covered in this setup guide. Ensure the TCO and AFATDS workstations are configured and the twisted pair cable is connected from the TCO to the AFATDS via a hub/switch. The server (TCO/GCCS-M) must be up and running prior to the client (AFATDS). All DII,COE data will be entered utilizing sysadmin account. At the TCO/GCCS-M the entries made in the sysadmin account will be the responsibility of the system's administrator.

1. Power the TCO (GCCS-M).

2. At the DII,COE login, login as sysadmin.

a. Select Network, Change Machine ID, view the hostname and IP address of the TCO. Any changes necessary are made in the Edit Hosts Table.

b. Select Network, Edit Host table, ensure entry of the hostname and IP address of the AFATDS. This will be the hostname and IP address as published in the digital tab to the operations order, for external LAN setup. For internal LAN setup, the hostname and IP address of the AFATDS system assigned when loading software is entered. Other hosts not desired may be deleted, however, ensure that at a minimum, the loghost and localhost remain as well as the afatds entry. This information will be automatically reflected in the Edit Local Hosts Table. If a change was made to the TCO's hostname or IP address check the Change Machine ID window to verify the change. Re-boot the system.
The below example reflects the AFATDs and TCO on the same subnet, if either systems are not on the same subnet the interface must be run through a router.

External LAN Internal

AFATDS onemr 193.8.12.10 AFATDS afatds01 192.8.12.51 TCO jots1 193.8.12.80 TCO jots1 192.8.12.80

c. Select TMS/UCP, Comms, Set WAN UID, Enter the WAN unit ID for the TCO, corresponding to the data provided in the TCO setup SOP. The WAN UID is assigned as the prefix of a track's unique designator. This is for track identification and designation of the creator of the track.

d. Select TMS/UCP, Comms, Config DDN Host Table. Right click on the empty Config DDN Host Table window and select Update. All entries will be displayed automatically. Click on the jots1 entry and select edit, enter TCO's WAN UID and OK the window. Ensure that Internal, designating that the interface is being conducted on the LAN, is selected. External designates the interface is being conducted on the WAN. This entry is made automatically.

e. Select TMS/UCP, TMS Config, ensure the selection of Network, Master, All from the Mount Global Data and None from the UB/Alert Group. OK the window, select No for save to tape, and OK for reboot. This will not reboot the system,

f. Start the TCO WAN network.

g. Set the system time, if necessary.

h. Clean database files if necessary.

i. Modify the Track Database Config file for unit SOP (default is 1500).

j. Re-boot the system.

k. At the DII,COE login, login as to the operator account.

l. Select Chart, System Chart, to display the map and "own track".

AFATDS SETUP. Prior to powering the AFATDS ensure the TCO is configured, powered and running. Ensure the AFATDS equipment is configured and the twisted pair cable is connected from AFATDS to the TCO via a hub/switch. The server (TCO) must be up and running prior to the client (AFATDS). All interface data must be entered in the DII, COE using the sysadmin user account.

1. Power the AFATDS.

2. At the DII,COE login, login as sysadmin.

a. Edit Local Hosts. Select Network, Edit Local Hosts, ensure entry of the hostname and IP addresses of the AFATDS and TCO. When running the interface on the external LAN, the TCO hostname and IP address must be entered, as well as the hostname and IP address of the AFATDS OPFAC on the external LAN (Digital Tab). When running the interface on the internal LAN, only the hostname and IP address of the TCO need be entered, as the OPFAC's IP address and hostname is automatically entered in the Edit Local Hosts Table. For example,

External LAN	Internal LAN
afatds01 192.8.12.51 (automatically entered)	afatds01 192.8.12.51 (automatically entered)
onemr 193.8.12.10 (manually entered)	jots1 192. 8.12.80 (manually entered)
jots1 193.8.12.80 (manually entered)	

b. The WAN unit ID is not entered at AFATDS, as AFATDS creates no tracks, only accesses the TDBM of the master station.

c. The DDN Host Table is not filled at AFATDS, as it accesses the DDN Host Table of the server (TCO).

d. TMS Config. Select TMS/UCP, TMS Config. From the TMS Config window select Network, select Client, and change the TDBM master entry to the master workstation's name, (jots1, ensure the enter button is pressed after entering the master). Select All from the Mount Global Data and None from the UB/Alert Group. OK the window, select No for save to tape, and OK for reboot. This will not reboot the system.

e. Ensure system time synchronization with TCO.

f. Reboot the system.

g. At the DII,COE login, login to the operator account.

h. Create a connectivity (Dummy) unit if necessary. This step is only necessary when the interface is conducted on the external LAN and there is no destination units in the external LAN.

Dummy Unit Explained:

The vehicle for the sharing of data on this interface is the internal or external LAN. It is important to remember that data is not being transmitted, only shared. For this reason the TCO need not be in the communications configuration of the AFATDS. The external LAN, must however be activated to act as the vehicle for this interface when using the external LAN interface method. If the external is already activated and communications are being conducted on the SIPRNET/NIPRNET, no further action is necessary. If, however, the external LAN is not to being used in your unit's communications plan, a dummy unit must be built so the external LAN can be activated. This dummy unit can be any unit capable of LAN communications, and must be a unit that your station will never communicate with, as it's only purpose is to provide a destination unit in the communications configuration for LAN connectivity. This destination unit is then added to the LAN network and the LAN activated.

i. Build the interface unit. The interface unit, is the actual TCO with which the interface is being conducted. This unit is a permanent entry in the MUL and must also be built as a unit in the current situation. As stated above, The interface unit is already created in the MUL, and is the TCO corresponding to your unit. The following are the required unit entries. All other unit entries have no effect on the interface are at the establishing unit's discretion.

UNIT TYPE:	OTHER
GRID:	SAME FSCC
SERVICE:	USMC
ROLE:	UNIT
ECHELON:	SECTION

FUNCTION: UNIT
LOWER: TCO
HIGHER: YOUR TAG NAME
NEXT POSITION: MANDITORY, BUT NO EFFECT.

j. Build an IP network, if one is not already active, and ensure the destination unit is the connectivity (Dummy) TCO destination unit. The LAN need not be on when using the internal LAN interface method.

k. Ping the other stations.

l. Create a TCO distribution list and criteria for unit data.

m. Assign the interface parameters, assign the interface unit and turn-on the AFATDS to TCO interface.

NOTE: When transmitting an OTH GOLD overlay from TCO to AFATDS the "to" field must display AFATDS, and not the AFATDS' unit name.

TCO/AFATDS INTERFACE

AFATDS to TCO

Friendly unit data: All friendly unit data, *with an JMCIS alias*, is passed automatically to TCO when the interface is enabled. The unit data is received and created as a track at TCO. The track is displayed with a unit name, but contains only the portion of data it is capable of storing. TCO (friendly unit) tracks are automatically updated by establishing data distribution for unit data to the TCO. When changes are made at the interface AFATDS, that unit data must be manually transmitted to TCO, just as any other data must be, that was not received.

Enemy unit data: All enemy unit data is passed automatically to TCO when the interface is enabled. Enemy unit data requires no MUL entries i.e. JMCIS alias. The unit data is received and created as a track at TCO. The track is displayed with a unit name, but contains only the portion of data it is capable of storing. TCO (enemy unit) tracks are automatically updated by establishing data distribution for unit data to the TCO. When changes are made at the interface AFATDS, that unit data must be manually transmitted to TCO, just as any other data must be, that was not received.

Geometries including fire support coordination measures: Geometries are passed to TCO using the transfer current method. This sends the type of geometries selected for transmission, to TCO in a single overlay. This overlay is received at TCO and must be activated to display. Overlays received, are identified as a JMCIS overlay with the source being AFATDS. Subsequent transmissions of the current situation to TCO, are received, and overwrite the previous overlay. The changes are displayed automatically at TCO if the previous AFATDS overlay was activated, when the subsequent one was received. Geometries displayed at TCO, are not named, as naming is accomplished at TCO by building a textual overlay. Each geometry created at TCO, is considered as an individual overlay and must have a textual overlay created over the top of it for a name to appear on the display. This problem causes the TCO operator to either walk over to, or establish voice communications to the AFATDS to determine the names of the received geometries (freetext messages are not part of the interface capabilities).

TCO to AFATDS

Friendly tracks: Friendly tracks are transmitted to AFATDS automatically when the interface is established at AFATDS. The link identifying these units is the JMCIS alias in the MUL. For this reason any unit built at the TCO must adhere to the naming convention for that unit in the AFATDS MUL. Friendly units, received at AFATDS and not already built at AFATDS, must be built in the MUL. A friendly unit built at TCO and not previously built at AFATDS may have a problem mapping over the icon role or the unit type when received from TCO. Additionally command and support relations will be blank and detailed unit information will be the AFATDS defaults. For the above reasons, it is recommended that all units be built at AFATDS originally, and updated if necessary by TCO. Any updates to friendly tracks, at TCO, will result an automatic update at AFATDS for that unit.

Enemy unit tracks: Enemy tracks are transmitted to AFATDS automatically when the interface is established at AFATDS. As would be expected, there is no requirement for a MUL entry prior to receiving these tracks. Any updates to enemy tracks, at TCO, will result an automatic update at AFATDS for that unit. A major stumbling block to the concept of IAS updating TCO with the enemy picture and TCO updating AFATDS will be the inability for AFATDS to receive or transmit a delete command corresponding to a unit.

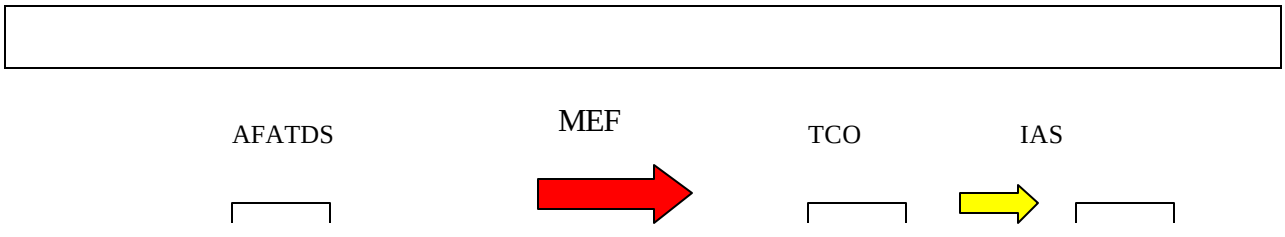
OTH Gold overlays: OTH gold overlays may be transmitted singly or in mass to AFATDS. These overlays are translated to geometries at AFATDS and dis play the name built into the overlay. Textual overlays are rejected at AFATDS, as it does not use them, the name assigned when building the overlay will be displayed at AFATDS. This will require the TCO operators to use common naming conventions when building overlays. Also TCO is not capable of assigning functionality to geometries (they are just pictures on a screen) they are received as general areas, points or lines. As a general area, point or line they are not associated with fire support coordination rules or any other functionality. This makes them useless, to a fire support computer, and must be printed and re-entered to give them functionality.

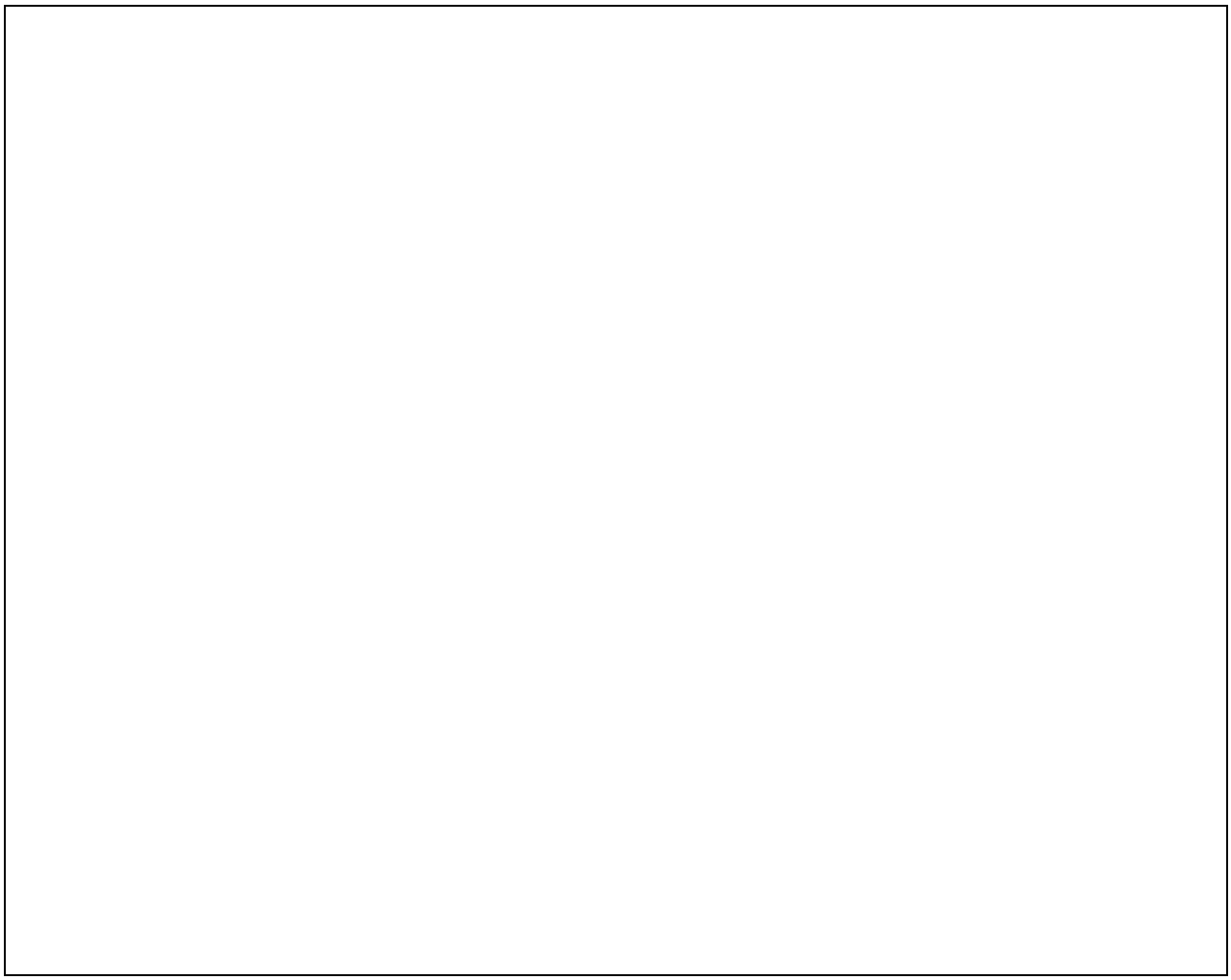
General problem

As mentioned above AFATDS does not receive or transmit a unit delete command. When a friendly or enemy unit is deleted at a JMCIS station (IAS/TCO), AFATDS will not reflect the deletion, conversely, when a friendly or enemy unit is deleted at AFATDS that deletion will not be reflected at the JMCIS stations.

JMCIS stations update each other with track or unit deletions, AFATDS stations are specifically designed not to. This behavior causes the common picture between AFATDS and JMCIS stations to be compromised. The enemy situation is being managed at the JMCIS stations (IAS and sent to TCO) then sent to the AFATDS for distribution through the AFATDS chain. Without a manual workaround the AFATDS stations will not receive enemy unit deletions, thus a breakdown in the common picture. The easiest solution to this problem is to have each TCO echelon manually inform the same AFATDS echelon of the deletions. This could be done by the S-2 sending an opnote to the TCOs prior to deletion, for dissemination to the AFATDS and manual deletion.

COMMON TACTICAL PICTURE DATA FLOW





AFATDS FIRE SUPPORT CLIENT

The below described functionality was originally intended for release with A98 software. However, in an effort to enhance it's capability and to make it more robust, a decision was made to wait and release a more mature version of this functionality with A99 software. The procedures for use of this functionality are being retained with the A98 version of the TPM as the FS client functionality may be made available for demonstration purposes. Also it is believed that this functionality will be very popular and widely used by commanders and staff.

GENERAL DESCRIPTION

The AFATDS FS Client allows remote access to the AFATDS database changing the operator's view at the AFATDS. This is accomplished by adding a server function to AFATDS software. The server allows access to the AFATDS database and fire support applications from a Java enabled browser. The familiar look and feel of the browser environment makes access to the AFATDS database easier and lessens the training burden for a commander or staff member.

SOFTWARE

The Client is currently built from AFATDS 98 with Netscape server software added. JAVA 1.2 and Common Object Request Broker Architecture (CORBA) provide the ability to access the AFATDS database from a browser and update the

browser picture quickly. The browser currently supported is Netscape Communicator 3.0 or higher (downloading 4.5 from AFATDS is recommended).

CAPABILITIES

The Client browser access allows the following fire support and collaborative planning functions to be exercised.

1. Situational Awareness
2. Fire Request Submission
3. Unit Data, Updates, Location and Deletion
4. Geometry, Creation and Deletion
5. Fire Support Coordination and Deconfliction Request
6. Access to Commander's Guidance and Operations Orders
7. Counterfire Awareness, Creation and Monitoring
8. Record and Playback

FS CLIENT/WEB SERVER SET-UP

Web Server Setup

9. Ensure that AFATDS 98 software is loaded.
10. Login to the operator account.
11. Start AFATDS.
12. Restore a database and replace the default.
13. Activate AFATDS
14. Setup ELAN via AFATDS comms configuration or use internal LAN address.
15. Load the A98 BCD Java updates:
16. Insert the Java CD ROM.
17. Open an X-term
18. Type the command cd /h/AFATDS/data/cgi-bin
19. Ensure the proper directory and type ./run_install
20. eject CD-ROM.

Setting up web client with Windows NT 4.0

1. Laptop being used as the FS client must have a version of NETSCAPE COMMUNICATOR (3.0 to 4.5). ** If Internet Explorer is the only browser available, continue with steps 3 - 14. NETSCAPE should then be downloaded from the server (AFATDS), setup and the remainder of the programs downloaded using NETSCAPE. In addition the laptop must have the following minimum capabilities;
   a) 266 MHz Intel Pentium or Pentium II.
   b) 64 MB of RAM (minimum).
   c) Ethernet LAN Card.
2. Apply power to the laptop computer and log into Windows NT. User Account must have all permissions to change computer settings.
3. Click on START - SETTINGS - CONTROL PANEL - NETWORK
4. The computer name is used by Windows NT as the "HOSTNAME" on the LAN. (The Computer Name can under no circumstances begin with a number character.) No Hostname or IP address entries are required at AFATDS for the client.
5. SERVICES TAB: No entries are made under this tab.
6. PROTOCOLS TAB: TCP/IP Protocol must be available. Highlight TCP/IP Protocol and click on Properties.
7. Select "SPECIFY AN IP ADDRESS" the IP Address, Subnet Mask, and Default Gateway fields become active.
8. Enter the IP address of the client workstation (laptop computer).
9. If a Subnet Mask is entered in the AFATDS, the same must be entered in the Subnet Mask field here.
10. The DEFAULT GATEWAY is the IP Address of the client entered for a second time. It must be the same as the IP Address field.
11. DNS TAB: No entries made here. Delete any IP Addresses that are present under this tab.
12. WINS ADDRESS TAB: "Primary WINS Server" enter the IP Address of the router if a router is being used.

De-select the DNS Configuration block and Check the Enable LMHosts lookup.

13. EDIT THE LMHosts FILE: Using MS-DOS Prompt, create a "lmhosts" file. This is accomplished by typing "edit lmhosts", the lmhosts.exe will open allowing entries into the lmhosts file. The entry here is that of the AFATDS IP Address and Hostname. The IP address used will be that of the internal or external LAN, whichever the Client/Server connection is being over. The Hostname is the "machine hostname" or the hostname entered when loading software, i.e. afatds01, afatds02…
    EXAMPLE: 193.8.12.34 afatds01
    Save the Lmhosts file in the following directory: C:\WINNT\system32\drivers\etc
    (For Windows NT) C:\Windows (Windows 95 or 98).
14. Reboot the computer to save any changes made to the system.
15. **If Internet Explorer is the only available browser, use the URL from step 18 to download Netscape Communicator 4.5 and complete it's setup prior to continuing with step 16. If Netscape Communicator is available, proceed to step 16 and update the version if 4.5 is not the current version being used.

START NETSCAPE COMMUNICATOR:

16. Click on EDIT, PREFERENCES, ADVANCED, PROXIES - Change to DIRECT CONNECTION TO THE INTERNET.
17. Type in the following web address: http://server_name/BCD/plugin-install.html this will allow the client to download NETSCAPE 4.5 (used to update prior versions of Netscape), Java Plugin's and Java Policy (allows the client to login and view the java windows for the server). All of these files need to be present at the client in order to client into J.A.C.C.S.
18. Download NETSCAPE COMMUNICATOR, and save it to the DESKTOP.
19. Download the Java Plug-In and save it to the DESKTOP.
20. Download the Java Policy, save this file to the C:\Windows (Windows 95/98) and in the C:\WINNT\profiles\User Account (Windows NT). When Save As is selected, the path selection window is displayed, ensure the correct path is selected and that the file name is .java
21. Once all files have been downloaded to the client, close Netscape.
22. Double click the Java Plug-in Setup Icon (from the desktop) to start the setup for Java Plug-in. After setup has completed, click on START, PROGRAMS and JAVA CONSOLE. Once the Java Plug-In Console is displayed ensure that all three boxes are checked and click the APPLY button on the console window. Close the Java Console.
23. Double click on the NETSCAPE 4.5 Setup Icon (from the desktop). Complete the setup process for NETSCAPE, the last step to the set-up is to reboot the system. Re-boot the system.
24. Start Netscape and connect to the server with the following URL: http://server_name/cgi-bin/start.cgi
25. A login window will appear, login to the server with a01, a02, a03 or any other established user account. (a01, a02,a03 are default user accounts at the server)

Instructions for adding a User for Client access to AFATDS Web Server

1. Open netscape browser on the AFATDS server.
   Note: just click out of any error/warning dialogs that appear.
2. In the URL location field, type "http://localhost:5555".
3. When prompted, enter "admin" for both username and password.
   Note: this password may need to be changed someday to be secure.
4. Netscape should load its Server Administration page.
   Under "General Administration", click on "Users & Groups".
5. Click on "New User". Note: this may already be defaulted.
6. Enter the desired first name, then hit tab.
7. Enter the desired last name, then hit tab.
8. Now select tab twice, to move through the full name and user id fields and use the defaults, or enter the desired info there.
   Enter the password for that user and select tab.
10. Enter the password for that user again to verify and select tab.
11. The email address field can be left blank.
12. Click on "Create User" button along the bottom to create this user.
13. To create more users, repeat steps 5 through 12. Otherwise, close netscape.

CHAPTER 3

SYSTEM INITIALIZATION

1. **GENERAL.** Specific changes to system initialization and the database are required to allow the Marine Corps automated systems to inter-operate. These changes are addressed in this chapter by device.

2. **AFATDS.** Some AFATDS information must be present to ease inter-operability with IFSAS. The following set changes are directed.

A. **FA ATTACK METHODS.** IFSAS and AFATDS both treat targets as either volleys or effects targets during mission processing. However, both systems are not in agreement as to which targets can be processed as effects targets. To preclude transmitting a fire mission to an IFSAS computer with effects specified for a target type that IFSAS will only process as a volleys target, the following target types must be specified as volleys targets in the FA METHOD OF ATTACK. When disseminating FA ATTACK METHODS to IFSAS they are transmitted by selecting SEND CATEGORY vice SEND. This will send all guidance for all types of targets in that category, avoiding tying up the net. The SEND option is for transmitting to another AFATDS.

IFSAS	AFATDS/IFSAS
(1) AMMUNITION DUMP	(1) LOC/DEFILE
(2) ANTITANK GUN	(2) HILL
(3) ARTY, HVY	(3) LANDING STRIP
(4) ARTY, UNK	(4) RAILROAD SEGMENT
(5) BRIDGE, FOOT PONTOON	(5) ROAD JUNCTION
(6) BRIDGE, FOOTBRIDGE RAFT	(6) ROAD SEGMENT
(7) BUNKER	(7) TERRAIN FEATURE
(8) CHEM. PRODUCTION FACILITY	(8) BRIDGE VEH/CONC
(9) FERRY, BRIDGE	(9) BRIDGE VEH/WOOD
(10) MG, HVY	(10) BRIDGE VEH/STEEL
(11) MG. LT.	(11) BRIDGE SITE
(12) MORTAR, HVY	(12) ENGINEER/BLDG CONC.
(13) MORTAR, LIGHT	(13) BLDG. UNK
(14) MORTAR, UNK	(14) BLDG. MASONRY
(15) MORTAR, VERY HVY	(15) BLDG. SPEC PURPOSE
(16) PETROL PRODUCTION DUMP	(16) BLDG. METAL
(17) PILLBOX	(17) BLDG. WOOD
(18) RECOILLESS RIFLE	
(19) SUPPLY DUMP, CLASS I	
(20) SUPPLY DUMP, CLASS II	
(21) SUPPLY DUMP, UNK	
(22) WEAPON, CREW SERVED	
(23) PERSONNEL TARGET (with degrees of protection COVERED & PRONE and PRONE.)	

1. **IFSAS.** Initial Fire Support Automated System (IFSAS) initialization complies with the directives established in FMFM 6-18-1 TECHNIQUES AND

PROCEDURES FOR MARINE CORPS AUTOMATED FIRE SUPPORT SYSTEM (MCFSS) except where directed otherwise in this SOP.

A. **DATA BASE.** The data base stored at IFSAS contains all fire units and observers that support the station and its parent command and supported units.

B. **GUIDANCE.**

(1) **FM;FUSEL.** At each IFSAS station all fire support units that support that station's supported unit are ordered under the logical name of the supported unit using the FM;FUSEL message. For example, an IFSAS equipped battalion FSCC supports the regimental FSCC (See TABLE 4-1, page 4-1 of Chapter 4). The supported regimental FSCC has an artillery battalion in direct support and an artillery battalion reinforcing the DS battalion's fires. The IFSAS battalion FSCC stores all fire units of the two battalions and orders these under the logical name of the regimental FSCC. This procedure precludes an FM;CFF:X being generated (See Appendix D, Chap.7)

(2) **FM:MOD.** When a priority type, priority zone, or priority shell are entered in an IFSAS MOD FILE, and a priority mission is generated as a result, the only effect on an IFSAS computer is to annotate the mission as priority. However, a priority mission received at AFATDS has a different meaning. For example, if a fire request is received and processed at an IFSAS Battalion FSCC, generating a priority TGT, and the Bn's mortars are unable to defeat the target, a CFF is generated for transmission to the Regt FSCC by virtue of Bn's FUSEL. This mission is received at Regt as a (Precedence) priority mission (reserved for FPFs, priority copperheads or priority targets in AFATDS) precluding the attack by air. In addition this overrides AFATDS' method of assigning precedence to targets. IFSAS units DO NOT make any entries into the PRI ZONE and the PRI TGT fields of the FM;MOD. Also, Copperhead is the only allowable PRI SHELL entry.

1. **BCS.** BCS is initialized as per ST 6-40-1 BCS JOB AIDS. The following specific entries are made.

A. **RPTAMMO field.** The RPTAMMO field of the BCS;SETUP message is entered with the logical name of the battery AFATDS. This allows ammunition updates to be transmitted to the AFATDS and then to be pushed into data distribution.

B. **RANGE limits.** The minimum and maximum ranges are not changed at AFATDS based on data received in the AFU;UPDATE from the BCS. The battery AFATDS operator ensures the correct maximum ranges are entered in the battery's DETAILED UNIT INFO window. These must be based on the ammunition available. *Do not use the default maximum ranges unless these accurately reflect the units capabilities.*

C. **AMMUNITION REPORTING.** AFATDS does not store the same ammunition set that BCS stores. Prior to reporting ammunition on hand the BCS operator must make the following changes:

(1) Display the AFU;AMMO message at the BCS.

(2) Change SMD to SMC and PDE to PDAD.

(3) Without entering these changes, transmit the messages.

(4) Failure to follow these procedures will result in the alert TF_AFU_UPDATE MESSAGE RECEIVED, TRANSLATION ERROR. The changes will prevent this. **FIREFINDER RADAR.** As per appropriate TM.

1. **MDS/MMS.** As per appropriate TM.

2. **DMS.** The DMS is initialized as FIST:YES or FIST:NO with the supported unit as the default destination.

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CHAPTER 4

COMMAND-SUPPORTED RELATIONSHIPS AND CONOPS

1. **COMMAND AND SUPPORTED RELATIONSHIPS.** As per Chapter 4, MCRP 3-16.2A.

1. **CONOPS.** Because of the limited number of AFATDS computers available to the Marine Corps special procedures are required for CONOPS.

A. Table 4-1 provides the relationships.

Table 4-1, CONOPS BACKUPS

OPFAC	PRIMARY BACK-UP	SECONDARY BACK-UP
DIVISION FSCC	DIVISION FSCC FWD	MEF FFCC
REGT FSCC	REGT FSCC FWD	SISTER REGIMENT
DS BN FDC	DS BN FDC FWD	SUPPORTED REGIMENTAL FSCC
BN FSCC	BN FSCC FWD	REGT FSCC

B. **Execution of CONOPS**. CONOPS is executed as per Chapter 4, MCRP 3-16.2A and as per the CONOPS checklists that may be printed from the AFATDS OPFAC.

(1) **PLANNED CONOPS.** Stations that are backed up by an OPFAC other than their forward will provide a jump or liaison team to the back-up.

(2) **UNPLANNED CONOPS**. Unplanned CONOPS will be executed for any station when:

(a) that station can not be contacted by any other station for 10 minutes,

(b) that station reports catastrophic failure of automated equipment and cannot conduct planned CONOPS,

(c) at the direction of the commanding officer of the unit to be backed up.

C. **CONOPS WITH AFATDS SATELLITES.** IFSAS stations do not possess an inherent CONOPS function. Instead, the IFSAS SATELLITE performs the following:

(1) **PLANNED CONOPS**.

(a) Change net settings and subscriber data as directed by the backup.

1) Delete all MOI files for the principal and re-enter these to direct the same information to the backup.

(b) Re-FUSEL all units previously FUSELed under the principal, under the backup.

(2) **UNPLANNED CONOPS.**

(a) When directed to enter CONOPS, creates an FM;CENTER file by ordering all organic fire units under the BACKUP'S logical name.

(b) Orders all other fire units that were ordered under the principal, under the backup.

(c) Recalculates each active mission to cause the generation of fire mission chains with FM;CFF messages directed to the backup.

1) Select SELECT FUNCTION, FIRE MISSION, CFF, RECALC and select the target number. Select ACTION, ENTER.

2) A fire mission chain is placed in the PRIORITY QUEUE. Press ALT, F1 to view the contents of the queue.

3) Select the fire mission from the queue and transmit the FM;CFF to the backup.

4) In this fashion each individual fire mission from the active file is transmitted.

(d) Notify the backup when all active targets have been transmitted.

(3) **The BACKUP:**

(a) Directs the required changes to comm and MOI files to the IFSAS station.

(b) After entering CONOPS, examines the CONOPS RESPONSE window. When all AFATDS stations have responded, click 1 on CONTINUE to merge the target lists. This is necessary since the IFSAS satellites will not respond to the query.

CHAPTER 5

SOP INFORMATION DISTRIBUTION

1. **GENERAL.** Information distribution provides the maintenance of a common data base at all systems. This distribution is created and maintained by creating the message of interest (MOI) files and standing requests for information (SRIs) at the IFSAS computers and a combination of data distribution, met distribution and received message setup at AFATDS computers.

2. AFATDS.

A. **DATA DISTRIBUTION.** As per chapter 6, MCRP 3-16.2A.

B. **RECEIVED MESSAGE SETUP.** As per Chapter 3, table 3-1 of MCWP 3-16.2A.

3. IFSAS.

A. **MOI SETUP.**

(1) **Battalion FSCC.** As per Chapter 2, MCRP 3-16.2B.

(2) **Regimental FSCC.** As per Chapter 2, MCRP 3-16.2B except MOI for ATI;CDR and ATI;AZR to division FSCC is deleted. MOI for ATI;SHR is established for the regimental FDC.

(3) **DS BN FDC.** As per Chapter 2, MCRP 3-16.2B.

(4) **R BN FDC.** As per Chapter 2, MCRP 3-16.2B.

(5) **GSR BN FDC.** As per Chapter 2, MCRP 3-16.2B.

(6) **GS BN FDC.** As per Chapter 2, MCRP 3-16.2B.

(7) **REGIMENTAL FDC.** As per Chapter 2, MCRP 3-16.2B except MOI for ATI;CDR and ATI;AZR to division FSCC is deleted.

(8) **TPC.** As per Chapter 2, MCRP 3-16.2B.

(9) **DIVISION FSCC.** As per Chapter 2, MCRP 3-16.2B.

(10) **MAGTF FFCC.** As per Chapter 2, MCRP 3-16.2B.

B.**STANDING REQUESTS FOR INFORMATION.** The SRI structure defined in Chapter 2, MCRP 3-16.2B except for the following.

(1) **REGIMENTAL FSCC.** Delete SRI to division FSCC.

(2) **REGIMENTAL FDC.** Delete three SRIs to division FSCC for EQUIP/RADAR, SUPPLY/AMMO and PERS/OP. (If IFSAS)

(3) **TPC.** Delete three SRIs to division FSCC for ARTY, MORT and RKTMSL. (If IFSAS)

4. **BCS.** All data distributed by the BCS is accomplished by manual transmission.

5. **FIREFINDER RADAR.** All data distributed by the radar is accomplished by manual transmission.

6. **MDS/MMS.** All data distributed by the MDS/MMS is accomplished by manual transmission.

7. **DMS.** All data distributed by the DMS is accomplished by manual transmission.

CHAPTER 6

PLAN SOP GUIDANCE

1. **GENERAL.** This chapter provides operator entered values for all guidance criteria. These values are generic, and when implemented, form a base or starting point. During actual operations, only the necessary changes to these values will be published in the operations order. By utilizing plan SOP in this manner the need for massive database entry is kept to a minimum. In addition to guidance entries the map mod, map setup, units and overlays should be included to minimize database construction in the field. This data is not included for the obivious reason that this data cannot be standardized and will change from operation to operation.

A. Storage. The guidance information contained herein is stored in PLAN SOP.

B. Target selection standards (TSS). The following values were determined with the intention of fire requests not being checked against TSS. Only maximum target location error and maximum report age are listed. *

CAT/TYPE	MAX TLE	MAX RPT AGE	CAT/TYPE	MAX TLE	MAX RPT AGE
C3			**MANEUVER**		
CP, Battalion	400	480	Antitank Gun	100	30
CP, Division	400	1200	APC	100	30
CP, Forward	400	180	Armored Veh	100	30
CP, Regiment	400	720	AA, Mech Troops	400	120
CP, Small	400	180	AA, Troops	400	120
CP, Unknown	400	180	AA, Troops and Armor	400	120
Guidance Equipment	100	120	AA, Troops and Vehs	400	120
Navigation Aids	100	120	AA, Unknown	400	120
FS			Infantry	400	60
Arty, Hvy SP (>160mm)	100	90	MG, Hvy (>=50Cal)	100	60
Arty, Med SP (121-160mm)	100	75	MG, Light (<50Cal)	100	30
Arty, Light SP (<121)	100	60	Observation Post	400	120
Arty, Towed	100	75	Patrol	100	30
Arty, Unknown	100	90	Recoilless Rifle	100	60
Missle, Hvy	100	120	Tank, Hvy (>120mm)	100	45
Missle, Med	100	90	Tank, Med (90-120mm)	100	30
Missle, Light	100	60	Tank, Light (<90mm)	100	30

CAT/TYPE	MAX TLE	MAX RPT AGE	CAT/TYPE	MAX TLE	MAX RPT AGE
Mortar, Very Hvy (>150mm)	100	60	Work Party	100	60
Mortar, Hvy (109-150mm)	100	60	Weapon, Crewserved	100	30
Mortar, Med (61-108mm)	100	60	**ADA**		
Mortar, Light (<121mm)	100	30	ADA, Hvy	100	120
Mortar, Unknown	100	30	ADA, Med	100	60
Rkt/Msl, Apers	100	30	ADA, Light	100	60
Rkt/Msl, antitank	100	30	ADA, Missle	100	60
Rkt/Msl, Position Area	100	60	ADA, Position Area	100	120
Rkt/Msl, Unknown	100	30	ADA, Unknown	100	120
ENGINEER			**MAINTENANCE**		
Bridge, Foot Pontoon	100	240	Supply Dump, Class I	400	180
Bridge, Veh Pontoon	100	720	Supply Dump, Class II	400	180
Bridge, Footbridge Raft	100	120	Supply Dump, Unknown	400	180
Building, Concrete	400	9999	**LIFT**		
Building, Masonry	400	9999	Boat	100	60
Building, Metal	400	9999	Ferry, Bridge	100	60
Building, Spec Purpose	400	9999	Helicopter, Attack	100	30
Building, Unknown	400	9999	Helicopter, Cargo	100	30
Building, Wood	400	9999	Helicopter, Obser	100	30
Bunker	100	720	Veh, Hvy Wheel (>=5T)	100	30
Pillbox	100	720	Veh, Light Wheel (<5T)	100	30
RSTA			Veh, Utility	100	30
Counter-Btry Radar	80	60	Aircraft	100	60
Counter-Mortar Radar	80	60	**LOC**		
Dir-Finding Radar	80	60	Defile	100	9999
Ground-Surv Radar	80	60	Hill	100	9999
Search Light	80	30	Landing Strip	400	9999
Recon Vehicle	100	30	Railroad Segment	400	9999
REC			Road Junction	100	9999
Loudspeaker Equipment	80	60	Road Segment	100	9999

CAT/TYPE	MAX TLE	MAX RPT AGE	CAT/TYPE	MAX TLE	MAX RPT AGE
EW Equip	80	60	Terrain Feature	100	9999
NUC/CHEM			Bridge, Veh Concrete	400	9999
Chem Prod Complex	400	2880	Bridge, Veh Wood	400	9999
POL			Bridge, Veh Steel	400	9999
Petrol Prod Complex	400	9999	Bridge, Site	400	720
AMMO					
Ammunition Dump	400	2880			

* All sensors default to Reliable for all target category types, for this reason, all target category types, with the exception of Fire Support, should be deselected for Firefinder radars. The other sensors may be edited for reliability as desired.

High value target list (HVT). With the data given below, use the following references:

WHEN: I=IMMEDIATE, A=AS ACQUIRED, P=PLANNED.

EFFECTS: S=SUPPRESS (3%) N=NEUTRALIZE (10%) D=DESTROY (30%)

VALUE: Value of the thirteen target categories in relation to each other.

CATEGORY	EFFECT	PERCENT	WHEN	VALUE
C3	DESTROY	30	A	90
FIRE SUPPORT	NEUTRALIZE	10	A	100
MANEUVER	NEUTRALIZE	10	A	80
ADA	DESTROY	30	A	85
ENGINEER	NEUTRALIZE	10	A	60
RSTA	SUPPRESS	3	A	95
REC	SUPPRESS	3	A	50
NUC/CHEM	NEUTRALIZE	10	A	60
POL	DESTROY	30	A	45
AMMO	DESTROY	30	A	35
MAINTENANCE	SUPPRESS	3	A	30
LIFT	SUPPRESS	3	A	55
LOC	SUPPRESS	3	A	30

Target management matrix (**TMM).** With the TMM given below, use the following references: HPT: Y=HPT, N=NON-HPT. WHEN: I=IMMEDIATE, A=AS ACQUIRED, P=PLAN. EFFECT: S=SUPPRESS, N=NEUTRALIZE, D=DESTROY. T/I (TDA/IEW): T=TDA required, I=IEW approval required.

CAT/TYPE	HPT?	WHEN	EFF	%	T/I	VALUE	CAT/TYPE	HPT?	WHEN	EFF	%	T/I	VALUE
ADA							**C3**						
ADA, Hvy	N	A	N	10			CP, Battalion	N	A	N	10		
ADA, Med	N	A	N	10			CP, Division	Y	I	D	30	T	90
ADA, Light	N	A	N	10			CP, Forward	N	A	N	10		
ADA, Missle	Y	A	N	10	T	75	CP, Regiment	N	A	N	10		
ADA, Position Area	Y	I	N	10	T	95	CP, Small	N	A	N	10		
ADA, Unknown	N	A	N	10			CP, Unknown	N	A	N	10		
FS							Guidance Equipment	Y	A	N	10	I	65
Arty, Hvy SP (>160mm)	Y	A	N	10	T	90	Navigation Aids	N	A	N	10		
Arty, Med SP (121-160mm)	N	A	N	10			**MANEUVER**	N	A	N	10		
Arty, Light SP (<121)	N	A	N	10			Antitank Gun	N	A	N	10		

CAT/TYPE	HPT?	WHEN	EFF	%	T/I	VALUE	CAT/TYPE	HPT?	WHEN	EFF	%	T/I	VALUE
Arty, Towed	Y	A	N	10	T	85	APC	N	A	N	10		
Arty, Unknown	N	A	N	10			Armored Veh	N	A	N	10		
Missle, Hvy	N	A	N	10			AA, Mech Troops	Y	A	N	10	T	50
FS Cont.							**MANEUVER Cont.**						
Missle, Med	Y	A	N	10	T	90	AA, Troops	N	A	N	10		
Missle, Light	Y	A	N	10	T	90	AA, Troops and Armor	N	A	N	10		
Mortar, Very Hvy (>150mm)	Y	A	N	10	T	80	AA, Troops and Vehs	N	A	N	10		
Mortar, Hvy (109-150mm)	N	A	N	10			AA, Unknown	N	A	N	10		
Mortar, Med (61-108mm)	N	A	N	10			Infantry	N	A	N	10		
Mortar, Light (<121mm)	N	A	N	10			MG, Hvy (>=50Cal)	N	A	N	10		
Mortar, Unknown	N	A	N	10			MG, Light (<50Cal)	N	A	N	10		
Rkt/Msl, Apers	N	A	N	10			Observation Post	N	A	N	10		
Rkt/Msl, antitank	N	A	N	10			Patrol	N	A	N	10		
Rkt/Msl, Position Area	Y	A	D	30	T	95	Recoilless Rifle	N	A	N	10		
Rkt/Msl, Unknown	N	A	N	10			Tank, Hvy (>120mm)	N	A	N	10		
MAINTENANCE							Tank, Med (90-120mm)	N	A	N	10		
Supply Dump, Class I	N	A	N	3			Tank, Light (<90mm)	N	A	S	3		
Supply Dump, Class II	N	A	N	3			Work Party	N	A	S	3		
Supply Dump, Unknown	N	A	N	3			Weapon, Crewserved	Y	A	S	3		50
ENGINEER							**NUC/CHEM**						
Bridge, Foot Pontoon	N	A	N	10			Chem Prod Complex	N	A	D	30		
Bridge, Veh Pontoon	N	A	N	10			**POL**						
Bridge, Footbridge Raft	N	A	N	10			Petrol Prod Complex	N	A	D	30		
Building, Concrete	N	A					**AMMO**						
Building, Masonry	N	A					Ammunition Dump	Y	A	D	30	T	60
Building, Metal	N	A					**LIFT**						
Building, Spec Purpose	N	A					Boat	N	A	S	3		

CAT/TYPE	**HPT?**	WHEN	EFF	%	T/I	VALUE	**CAT/TYPE**	**HPT?**	**WHEN**	EFF	%	T/I	VALUE
Building, Unknown	N	A					Ferry, Bridge	N	A	S	3		
Building, Wood	N	A					Helicopter, Attack	N	A	S	3		
Bunker	N	A	N	10			Helicopter, Cargo	N	A	S	3		
Pillbox	N	A	N	10			Helicopter, Obser	N	A	S	3		
LOC							Veh, Hvy Wheel (>=5T)	N	A	S	3		
Defile	N	A					Veh, Light Wheel (<5T)	N	A	S	3		
Hill	N	A					Veh, Utility	N	A	S	3		

LOC Cont.							**LIFT Cont.**						
Landing Strip	N	A					Aircraft	N	A	S	3		
Railroad Segment	N	A					**REC**						
Road Junction	N	A					Loudspeaker Equipment	N	A	N	10		
Road Segment	N	A					EW Equip	N	A	N	10	I	
Terrain Feature	N	A					**RSTA**						
Bridge, Veh Concrete	N	A					Counter-Btry Radar	Y	I	D	30		65
Bridge, Veh Wood	N	A					Counter-Mortar Radar	N	A	N	10		
Bridge, Veh Steel	N	A					Dir-Finding Radar	Y	A	N	10	I	60
Bridge, Site	N	A					Ground-Surv Radar	N	A	N	10		
							Search Light	N	A	N	10		
							Recon Vehicle	Y	A	N	10	T	55

FA IMMEDIATE ATTACK METHODS.

MISSION	FIRST SHELL/FZ	VOLLEYS	FIRE UNIT SIZE
IMMEDIATE SUPPRESSION	DPICM/TIME	1	BATTERY
IMMEDIATE SMOKE	WP/TI WP2/TI	1	BATTERY

IMMEDIATE MISSION ROUTING. Dependant on guidance from the DS artillery.

FA RESTRICTIONS. FA restrictions vary with the tactical situation and mission. These should be determined prior to each operation and modified as required. The table below provides only recommended maximum volleys, as Max Firing Units Per Target would depend on the number of units supporting your OPFAC.

UNIT ID: Entered with your own name at all OPFACs who intend to mass fires.

RESTRICTED SHELLS	RESTRICTED FUZES	MAX VOLLEYS	Max Firing Units/Tgt
NONE	NONE	3	Entered at units supported by artillery. The entry equals the number of batteries in the DS and R battalions. Also can be entered at the Bn. FSCC when it's mortars are split.

TARGET DUPLICATION. The value entered here will only be checked against active targets, or if duplication is checked for manually, in the oncall target list. Target duplication is a miscellaneous guidance and not available for entry in a plan.

FS SYSTEM BUFFERS. The values entered here are added to a target's size when checked against FSCM violations. This guidance is also a miscellaneous guidance and not available for entry in a plan.

TARGET DECAY TIMES. The times entered in this guidance determine the operational until time and like the rest of the miscellaneous guidances are not entered into a planned situation.

ATTACK METHODS TABLE FOR ARTILLERY AND MORTARS.

	ARTILLERY				MORTAR			
CAT/TYPE	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**
ADA								
ADA, Hvy	DPICM	TI	1	BTRY	HE	VT	2	PLT
ADA, Med	DPICM	TI	1	BTRY	HE	VT	2	PLT
ADA, Light	DPICM	TI	1	BTRY	HE	VT	2	PLT
ADA, Missle	DPICM	TI	1	BTRY	HE	VT	3	PLT
ADA, Position Area	DPICM	TI	1	BTRY	HE	VT	3	PLT
ADA, Unknown	DPICM	TI	2	BTRY	HE	VT	4	PLT
FS								
Arty, Hvy SP (>160mm)	DPICM	TI	1	BTRY	HE	PD	3	PLT
Arty, Med SP (121-160mm)	DPICM	TI	2	BTRY	HE	PD	5	PLT
Arty, Light SP (<121)	DPICM	TI	4	BTRY	HE	PD	5	PLT
Arty, Towed	DPICM	TI	5	BTRY	HE	PD	5	PLT
Arty, Unknown	DPICM	TI	5	BTRY	HE	PD	3	PLT
Missle, Hvy	HE/WP	VT/PD	3	BTRY	HE	VT	2	PLT
Missle, Med	HE/WP	VT/PD	3	BTRY	HE	VT	2	PLT
Missle, Light	HE/WP	VT/PD	3	BTRY	HE	VT	2	PLT
Mortar, Very Hvy (>150mm)	HE	VT	2	BTRY	HE	PD	2	PLT
Mortar, Hvy (109-150mm)	HE	VT	2	BTRY	HE	PD	2	PLT
Mortar, Med (61-108mm)	HE	VT	2	BTRY	HE	PD	1	PLT
Mortar, Light (<121mm)	HE	VT	2	BTRY	HE	PD	1	PLT
Mortar, Unknown	HE	PD	1	BTRY	WP	PD	1	PLT
Rkt/Msl, Apers	HE/WP	PD/PD	2	BTRY	WP	PD	1	PLT
Rkt/Msl, antitank	HE	PD	2	BTRY	WP	PD	3	PLT
Rkt/Msl, Position Area	HE	PD	2	BTRY	WP	PD	3	PLT
Rkt/Msl, Unknown	HE	PD	2	BTRY	WP	PD	3	PLT
C3								
CP, Battalion	DPICM	TI	4	BTRY	HE	PD	4	PLT
CP, Division	DPICM	TI	3	BN	HE	PD	8	PLT
CP, Forward	DPICM	TI	2	BN	HE	PD	4	PLT

	ARTILLERY				MORTAR			
CAT/TYPE	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**
CP, Regiment	DPICM	TI	2	BN	HE	PD	5	PLT
CP, Small	DPICM	TI	1	BTRY	HE	PD	4	PLT
CP, Unknown	DPICM	TI	1	BTRY	HE	PD	3	PLT
Guidance Equipment	HE	VT	1	BTRY	HE	PD	1	PLT
Navigation Aids	HE	VT	1	BTRY	WP	PD	1	PLT
MANEUVER								
Antitank Gun	HE	PD	1	BTRY	HE	VT	1	PLT
APC	DPICM	TI	1	BTRY	WP	PD	2	PLT
Armored Veh	DPICM	TI	2	BTRY	WP	PD	2	PLT
AA, Mech Troops	DPICM	TI	2	BN	WP	PD	2	PLT
AA, Troops	DPICM	TI	2	BN	HE	PD	5	PLT
AA, Troops and Armor	DPICM	TI	2	BN	WP	PD	6	PLT
AA, Troops and Vehs	DPICM	TI	2	BN	WP	PD	5	PLT
AA, Unknown	DPICM	TI	3	BTRY	HE	VT	4	PLT
Infantry	DPICM	TI	3	BTRY	HE	VT	4	PLT
MG, Hvy (>=50Cal)	HE	VT	1	BTRY	HE	VT	1	PLT
MG, Light (<50Cal)	WP	PD	1	BTRY	HE	VT	1	PLT
Observation Post	WP2	TI	1	BTRY	HE	PD	1	PLT
Patrol	HE	VT	1	BTRY	HE	VT	1	PLT
Recoilless Rifle	HE	PD	1	BTRY	HE	VT	1	PLT
Tank, Hvy (>120mm)	SADARM	TI	2	BTRY	WP	PD	5	PLT
Tank, Med (90-120mm)	SADARM	TI	2	BTRY	WP	PD	5	PLT
Tank, Light (<90mm)	SADARM	TI	2	BTRY	WP	PD	5	PLT
Work Party	HE	PD	1	BTRY	HE	VT	1	PLT
Weapon, Crewserved	HE	PD	1	BTRY	HE	VT	1	PLT
ENGINEER								
Bridge, Foot Pontoon	HE	VT	2	BTRY	HE	VT	1	PLT
Bridge, Veh Pontoon	HE	VT	2	BTRY	HE	VT	1	PLT
Bridge, Footbridge Raft	HE	VT	2	BTRY	HE	PD	2	PLT
Building, Concrete	HE	PD	2	BTRY	HE	PD	2	PLT
Building, Masonry	HE	DELAY	2	BTRY	HE	PD	2	PLT
Building, Metal	HE	PD	2	BTRY	HE	PD	2	PLT
Building, Spec Purpose	HE	PD	2	BTRY	HE	PD	2	PLT
Building, Unknown	HE	PD	2	BTRY	HE	PD	2	PLT
Building, Wood	WP	PD	2	BTRY	WP	PD	2	PLT

	ARTILLERY				MORTAR			
CAT/TYPE	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**
Bunker	HE	CP	1	BTRY	HE	PD	6	PLT
Pillbox	HE	DELAY	1	BTRY	HE	PD	4	PLT
REC								
Loudspeaker Equipment	HE	PD	1	BTRY	HE	VT	1	PLT
EW Equip	HE	PD	1	BTRY	HE	VT	1	PLT
RSTA								
Counter-Btry Radar	HE	PD	2	BTRY	HE	VT	3	PLT
Counter-Mortar Radar	HE	PD	2	BTRY	HE	VT	3	PLT
Dir-Finding Radar	HE	PD	1	BTRY	HE	VT	2	PLT
Ground-Surv Radar	HE	PD	1	BTRY	HE	PD	2	PLT
Search Light	HE	PD	1	BTRY	HE	PD	1	PLT
Recon Vehicle	DPICM	TI	1	BTRY	HE	PD	3	PLT
NUC/CHEM								
Chem Prod Complex	HE/WP	PD/PD	2	BN	HE/WP	PD/PD	5	PLT
POL								
Petrol Prod Complex	HE/WP	VT/PD	2	BN	WP	PD	5	PLT
AMMO								
Ammunition Dump	HE/WP	PD/PD	2	BN	HE/WP	PD/PD	5	PLT
MAINTENANCE								
Supply Dump, Class I	HE	PD	3	BTRY	HE	PD	3	PLT
Supply Dump, Class II	HE	PD	3	BTRY	HE	PD	3	PLT
Supply Dump, Unknown	HE	PD	3	BTRY	HE	PD	3	PLT
LIFT								
Boat	HE	VT	1	BTRY	HE	VT	1	PLT
Ferry, Bridge	HE	PD	2	BTRY	HE	VT	1	PLT
Helicopter, Attack	WP	PD	1	BTRY	HE	VT	1	PLT
Helicopter, Cargo	WP	PD	1	BTRY	HE	VT	1	PLT
Helicopter, Obser	WP	PD	1	BTRY	HE	VT	1	PLT
Veh, Hvy Wheel (>=5T)	HE	PD	1	BTRY	HE	PD	1	PLT
Veh, Light Wheel (<5T)	HE	VT	1	BTRY	HE	PD	1	PLT
Veh, Utility	HE	VT	1	BTRY	HE	VT	1	PLT
Aircraft	WP	PD	1	BTRY	HE	VT	1	PLT
LOC								

	ARTILLERY				MORTAR			
CAT/TYPE	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**	**1ST SHL/ 2D SHL**	**1ST FZ/ 2D FZ**	**VOL**	**FU**
Defile	HE	PD	1	BTRY	HE	PD	1	PLT
Hill	HE	PD	1	BTRY	HE	PD	1	PLT
Landing Strip	HE	DELAY	2	BTRY	HE	PD	1	PLT
Railroad Segment	HE	DELAY	1	BTRY	HE	PD	1	PLT
Road Junction	HE	PD	1	BTRY	HE	PD	1	PLT
Road Segment	HE	PD	1	BTRY	HE	PD	1	PLT
Terrain Feature	HE	PD	1	BTRY	HE	PD	1	PLT
Bridge, Veh Concrete	HE	PD	1	BTRY	HE	PD	1	PLT
Bridge, Veh Wood	HE	DELAY	1	BTRY	HE	PD	1	PLT
Bridge, Veh Steel	HE	DELAY	1	BTRY	HE	PD	1	PLT
Bridge, Site	HE	PD	1	BTRY	HE	PD	1	PLT

ATTACK METHODS TABLE FOR AIR AND AVIATION.

	AIR			AVIATION		
CAT/TYPE	**1ST MUNITION**	**2D MUNITION**	**VOL**	**1ST MUNITION**	**2ND MUNITION**	**VOL**
ADA						
ADA, Hvy	CBU	NAPALM	3			
ADA, Med	CBU	NAPALM	3			
ADA, Light	CBU	NAPALM	3			
ADA, Missle	CBU	NAPALM	3			
ADA, Position Area	CBU	NAPALM	6			
ADA, Unknown	GP		2			
FS						
Arty, Hvy SP (>160mm)	CBU	ROCKETS	1	ROCKETS		12
Arty, Med SP (121-160mm)	CBU	ROCKETS	2	ROCKETS		12
Arty, Light SP (<121)	CBU	ROCKETS	4	ROCKETS		12
Arty, Towed	CBU		5	ROCKETS		12
Arty, Unknown	CBU		5	ROCKETS		12
Missle, Hvy	GP		3	ROCKETS		12
Missle, Med	GP		3	ROCKETS		12
Missle, Light	GP		3	ROCKETS		12
Mortar, Very Hvy (>150mm)	ROCKETS		4	ROCKETS	CANNONS	6/
Mortar, Hvy (109-150mm)	ROCKETS		3	ROCKETS	CANNONS	6/
Mortar, Med (61-108mm)	ROCKETS		2	ROCKETS	CANNONS	6/

	AIR			AVIATION		
CAT/TYPE	**1ST MUNITION**	**2D MUNITION**	**VOL**	**1ST MUNITION**	**2ND MUNITION**	**VOL**
Mortar, Light (<121mm)	ROCKETS		2	ROCKETS	CANNONS	6/
Mortar, Unknown	CBU		2	ROCKETS	CANNONS	6/
Rkt/Msl, Apers	CBU		2	ROCKETS		6
Rkt/Msl, antitank	CBU		2	ROCKETS		6
Rkt/Msl, Position Area	CBU		4	ROCKETS		6
Rkt/Msl, Unknown	CBU		2	ROCKETS		6
C3						
CP, Battalion	CBU		4	ROCKETS		12
CP, Division	GUIDED MSL		3	ROCKETS		12
CP, Forward	CBU		3	ROCKETS		12
CP, Regiment	CBU		3	ROCKETS		12
CP, Small	GP		2	ROCKETS		12
CP, Unknown	GP		2	ROCKETS		12
Guidance Equipment	GUIDED MSL		1	GUIDED MSL		1
Navigation Aids	GUIDED MSL		1	GUIDED MSL		1
MANEUVER						
Antitank Gun	ROCKETS		3	ROCKETS	CANNONS	2/
APC	CBU		3	ROCKETS	CANNONS	2/
Armored Veh	CBU	GP	3	ROCKETS	CANNONS	2/
AA, Mech Troops	CBU	GP	4	ROCKETS	CANNONS	12/
AA, Troops	CBU	ROCKETS	6	ROCKETS	CANNONS	12/
AA, Troops and Armor	CBU	ROCKETS	6	ROCKETS	CANNONS	12/
AA, Troops and Vehs	CBU		6	ROCKETS	CANNONS	12/
AA, Unknown	CBU		6	ROCKETS	CANNONS	12/
Infantry	CBU		4	CANNONS		
MG, Hvy (>=50Cal)	ROCKETS		2	CANNONS		
MG, Light (<50Cal)	ROCKETS		2	CANNONS		
Observation Post	GP	ROCKETS	1	GUIDED MSL	ROCKETS	1/6
Patrol	ROCKETS		1	CANNONS		
Recoilless Rifle	ROCKETS		1	CANNONS		
Tank, Hvy (>120mm)	GP		3	GUIDED MSL	ROCKETS	1/3
Tank, Med (90-120mm)	GP		3	GUIDED MSL	ROCKETS	1/3
Tank, Light (<90mm)	GP		3	GUIDED MSL	ROCKETS	1
Work Party	CANNONS			CANNONS		
Weapon, Crewserved	ROCKETS		2	ROCKETS	CANNONS	2/

	AIR			AVIATION		
CAT/TYPE	**1ST MUNITION**	**2D MUNITION**	**VOL**	**1ST MUNITION**	**2ND MUNITION**	**VOL**
ENGINEER						
Bridge, Foot Pontoon	ROCKETS		4	ROCKETS		1
Bridge, Veh Pontoon	ROCKETS		4	ROCKETS		1
Bridge, Footbridge Raft	ROCKETS		4	ROCKETS		1
Building, Concrete	CRATERING BOMB		5	ROCKETS		4
Building, Masonry	GP		3	ROCKETS		4
Building, Metal	GP		3	ROCKETS		4
Building, Spec Purpose	GP		3	ROCKETS		4
Building, Unknown	GP		3	ROCKETS		4
Building, Wood	GP		3	ROCKETS		4
Bunker	ROCKETS		6	ROCKETS		4
Pillbox	ROCKETS		6	ROCKETS		4
RSTA						
Counter-Btry Radar	GUIDED MSL		1	GUIDED MSL		1
Counter-Mortar Radar	GUIDED MSL		1	GUIDED MSL		1
Dir-Finding Radar	GUIDED MSL		1	GUIDED MSL		1
Ground-Surv Radar	CBU		5	GUIDED MSL		1
Search Light	CBU		5	ROCKETS		2
Recon Vehicle	GP		4	ROCKETS		2
REC						
Loudspeaker Equipment	ROCKETS		4	ROCKETS		4
EW Equip	ROCKETS		1	ROCKETS		4
NUC/CHEM						
Chem Prod Complex	GP		8	GUIDED MSL	ROCKETS	1/6
POL						
Petrol Prod Complex	NAPALM		8	GUIDED MSL	ROCKETS	1/6
AMMO						
Ammunition Dump	NAPALM	GP	8	ROCKETS		6
MAINTENANCE						
Supply Dump, Class I	GP		3	ROCKETS		6
Supply Dump, Class II	GP		3	ROCKETS		6
Supply Dump, Unknown	GP		3	ROCKETS		6

	AIR			AVIATION		
CAT/TYPE	**1ST MUNITION**	**2D MUNITION**	**VOL**	**1ST MUNITION**	**2ND MUNITION**	**VOL**
LIFT						
Boat	ROCKETS		1	ROCKETS		4
Ferry, Bridge	ROCKETS		2	ROCKETS		4
Helicopter, Attack	ROCKETS		1	ROCKETS		4
Helicopter, Cargo	ROCKETS		1	ROCKETS		4
Helicopter, Obser	ROCKETS		1	ROCKETS		4
Veh, Hvy Wheel (>=5T)	GP		1	ROCKETS		4
Veh, Light Wheel (<5T)	GP		1	ROCKETS		4
Veh, Utility	GP		1	ROCKETS		4
Aircraft	CBU		1	ROCKETS		4
LOC						
Defile	GP		1	ROCKETS		1
Hill	GP		1	ROCKETS		1
Landing Strip	CRATERING BOMB		6	ROCKETS		12
Railroad Segment	GP		3	ROCKETS		12
Road Junction	GP		3	ROCKETS		1
Road Segment	GP		1	ROCKETS		1
Terrain Feature	GP		1	ROCKETS		1
Bridge, Veh Concrete	GP BOMB	GP	6	ROCKETS		12
Bridge, Veh Wood	GP BOMB	GP	4	ROCKETS		12
Bridge, Veh Steel	GP BOMB	GP	4	ROCKETS		12
Bridge, Site	GP BOMB		4	ROCKETS		12

ATTACK METHODS TABLE FOR NSFS AND ROCKET/MISSLE.

NSFS (5”54)					ROCKET/MISSLE	
CAT/TYPE	**1ST MUNITION**	**VOL**	**2ND MUNITION**	**VOL**	**MUNITION**	**VOL**
ADA					MLRS-DPICM	1
ADA, Hvy	HE	12			MLRS-DPICM	1
ADA, Med	HE	12			MLRS-DPICM	1
ADA, Light	HE	12			MLRS-DPICM	1
ADA, Missle	HE	15			MLRS-DPICM	1

ADA, Position Area	HE	8	WP	8	MLRS-DPICM	2
ADA, Unknown	HE	6			MLRS-DPICM	1
FS						
Arty, Hvy SP (>160mm)	HE	12			MLRS-DPICM	2
Arty, Med SP (121-160mm)	HE	12			MLRS-DPICM	2
Arty, Light SP (<121)	HE	12			MLRS-DPICM	2
Arty, Towed	HE	12			MLRS-DPICM	2
Arty, Unknown	HE	6			MLRS-DPICM	1
Missle, Hvy	HE	8			MLRS-DPICM	1
Missle, Med	HE	8			MLRS-DPICM	1

Missle, Light	HE	8			MLRS-DPICM	1
Mortar, Very Hvy (>150mm)	HE	12				
Mortar, Hvy (109-150mm)	HE	12				
Mortar, Med (61-108mm)	HE	8				
Mortar, Light (<121mm)	HE	8				
Mortar, Unknown	HE	6				
Rkt/Msl, Apers	HE	4	WP	4	MLRS-DPICM	1
Rkt/Msl, antitank	HE	4	WP	4	MLRS-DPICM	1
Rkt/Msl, Position Area	HE	6	WP	6	MLRS-DPICM	1
Rkt/Msl, Unknown	HE	3	WP	3	MLRS-DPICM	1
C3						
CP, Battalion	HE	12			MLRS-DPICM	1
CP, Division	HE	24			MLRS-DPICM	2
CP, Forward	HE	12			MLRS-DPICM	1
CP, Regiment	HE	18			MLRS-DPICM	1
CP, Small	HE	8			MLRS-DPICM	1
CP, Unknown	HE	6			MLRS-DPICM	1
Guidance Equipment	HE	4	WP	4	ATACMS-APAM	1
Navigation Aids	HE	4	WP	4	ATACMS-APAM	1
MANEUVER						
Antitank Gun	HE	4				
APC	HE	2	WP	2		
Armored Veh	HE	2	WP	2		
AA, Mech Troops	HE	6			MLRS-DPICM	1
AA, Troops	HE	6			MLRS-DPICM	1
AA, Troops and Armor	HE	6			MLRS-DPICM	1
AA, Troops and Vehs	WP	6			MLRS-DPICM	1
AA, Unknown	HE	4			MLRS-DPICM	1
Infantry	HE	6				
MG, Hvy (>=50Cal)	HE	8				
MG, Light (<50Cal)	HE	6				
Observation Post	HE	12			MLRS-DPICM	1
Patrol	HE	8				
Recoilless Rifle	HE	4				
Tank, Hvy (>120mm)	WP	4	HE	4	MLRS-SADARM	1
Tank, Med (90-120mm)	WP	4	HE	4	MLRS-SADARM	1
Tank, Light (<90mm)	WP	3	HE	3	MLRS-SADARM	1

Work Party	HE	4				
Weapon, Crewserved	HE	4				
ENGINEER						
Bridge, Foot Pontoon	HE	4			MLRS-DPICM	1

Bridge, Veh Pontoon	HE	4			MLRS-DPICM	1
Bridge, Footbridge Raft	HE	4				
Building, Concrete	HE	8			MLRS-DPICM	1
Building, Masonry	HE	8			MLRS-DPICM	1
Building, Metal	HE	8			MLRS-DPICM	1
Building, Spec Purpose	HE	8			MLRS-DPICM	1
Building, Unknown	HE	4			MLRS-DPICM	1
Building, Wood	HE	4	WP	4	MLRS-DPICM	1
Bunker	HE	12				
Pillbox	HE	12				
RSTA						
Counter-Btry Radar	HE	3	WP	3	ATACMS-APAM	1
Counter-Mortar Radar	HE	3	WP	3	ATACMS-APAM	1
Dir-Finding Radar	HE	3	WP	3	ATACMS-APAM	1
Ground-Surv Radar	HE	3	WP	3	ATACMS-APAM	1
Search Light	HE	6				
Recon Vehicle	HE	6				
REC						
Loudspeaker Equipment	HE	3	WP	3	MLRS-DPICM	1
EW Equip	HE	3	WP	3	ATACMS-APAM	1
NUC/CHEM						
Chem Prod Complex	WP	12			MLRS-DPICM	1
POL						
Petrol Prod Complex	WP	12			MLRS-DPICM	1
AMMO						
Ammunition Dump	HE	6	WP	6	MLRS-DPICM	1
MAINTENANCE						
Supply Dump, Class I	HE	6	WP	6	MLRS-DPICM	1
Supply Dump, Class II	HE	6	WP	6	MLRS-DPICM	1
Supply Dump, Unknown	HE	6	WP	6	MLRS-DPICM	1
LIFT						
Boat	HE	6				
Ferry, Bridge	HE	6			MLRS-DPICM	1
Helicopter, Attack	HE	3	WP	3	ATACMS-APAM	1
Helicopter, Cargo	HE	3	WP	3	ATACMS-APAM	1

Helicopter, Obser	HE	3	WP	3	ATACMS-APAM	1
Veh, Hvy Wheel (>=5T)	HE	3			MLRS-DPICM	1
Veh, Light Wheel (<5T)	HE	3			MLRS-DPICM	1
Veh, Utility	HE	3			MLRS-DPICM	1
Aircraft	HE	3	WP	3	ATACMS-APAM	1
LOC						
Defile	HE	3				
Hill	HE	3				
Landing Strip	HE	3				
Railroad Segment	HE	3				
Road Junction	HE	3				
Road Segment	HE	3				
Terrain Feature	HE	3				
Bridge, Veh Concrete	HE	3			MLRS-DPICM	1
Bridge, Veh Wood	HE	3			MLRS-DPICM	1
Bridge, Veh Steel	HE	3			MLRS-DPICM	1
Bridge, Site	HE	3			MLRS-DPICM	1

MISSION PRIORITIZATION, FIRE MISSION CUTOFF FACTORS AND PRIORITIES OF FIRE.

RANK	**WEIGHT**	**RANK/WEIGHT PARAMETERS**	TARGET AREA OF INTREST (TAI)	**PRIORITY OF FIRE**
3	10	ON-CALL TARGET	TA11MD 1	AS
1	50	TARGET		PER
2	25	PRIORITY OF FIRE		OP
4	15	TAI'S		ORDER
FIRE MISSION CUTOFF FACTORS				
	MAGTF FFCC/DIV FSCC	REGT FSCC	BN FSCC	REGT/BN FDC
MORTARS	99	99	05	NA/NA
ARTILLERY	25	20	20	25/20
NSFS	25	25	25	NA/NA
AVIATION	30	30	30	NA/NA
ROCKET/MISSLE	25	35	35	25/35
AIR	30	30	25	NA/NA

IFSAS SPECIFIC GUIDANCE. IFSAS, though much more limited in its acceptance of guidance, must be made to match as closely as possible to the guidance established in AFATDS. See SOP chap.7 for exact information.

CHAPTER 7

OPERATIONS

1. **GENERAL.** Due to the unique nature of operations with IFSAS and AFATDS in the same unit special procedures must be utilized. These are provided in this chapter.

1. **TARGET MANAGEMENT.** Target file management is accomplished in two operations.

A. **TARGET INDICATORS** are messages that produce directional information. An example of these is the shell report. Target indicators are processed at the artillery target processing center. The setup required to process these is device dependent.

(1)**IFSAS EQUIPPED STATIONS**. All IFSAS stations operate in ATI mode 1. IFSAS equipped stations establish the following message of interest files.

(a) BATTALION FSCC ATI;SHR INCOMING/ALWAYS to REGT FSCC.

(b) REGT FSCC ATI;SHR INCOMING/ALWAYS to DIV FSCC.

(c) ARTY BN FDC ATI;SHR INCOMING/ALWAYS to REGT FDC.

(2) **AFATDS EQUIPPED STATIONS**. The artillery TPC operates with TARGET INDICATOR PROCESSING set to ON. All others allow this processing to default to OFF. Target indicators are routed to the TPC by each AFATDS station. This is accomplished by establishing routing of TARGET INDICATOR type messages using the CONFIGURE RECEIVING SETUP selection of ALERTS & MESSAGES, MESSAGES. All target indicators are routed to the TPC. This requires that the communications planner provide a route to the TPC for each AFATDS station.

B. **ARTILLERY TARGET INTELLIGENCE (ATI)**. ATI messages are processed at each AFATDS station. These may become fire missions if the target is an HPT, a planned target if it passes target selection standards and has a precedence of planned, an inactive target if a non-HPT or a suspect target if it fails TSS. Suspect targets are stored and require confirmation before additional processing is applied. The method of processing is device dependent.

(1) **IFSAS EQUIPPED STATIONS**. IFSAS stations, as discussed above, operate in ATI MODE 1. These stations transmit received ATI target type messages via MOI to allow the message to be processed at an AFATDS station. The following MOI files are created:

(a) BATTALION FSCC ATI;CDR INCOMING/ALWAYS to REGT FSCC
ATI;AZR INCOMING/ALWAYS to REGT FSCC

(b) REGT FSCC ATI;CDR INCOMING/ALWAYS to DIV FSCC
ATI;AZR INCOMING/ALWAYS to DIV FSCC
(c) ARTY BN FDC ATI;CDR INCOMING/ALWAYS to REGT FDC
ATI;AZR INCOMING/ALWAYS to REGT FDC

(2) **AFATDS EQUIPPED STATIONS.**

(a) AFATDS stations operate with SUSPECT TARGET PROCESS set to ON and a degree of overlap established by the commander with the assistance of the G-2/S-2.

(b) ATI messages can only be transmitted from an AFATDS station to an All Source Analysis System (ASAS) equipped agencies. ATI messages must instead be transmitted by entering the target into the ONCALL target list and transmitting the target from this list. ATI messages received from non-AFATDS devices are processed as per the precedence set in the TMM.

NOTE: It is very important at all levels for target processing that the TARGET MANAGEMENT MATRIX and TARGET SELECTION STANDARDS are properly determined and stored. These are critical to the proper determination of target status and the construction of the planned target list (source of many targets for fire planning). Also ensure guidances and unit data are disseminated and updated between AFATDS and IFSAS.

1. FIRE PLANNING. The fire planning sequence is modified as described below.

TABLE 7-1, AFATDS/IFSAS FIRE PLANNING SEQUENCE IN CURRENT

	STATION	ACTION	REMARKS
1	AFATDS FIRE SUPPORT PLANNER	Decision is made to create a fire plan in the current situation.	Targeting begins for the plan by: 1. Adding enemy units to the ONCALL target list. 2. Adding targets to the current ONCALL list from the current PLANNED and INACTIVE target lists.
2	AFATDS FIRE SUPPORT PLANNER. (FSCC)	Creates the fire plan	The fire planner eliminates duplicates from the ONCALL TARGET LIST. The fire plan is created by selecting TARGETS, FIRE PLAN, NEW. The fire plan is named and all desired targets from the ONCALL LIST are added. OK the window. The plan is not computed.
3	AFATDS FIRE SUPPORT PLANNER. (FSCC)	Warns subordinates to prepare to receive target list for the fire plan.	Transmit a FREETEXT message warning of imminent transmission.
4	SUBORDINATE FSCCS	Prepare to receive plan and target list.	IFSAS see 4b.

TABLE 7-1, AFATDS/IFSAS FIRE PLANNING SEQUENCE IN CURRENT			
	STATION	**ACTION**	**REMARKS**
4a	AFATDS SUBORDINATE FSCC	Transmit a FREETEXT message indicating readiness to receive the target list.	
4b	IFSAS SUBORDINATE FSCC	1. Build a MOD FILE for the plan from current. Select FIRE PLANNING, COMD, BUILD MOD FILE. 2. Copy all current AFU data to the plan. Select FIRE UNIT AND AMMO, BUILD. 3. Copy all current SPRT data to the plan. Select SUPPORT, BUILD. 4. Transmit a SYS;PTM to the AFATDS FIRE PLANNER indicating readiness to receive the target list.	
5	AFATDS FSCC FIRE PLANNER	Transmit the fire plan.	1. Click 1 on TARGETS, FIRE PLANS, EDIT. Select the fire plan name and SEND. From the SELECT UNIT window click 1 on each subordinate FSCC unit ID and click 1 on OK to transmit the list. 2. Transmit a FREETEXT message indicating the plan has been transmitted.
6	SUBORDINATE FSCC	Receive the list.	
6a	AFATDS SUBORDINATE FSCC	Click 1 on TARGETS, FIRE PLANS. Select the fire plan name and click 1 on OK.	
6b	IFSAS SUBORDINATE FSCC	Display alert from alert queue: PRINTING OF FPTGT PLAN:@@@@@@ SUPPRESSED. Select MSG to display the associated NNFP;COMD message and select ACTION, ENTER to print the received FPTGT.	
7	SUBORDINATE FSCC	Transmit target nominations as bottom up refinement.	
7a	AFATDS SUBORDINATE FSCC	1. Compare received fire plan targets to those on file and determine any nominations to the list. 2. Build the desired nominations into a plan and transmit the plan to the AFATDS FIRE PLANNER. 3. Transmit a FREETEXT message indicating nominations have been transmitted. 4. Delete the received fire plan.	

TABLE 7-1, AFATDS/IFSAS FIRE PLANNING SEQUENCE IN CURRENT			
	STATION	**ACTION**	**REMARKS**
7b	IFSAS SUBORDINATE FSCC	1 Compare received fire plan targets to those on file and determine any nominations to the list. 2. Add any nominations to the FPLST of the same plan by use of the NNFP;FPTU message. 3. Transmit the **FPLST** to the AFATDS FIRE PLANNER. 4. Transmit a SYS;PTM message indicating nominations have been transmitted. 5. Delete the FPTGT and FPLST for the plan.	
8	AFATDS FSCC FIRE PLANNER	Receive the target nominations and eliminate duplicate targets.	1. Target nominations from IFSAS are received titled with the logical name of the sender. Target nominations received from AFATDS retain the naming convention given at the sender. 2. In addition to receiving plan target lists, the received targets are added automatically to the ONCALL target list on reception. 3. In the ONCALL target list, Click 1 on SORT, and CHECK FOR DUPLICATES. 4. Add the targets not duplicated and desired into the plan. 5. Delete the fire plan nomination lists: click 1 on TARGETS, FIRE PLANS, EDIT. Highlight the fire plan and select delete.
9	AFATDS FSCC FIRE PLANNER	Complete the fire plan and schedule of fires.	1. Select FIRE PLANS, Select the FP name, EDIT, OPTIONS, SCHEDULE, OPTIONS, CALCULATE. 2. Any targets not scheduled by AFATDS can be manually scheduled.
10	AFATDS FSCC FIRE PLANNER	Disseminate the plan.	Select TARGETS and FIRE PLANS, highlight the plan and send to desired units.
10a	To AFATDS and IFSAS equipped fire support assets	Transmit the schedule of fires.	1. Transmit a FREETEXT warning order. 2. Ensure IFSAS units have MOD FILE, AFU and SUPPORT files built. 3. Click 1 on TARGETS, SCHEDULE OF FIRES. Select the schedule of fire name and SEND.

TABLE 7-1, AFATDS/IFSAS FIRE PLANNING SEQUENCE IN CURRENT			
	STATION	**ACTION**	**REMARKS**
10b	To non-digital fire support assets.		1. Click 1 on TARGETS, SCHEDULE OF FIRES. Select the fire plan name and PRINT.(Note: Printing from this window will not show the Fire Units) 2. The printed schedule is sent by voice comm or courier to non-digital units.
11	FIRE SUPPORT ASSETS	Receive the schedule of fires.	
11a	AFATDS EQUIPPED FIRE SUPPORT ASSETS	1. Click 1 on TARGETS , SCHEDULE OF FIRES. Select the plan name and review. The SCHEDULE OF FIRES is then transmitted to each subordinate as per step 10a. 2. At the last AFATDS the schedule is transmitted to the BCS or FDS. Click 1 on TARGETS, FIRE PLANS, Select Fire Plan, EDIT, EXECUTE, Select OK. Then select TARGETS, SOF, Select the SOF Name, EDIT, Select the unit's line you are sending, Select OPTIONS, SEND TO SELECTED, Select the BCS, and OK. All data for that firing unit is transmitted. **DENY ALL MISSIONS IN THE IP WINDOW GENERATED BY EXECUTING THE SOF.**	
11b	IFSAS EQUIPPED FIRE SUPPORT ASSETS	1. Display alert from alert queue: PRINTING OF FPLST/TISF PLAN:@@@@@@ SUPPRESSED. Select MSG to display the associated NNFP;COMD message and select ACTION, ENTER to print the received TISF. The number of rounds required is correct. The number of actual rounds assigned to each target erroneously displays 0 and fuzes display default values for the shells. 2. Using the NNFP;COMD message, delete the TISF and ONCALL target list for the plan. 3. Re-instruct the fire plan based on the TISF fire units and shells and the number of volleys indicated in the REQ VOL field for each target. 4. Compute the fire plan based on the guidance on the printed TISF. 5. Transmit the TISF to all subordinate IFSAS FDCs. 5. At the last IFSAS FDC the schedule is transmitted to the BCS or FDS using the NNFP;EXECFP message. This transmits the plan as a series of NNFP;CFFs to BCS and NNFP;TARGET messages to FDS.	
12	AFATDS FSCC FIRE PLANNER	Achieve coordination.	
12a	TO AFATDS EQUIPPED FSCC	1. Display the ONCALL TARGET LIST. 2. Select SORT, CHECK FOR COORDINATION. 3. For those targets of the fire plan that require coordination with AFATDS equipped stations, transmit the coordination request.	

TABLE 7-1, AFATDS/IFSAS FIRE PLANNING SEQUENCE IN CURRENT			
	STATION	**ACTION**	**REMARKS**
12b	TO IFSAS EQUIPPED FSCC	Instruct the IFSAS FSCC to: 1. Build a MOD FILE for the plan from current. Select FIRE PLANNING, COMD, BUILD MOD FILE. 2. Copy all current AFU data to the plan. Select FIRE UNIT AND AMMO, BUILD. 3. Copy all current SPRT data to the plan. Select SUPPORT, BUILD. 4. Transmit a SYS;PTM to the AFATDS FIRE PLANNER indicating readiness to receive the target list. 5. Once received, display alert from alert queue: PRINTING OF FPTGT PLAN:@@@@@@ SUPPRESSED. Select MSG to display the associated NNFP;COMD message and select ACTION, ENTER to print the received FPTGT/TISF. 6. **Manually** compare the target to FSCMs and unit location. 7. Transmit a SYS;PTM indicating all approved and denied targets.	
13	AFATDS FSCC FIRE PLANNER	Adjust the fire plan for coordination results.	1. Determine those targets that must be deleted or changed. Transmit these changes as FREETEXT messages addressed to all fire support assets. 2. Contact non-digital units using voice communications to relay the changes to the fire plan.
14	FIRE SUPPORT ASSETS	Relay the FREETEXT message to the FDS/BCS stations.	
15	BCS/FDS ASSETS	Alter the fire plan.	These assets change the fire plan based on the SYS;PTM received. These alterations are made to the fire plan file targets.
16	FIRE THE FIRE PLAN	The fire plan is executed automatically at the BCS and FDS equipped stations based on the H-HOUR time. H-hour must be established prior to firing the plan and transmitted to subordinates from the fire planner FSCC. ONCALL fire plans are executed by setting H-HOUR at the BCS or FDS for the time of activation.	
17	FIRE SUPPORT ASSETS	All fire support assets transmit updated ammunition inventories and a list of any targets not fired including those attacked with less than the required quantity of ammunition.	

1. FIRE MISSION PROCEDURES

A. **Fire requests from outside an organization**. AFATDS stores the

observer number of a radar, spotter or observer in the EDITS ROUTES window of the communications configuration. Because of this factor, AFATDS transmits observer number 00 (OB:00) in observer location messages (FM;OBCOs) to a TACFIRE device **unless** a communications route exists for the FO at the AFATDS computer. (AFATDS is not limited by this since the unit data transmitted between AFATDS devices is identified by the master unit list number and not FO number.)

(1) **Receiving a Fire Request.** The lowest level AFATDS that receives a fire request from a non-AFATDS device must have a route built to the observer that originated the mission (This route can be a non usable route). If no route exists when a fire request is received by AFATDS, the alert "TF RANGE ERROR" is produced and the fire request cannot be processed.

(2) **Fire Request Processing**. In addition, when a fire request, received from an intermediate AFATDS, is processed at an AFATDS computer and the data base does not contain a route for the originating observer, AFATDS has no way of knowing what observer number to assign to the mission and again uses 00 when transmitting the message to a TACFIRE device. This causes an additional problem when the fire request is sent to an IFSAS device. The FM;CFF is received in the alert queue as missing observer number and should be edited, inputting the observer number and action entering the message causes the fire request to be put into the input queue. BCS at the artillery battery FDC requires the observer number for complete processing. This poses no problems for the artillery battalion as long as routes are provided in the communications architecture of all supported FOs. However, potentially catastrophic message transmission problems can occur when fire missions are received from outside the unit from observers for which no route is available. This instance could occur when a mission is processed from the regimental FDC. The procedure in table 7-2 compensates for this without the need to maintain comm routes to every spotter and FO in the force.

	Table 7-2, FIRE REQUEST FROM NON-ORGANIC OBSERVER		
STEP	**OPFAC**	**ACTION**	**REMARKS**
1	Observer	Transmit digital fire request to supported FSCC.	
2	Supported FSCC	Transmits FSE FR to an intermediate OPFAC.	The supported FSCC performs this step when it possesses insufficient assets to effectively engage the target.
3	Intermediate OPFAC	Processes fire request.	Processing results in the assignment of the mission to a fire unit that does not possess a route to the observer.
4	Fire unit AFATDS	Process the fire request. If an artillery unit, transmit the fire order to the BCS. The message to observer fails.	The medium level alert "TRANSMISSION OF (tgt number) MTO TO (observer unit ID) FAILED.

	Table 7-2, FIRE REQUEST FROM NON-ORGANIC OBSERVER		
STEP	**OPFAC**	**ACTION**	**REMARKS**
5	Fire unit BCS	Receive FM;CFF:O.	Change the observer number from 00 to a number not currently assigned to any stored observer then process the message. This will prevent the BCS from rejecting the next OB:00 MSN:1 FM;CCF:O.
6	Fire unit AFATDS	Transmit the MTO.	On the medium level alert warning that the MTO failed, click 1 on SEND TO ORIGINATOR. MTO is transmitted to each OPFAC that processed the mission thus routing to the observer.
7	Fire unit AFATDS	Transmit SHOT report.	When BCS attempts to transmit SHOT to the FO the message fails at the fire unit AFATDS because no correlation between the observer number in the TACFIRE message and the mission exists at the AFATDS. The fire unit AFATDS operator must: 1. Click 1 on TARGETS, TARGET LIST, and ACTIVE to display the target list window. 2. Click 1 on the target number of the fire mission to highlight and select. 3. Click 1 on TARGET on the menu bar and COMMANDS on the pull down menu. 4. On the COMMANDS window, change FIRE STATUS to SHOT. Click 1 on SEND and transmit the message to the OPFAC from which the fire mission was received.
8	All OPFACs	Process the remainder of the mission.	

EXAMPLE 7-2: In the figure above the recon teams transmit a fire request to the division FSCC (dashed line A). This is processed and assigned to the artillery regiment (dashed line B) and in turn transmitted to an artillery battalion (Dashed line C), and finally to a fire unit AFATDS (dashed line D). No route exists at the fire unit for the FO. The AFATDS operator transmits the fire order to the BCS (dashed line E). At the same time an alert indicates that the MTO has failed. The AFATDS operator selects SEND TO ORIGINATOR. This causes the MTO to trace the route established by the processing of the fire request (solid lines). The BCS, located with the AFATDS computer controls the battery but all commands (SHOT, SPLASH, ROUNDS COMPLETE, ETC.) are passed from the battery AFATDS.

B. **MASS FIRE MISSIONS.** Despite the guidance entered there may be times that the commander directs that fire missions received are massed upon. The following procedure allows a mission to be massed upon. It should be noted that this procedure overrides commander's guidance.

	Table 7-3, MASSING FIRES AT AN ARTILLERY FDC.		
STEP	**OPFAC**	**ACTION**	**REMARKS**
1	Observer	Transmit digital fire request to supported FSCC.	
2	Supported FSCC	Transmits FSE FR to an intermediate OPFAC.	The supported FSCC performs this step when it possesses insufficient assets to effectively engage the target.
3	Intermediate OPFAC	Processes fire request.	Processing results in the fire request being routed through any other FSE/FSCC OPFACS and finally to an artillery CP.
4	Artillery CP	Process the fire request.	The decision is made to override the solution determined and mass fires.
5	Artillery CP	Transmit a FREETEXT message to the observer.	Inform the observer that the mission will be ended and re-processed. He will receive a denied MTO that is to be disregarded.
6	Artillery CP	Deny the fire mission.	Display the intervention window for the fire mission. Click 1 on DENY. The mission is placed in the ACTIVE MISSION MONITOR. OK the MISSION DENIED window.
7	Artillery CP	Reprocess the mission.	Click 1 on TARGET, TARGET LISTS, INACTIVE.
			a. Click 1 on the target number of the mission to select that target.
			b. Click 1 on OPTIONS, INITIATE FIRE MISSION.
			c. Click 1 on SYSTEM and select FA. Click 1 on UNIT SIZE and select the size unit to mass, or select all available.
			d. Click 1 on OK to process the mass fire mission.

E. **PROCESSING UNSUPPORTABLE MISSIONS AT IFSAS.** When Bn FSCC IFSAS processes a fire mission one of three possible solutions is determined.

(1) **FM;CFF**. The fire request is processed to determine an acceptable solution using organic or supporting assets. IFSAS generates the appropriate messages to direct processing at subordinate units. For example, an FO transmits a fire request to his supported battalion FSCC. The battalion's mortar platoon can achieve the desired effects specified in the mod file. The mission is processed as an FM;CFF to the mortar platoon. If the mortar platoon has an MBC the mission is received as an FR;GRID and a FREETEXT msg. with target number and number of volleys.

(2) **FM;CFF:X With Partial Solution.** The fire request is processed to determine a solution using supporting or organic assets but the assets are inadequate to achieve the desired effects specified in the commander's attack methods. In this case an FM;CFF:X is

generated to request reinforcing fires from the unit entered in the communications subscriber screen DEFAULT DESTINATION field. For example, a fire request is received at a battalion FSCC and processed to cause the battalion mortar platoon to be assigned to engage the target. However, the mortar platoon cannot fire the required number of volleys to defeat the target. An FM;CFF:X is generated to request additional fires to augment those of the mortars.

(3) **FM;CFF:X With no Solution.** The fire request is processed to determine no solution from organic or supporting assets. An FM;CFF:X is generated to request reinforcing fires from the unit entered in the communications subscriber screen DEFAULT DESTINATION field. For example, a fire request is received at a battalion FSCC. The battalion mortar platoon cannot fire on the target because the first volley does not achieve ECOF. An FM;CFF:X is generated to request additional fires.

(4) In cases (2) and (3) an FM;CFF:X is generated. When this message
is received at AFATDS it is judged as a denial of the mission instead of a request for reinforcing fires.

(5) **Procedures**.

(a) IFSAS computers transmit an FM;CFF:X to an AFATDS only when the fire request has been received from the AFATDS and the IFSAS station cannot process the mission. For example, an FM;CFF:R is received at the IFSAS battalion FDC from the AFATDS regimental FDC. The battalion FDC IFSAS computer determines no solution using organic assets due to a sudden change in fire unit status that had not been relayed to the AFATDS computer when it selected the battalion to fire. The battalion FDC determines an FM;CFF:X message and transmits this to the AFATDS. At AFATDS the FM;CFF:X is received as a denial allowing the mission to be processed again but not allowing the original battalion to be selected again unless the operator overrides the solution.

(b) IFSAS computers do not transmit FM;CFF:X messages for fire requests from subordinates that result in no solution. This is accomplished by performing the following guidance and processing entries at the IFSAS.

1) All fire support assets available to the next higher
echelon are stored at the IFSAS computer. These assets are ordered under the next higher echelon's logical name using the FM;FUSEL message. This directs the IFSAS computer to examine the fire units as potential shooters but to direct requests to use these assets to the next higher echelon.

2) When a fire mission is processed and still results in
an FM;CFF:X, the IFSAS station recalculates the mission to achieve an FM;CFF addressed to the next higher echelon. This message provides the means for transmitting the mission to an organization with greater fire support assets. The FM;CFF is transmitted as a request for fire on an unsupportable target and any additional FM;CFF:X is discarded.

F. **CONTINUITY OF OPERATIONS.** ***SEE CHAPTER 4 FOR CONOPS PROCEDURES AND SOP CHAPTER 4 FOR IFSAS PROCEDURES.***

APPENDIX D
COMMUNICATIONS REFERENCE

The following tables provide specific protocol and device settings useful to the planner in identifying unique needs of each station when constructing or editing data communications net architecture.

TABLE E-1 PROTOCOLS SUPPORTED BY TACTICAL COMPUTERS

DEVICE	PROTOCOLS	ENCODING	DATA RATES	REMARKS
AFATDS	VMF	FSK 1200/2400 1300/1700 1300/2100 1575/2425	600, 1200	Used for transmission on non-digital analog radios. FSK 1300/1700 uses data rate 600 bps only.
		NRZ	600, 1200, 2.4K, 4.8K, 16K	Used with SINCGARS-ICOM
		CDP	600, 1200	Used in wire media nets.
	TACFIRE	FSK 1200/2400 1300/2100	600, 1200	
BCS	TACFIRE	FSK 1200/2400 1300/2100	600, 1200	
DMS	TACFIRE, fixed format only	FSK 1200/2400 1300/2100	600, 1200	
		NRZ	8000*, 16K	*Compatible with DMS only, 8000 bps not usable due radio and device limitations
FIREFINDER AN/TPQ-36 and 37	TACFIRE, fixed format only	FSK, 1200/2400	600, 1200	
FDS	TACFIRE	FSK	600, 1200	
FOFAC	TACFIRE, fixed format	FSK 1200/2400	600, 1200	
	MTS			
IAS	OTH GOLD LAN using USMTF			Compatible with JEMCIS and TCO only.
IFSAS	TACFIRE	FSK	600, 1200	
		NRZ	600, 1200, 2.4K, 4.8K, 16K	Compatible with other IFSAS and DMS (16K only)
MDS	TACFIRE, variable format only	FSK 1200/2400	600, 1200	
MMS	TACFIRE			
RDDL	TACFIRE fixed format only	FSK 1200/2400	1200	Parses fixed format TACFIRE FR GRID and SUS ADJ messages into NTDS protocol for the MK34 gunfire computer.

TCO	OTH GOLD			Compatible with JEMCIS and TCO only.

TABLE E-2. RADIO Compatibility with Tactical Computer Protocals			
RADIO	PROTOCOL	DATA RATES	ENCODING
SINCGARS-ICOM	TACFIRE	600 and 1200 bps with radio data rate set to AD1 or TF.	FSK 1200/2400 1300/2100
	VMF	600, 1200, 2400, 4800 and 16000 bps with radio data rate set to matching rate.	NRZ
VRC-12 series	TACFIRE	600 and 1200.	FSK
VRC-12 series with VINSON	TACFIRE	600, 1200 600, 1200, 2400, 4800, 16000	FSK NRZ
ULCS	VMF	16000, 32000	CDP
2-WIRE	TACFIRE	600 and 1200	FSK
	VMF	600 and 1200	CDP

TABLE E-3 PREFERRED PROTOCOLS			
DEVICE	COMM MEDIUM	SHARES NET WITH	PROTOCOL
AFATDS	SINCGARS-ICOM	AFATDS	VMF-NRZ
	VRC-12 radios	AFATDS	VMF-FSK 1200/2400htz
	WIRE	AFATDS	VMF-CDP
	ULCS	AFATDS	ULS-CDP
AFATDS	SINCGARS-ICOM, VRC-12 or wire	IFSAS, BCS, FDS, DMS, FIREFINDER, and/or MMS/MDS	TACFIRE-FSK 1200/2400htz
IFSAS	SINCGARS-ICOM or VRC-12 with KY-57	IFSAS and/or DMS	DIGITAL –16000bps

TABLE E-4 VMF PROTOCOL RULES			
NET SETTING	RULES		
ADDRESSES	Supports the use of addresses 02 through 99 on each net.		
DATA RATES	Dependent upon communications medium and data encoding method:		
	MEDIA	DATA ENCODING	DATA RATES in bps
	SINCGARS-ICOM	NRZ	600,1200,2400,4800 and 16000
	NON-SINCGARS w/o encryption	FSK 1200/2400	600 and 1200
		FSK 1300/2100	600 and 1200
		FSK 1300/1700	600 only
		FSK 1575/2425	600 and 1200
	KY-57	NRZ	16000
CARRIER DROP OUT TIME	All settings must be the same at all AFATDS in the net. Recommend using the default values of PT and CT, single channel 0.2, PT and CT frequency hopping and master station, 0.3, TIME DELAY, all modes 0.5.		
ERROR CONTROL	Always use FEC_TDC.		

TABLE E-4 VMF PROTOCOL RULES	
NET SETTING	RULES
KEY TIME	Required for all media except SINCGARS-ICOM and KY-57. Must be the same at all stations. Recommend not lower than 0.7 for SINCGARS, 1.4 for all other radios and use of 0.2 for wire.
NET ACCESS	Always use ADAPTIVE and ensure each station possess a unique rank (1-24) and total number of stations on the net is provided to each user.

TABLE E-5 TACFIRE PROTOCOL RULES		
NET SETTING	RULES	
ADDRESSES	**PHYSICAL ADDRESS:** Fixed format device (DMS, FOFAC, FIREFINDER) support 0 through 9 and A through Z. Variable format devices support same as fixed and symbols # & + - . ? and *. **RELAY ADDRESS:** Letters Q through Z should be reserved for NCS use as fixed format relay addresses. **MOI ADDRESS:** IFSAS allows the use of a message of interest address. These should be the same as a station's physical address.	
DATA RATES	Only 600 and 1200 bps and data encoding 1200/2400 htz or 1300/2100 FSK are supported by all devices. The following exceptions apply:	
	MMS, MDS and FIREFINDER	Support only 1200/2400 htz FSK
	AFATDS	using wire media supports and CDP encoding supports 8000, 16000 and 32000 bps.
		using SINCGARS-ICOM or KY-57 and NRZ encoding supports 600, 1200, 2400, 4800 and 16000 bps.
NOTE: IFSAS and DMS support DIGITAL data rates of 600, 1200, 2400, 4800 and 16000 at IFSAS and 8000 and 16000 at DMS. These cannot be used to net to an AFATDS computer and DMS 8000 can only be used with KY-57 since SINCGARS does not support this data rate.		
HOLD TIME	Cannot be set by the operator. This is computed automatically at all devices and displayed only at AFATDS. This value is based on the keytime set.	
ERROR CONTROL	Always use EDC/TDC.	
KEY TIME	Must be the same at all stations. Recommend not lower than 0.7 for SINCGARS, 1.4 for all other radios and use of 0.2 for wire.	
NET ACCESS	Time increment in half second that delays transmission to allow higher priority station to access the network. Unique value for must be assigned for each station. NCS should have value of 0.5 and all remaining stations are given a longer value working from top of command echelons to the bottom. IFSAS and AFATDS are that only devices that allow more than 1 access value. These devices allow 4 values for priroitized categories of TACFIRE message and their re-trnamit attempts. Recommend assigning a unique value for the first number, increment this be 1.0 seconds for the second, use the same value for the third and increment again by 1.0 seconds for the fourth number. This opens network to other stations during periods of re-transmit.	

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