

ARMY, MARINE CORPS, NAVY, AIR FORCE



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UHF TACSAT /DAMA

***MULTI-SERVICE TACTICS,
TECHNIQUES, AND
PROCEDURES FOR ULTRA
HIGH FREQUENCY
TACTICAL SATELLITE AND
DEMAND ASSIGNED
MULTIPLE ACCESS
OPERATIONS***

***FM 6-02.90
MCRP 3-40.3G
NTTP 6-02.9
AFTTP(I) 3-2.53***


AUGUST 2004

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MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES

FOREWORD

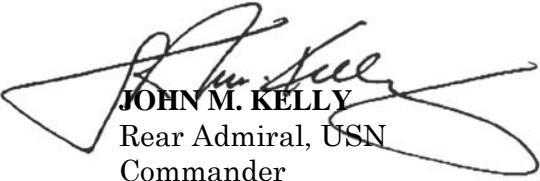
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PREFACE

1. Scope

The intent of this publication is to assist planners and users at the joint task force, Service component, and other functional components by providing an improved and unified process for planning, managing, and using ultra high frequency (UHF) tactical satellite (TACSAT) frequencies with special emphasis on maximizing the use of this limited resource.

2. Purpose

Lessons learned and collected by Joint Staff J-6 from numerous joint operations identified significant problems with planning and utilizing the limited number of UHF TACSAT frequencies. Current methods and procedures based on use, geography, channel size, demand access, and time have proved difficult to integrate and require extensive manual tracking and manipulation. These inefficiencies contribute to the shortage of this critical command and control resource. This multi-Service tactics, techniques, and procedures (MTTP) publication consolidates and standardizes Service tactics, techniques, and procedures (TTP) for planning and executing UHF TACSAT frequency management operations. It serves as a planning and execution guide and a framework for coordination and synchronization consistent with current Joint doctrine.

3. Application

- a. This publication is applicable to unit level UHF TACSAT planners and users throughout the joint force.
- b. The United States (U.S.) Army, Marine Corps, Navy, and Air Force approved this multi-Service publication.

4. Implementation Plan

Participating Service command offices of primary responsibility review this publication, validate the information, and reference and incorporate it into Service manuals, regulations, and curricula as follows:

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5. User Information

a. TRADOC, MCCDC, NWDC, Headquarters Air Force Doctrine Center (AFDC), and the Air Land Sea Application (ALSA) Center developed this publication with the joint participation of the approving Service commands. ALSA reviews and updates this publication as necessary.

b. This publication reflects current joint and Service doctrine, command and control organizations, facilities, personnel, responsibilities, and procedures. Changes in Service protocol, appropriately reflected in joint and Service publications, will be incorporated in revisions to this document.

c. We encourage recommended changes for improving this publication. For each recommendation, include the specific page and paragraph and provide a rationale. Send comments and recommendations directly to—

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FM 6-02.90
MCRP 3-40.3G
NTTP 6-02.9
AFTTP(I) 3-2.53

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31 August 2004

(UHF TACSAT/DAMA)
MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES
FOR ULTRA HIGH FREQUENCY TACTICAL SATELLITE AND
DEMAND ASSIGNED MULTIPLE ACCESS OPERATIONS

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EXECUTIVE SUMMARY

UHF TACSAT/DAMA

Multi-Service Tactics, Techniques, and Procedures for UHF TACSAT and DAMA Operations

Chapter I identifies key players in the management of tactical satellite (TACSAT) resources and offers critical guidance for the user to optimize this scarce resource. The usage guidance centers on the need to consider other communications capabilities before requesting access to TACSAT resources. The chapter concludes with sections on TACSAT capabilities, military standards, waveforms, and slave channels. These sections include discussions of narrowband and wideband channels, the utilization of dedicated and demand assigned multiple access (DAMA) services, and descriptions of 5-kHz and 25-kHz waveforms.

Chapter II provides a detailed look at the communications planning cycle of assessing force structure, acquiring resources, managing resources, and issuing resources to users. It discusses DAMA emission control, terminal base address (TBA) management and precedence, common, and private networks, and disadvantaged users.

Chapter III provides techniques and procedures for UHF TACSAT equipment and operations, TBA management, orderwire (OW) key management, and communications security equipment. It also provides samples of 5- and 25-kHz DAMA checklists, accessing dedicated and DAMA channels. The equipment list provides the planner with the capability to assess communications interoperability of various elements in a Joint Task Force (JTF). The point of contact list provides TACSAT users a means of troubleshooting a variety of common problems with UHF TACSAT operations.

The appendices provide samples of checklists, troubleshooting guides, and other planning resources.

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Chapter I

Overview/Terminology

1. Introduction

This multi-Service tactics, techniques, and procedures (MTTP) publication serves as a preparation and execution guide for the communications planner and the terminal operators. It explores solutions to the following problems:

- a. Proper preparation and utilization for the limited number of ultra high frequency (UHF) tactical satellite (TACSAT) resources.
- b. Greater efficiency in the utilization of this critical command and control resource.
- c. Proper consolidation and standardization of Service tactics, techniques, and procedures for planning an execution of UHF TACSAT management.

2. Definition of Key Terms

a. Communications planner. For purposes of this publication, the term “communications planner” refers to individuals responsible for developing UHF satellite communications (SATCOM) requirements in support of the unified combatant commander operations plan (OPLAN), exercise plan (EXPLAN), or emerging operations (EMOP), including unit through component level. Communications planners may be referred to in varying Service elements as frequency managers, signal noncommissioned officer, signal officer, S6, J-6, spectrum manager, communication chief, or other similar term.

b. Terminal operator. For purposes of this publication, the term “terminal operator” refers to any individual who interacts (directly or indirectly) with a UHF TACSAT terminal.

c. Frequency management. The term “frequency management” refers to the process of requesting, issuing, and managing frequency resources in accordance with joint policy, United States (US) and international law, and Service procedures. A SATCOM channel consists of two frequencies managed as individual frequencies.

d. Demand assigned multiple access (DAMA). DAMA is a technique used to increase the number of users a limited “pool” of satellite transponder space can support. The ability to share bandwidth is based on the assumption that not all users require simultaneous access to communication channels. DAMA systems, quickly and transparently, assign communication links or circuits to a network control system based on requests received from user terminals. Once a circuit is not in use, the channels are immediately returned to the central pool for reuse. Using DAMA allows many subscribers to be served using a fraction of the satellite resources required by dedicated, point-to-point signal-channel-carrier networks, thus reducing the costs of satellite networking.

e. Naval Computer and Telecommunications Area Master Station (NCTAMS)/Satellite Management Center (SMC). The NCTAMS is a station tasked to install, operate, man, and maintain satellite ground stations. The SMC is the DAMA controller office responsible for configuring, monitoring, and troubleshooting DAMA network assignments.

f. Joint UHF Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) controller. The JMINI is the hardware and software suite used by the NCTAMS-SMC to manage 5-kilohertz (kHz) and 25-kHz DAMA networks. It is a multiplexer controlling the technical configuration of the DAMA satellite channels to provide functionality of the system.

g. Satellite access request (SAR). The SAR is a formal request, submitted in preformatted message form, to the UCC communications planning office by a using unit through the chain of command. The SAR requests satellite resources to support valid mission requirements.

h. Satellite access assignment (SAA). The formal SAA assignment message assigning specific resources to a unit for a specific period of time. The SAA is issued by the regional SATCOM support center (RSSC). It is sent to the requesting unit and the NCTAMS for controller configuring and system monitoring .

i. Net control station (NCS). The NCS is an individual, office, communications control center, or command responsible for facilitating shared access between terminal operators for a particular UHF SATCOM network.

j. Satellite database (SDB). The SDB is the base document listing validated requirements as a result of UCC mission analysis. The document is reviewed annually to ensure current resource requirements are included.

3. Organizations and Functions

The Joint Chiefs of Staff (JCS), United States Strategic Command (USSTRATCOM), UCC, joint frequency management office (JFMO), global SATCOM support center (GSSC)/RSSC, joint task force (JTF), NCTAMS, combatant commands (COCOM), communications planners, and terminal operators play key roles in planning and managing UHF SATCOM requirements and resources. The responsibilities of each organization are summarized below. The functional relationships between these organizations are depicted in Figure I-1.