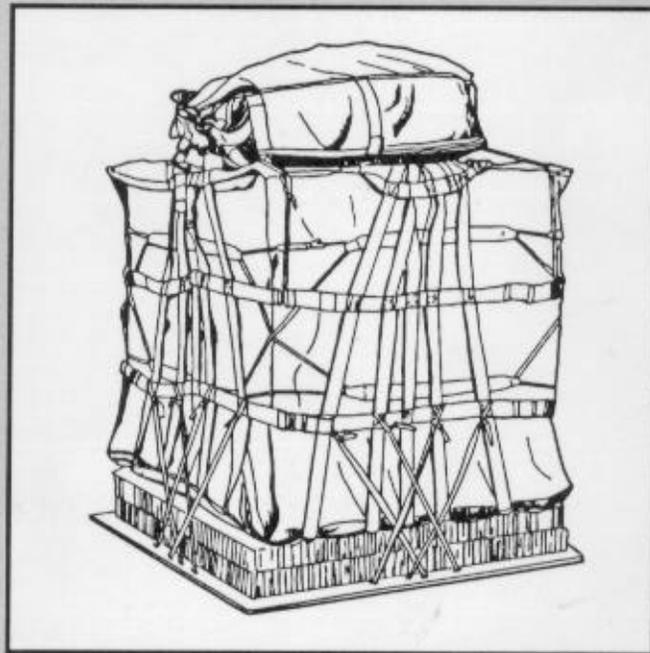


21  
10-1

**ARMY FM 10-500-3  
AIR FORCE TO 13C7-1-11  
MARINE CORPS FMFM 7-47**



# **AIRDROP OF SUPPLIES AND EQUIPMENT RIGGING CONTAINERS**



**DISTRIBUTION RESTRICTION:** Distribution authorized to US government agencies only to protect technical or operational information from automatic dissemination under the International Exchange Program or by other means. This determination was made on 30 April 1992. Other requests for this document will be referred to Commander, US Army Quartermaster Center and School, ATTN: ATSM-DTL, Fort Lee, VA 23801-5036.

**DESTRUCTION NOTICE:** Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

**HEADQUARTERS  
DEPARTMENTS OF THE ARMY AND THE AIR FORCE  
THE US MARINE CORPS**

CHANGE  
No. 1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
UNITED STATES MARINE CORPS  
DEPARTMENT OF THE AIR FORCE  
Washington, DC, 26 September 1996

**AIRDROP OF SUPPLIES AND EQUIPMENT:  
RIGGING CONTAINERS**

This change updates various technical information concerning the rigging of airdrop containers and provides specific information on rigging of loads for C-17 aircraft. Also with this change, there are procedures for rigging the stretch A-22 cargo bag and for modifying the T-10 parachute for cargo airdrop.

FM 10-500-3, 8 December 1992, is changed as follows:

1. New or changed material is identified by a vertical bar in the margin opposite the changed material.
2. File this transmittal sheet in front of publication for reference purposes.
3. Remove old pages and insert new pages as indicated below:

**Remove old pages**

**Insert new pages**

i through ix.....	i through ix
1-1 through 1-6.....	1-1 through 1-6
2-1 through 2-3.....	2-1 through 2-5
3-1 and 3-2.....	3-1 and 3-2
3-9 and 3-10.....	3-9 and 3-10
	3-19 through 3-25
4-5 through 4-8.....	4-5 through 4-8
4-13 and 4-14.....	4-13 and 4-14
4-17 and 4-18.....	4-17 and 4-18
4-25 and 4-26.....	4-25 and 4-26
5-1 and 5-2.....	5-1 and 5-2
6-5 and 6-6.....	6-5 and 6-6
6-9 and 6-10.....	6-9 and 6-10
6-13 and 6-14.....	6-13 and 6-14
6-17 and 6-18.....	6-17 and 6-18
7-1 and 7-2.....	7-1 and 7-2
7-9 and 7-10.....	7-9 and 7-10
7-21 and 7-22.....	7-21 and 7-22
8-1 through 8-4.....	8-1 through 8-4
8-7 and 8-8.....	8-7 and 8-8

**DISTRIBUTION RESTRICTION:** Distribution authorized to US Government agencies only to protect technical or operational information from automatic dissemination under the International Exchange Program or by other means. This determination was made on 30 April 1993. Other requests for this document will be referred to Airborne and Field Services Department, USA Quartermaster Center and School, 1010 Shop Road, Fort Lee, VA 23801-1502.

**DESTRUCTION NOTICE:** Destroy by any method that will prevent disclosure of contents or reconstruction of the document..

**Remove old pages**

**Insert new pages**

8-11 and 8-12.....	8-11 and 8-12
8-15 and 8-16	
9-1 through 9-16.....	9-1 through 9-16
9-27 and 9-28.....	9-27 and 9-28
	9-29 through 9-41
10-1 through 10-6.....	10-1 and 10-6
10-17 through 10-20.....	10-17 through 10-20
10-25 and 10-26.....	10-25 and 10-26
11-9 and 11-10.....	11-9 and 11-10
11-13 and 11-14.....	11-13 and 11-14
12-7 through 12-9.....	12-7 through 12-9
Glossary-1	Glossary-1
References-1 and References-2	References-1 and References-2

By Order of the Secretaries of the Army and the Air Force:

Official:



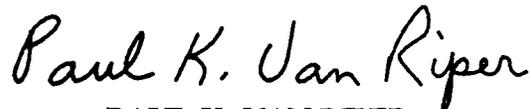
JOEL B. HUDSON

Administrative Assistant to the  
Secretary of the Army

02384

DENNIS J. REIMER  
General, United States Army  
Chief of Staff

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS



PAUL K. VAN RIPER

Lieutenant General, U.S. Marine Corps  
Commanding General

Marine Corps Combat Development Command  
Quantico, Virginia

DISTRIBUTION:

Active Army, Army National Guard, and U.S. Army Reserve: To be distributed in accordance with the initial distribution number 110895, requirements for FM 10-500-3.

FIELD MANUAL  
No. 10-500-3  
FLEET MARINE FORCE MANUAL  
No. 7-47  
TECHNICAL ORDER  
No. 13C7-1-11

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
UNITED STATES MARINE CORPS  
DEPARTMENT OF THE AIR FORCE  
Washington, DC, 8 December 1992

## AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING CONTAINERS

### TABLE OF CONTENTS

	Paragraph	Page
PREFACE		viii
<b>PART ONE</b>	<b>GENERAL INFORMATION</b>	
<b>CHAPTER 1</b>	<b>GENERAL RIGGING INFORMATION FOR CONTAINER LOADS</b>	
Section I	<b>RIGGING INFORMATION</b>	
	Description of Container Loads	1-1 1-1
	Types of Airdrop	1-2 1-2
	Commonly Used Items	1-3 1-2
	Parachute Requirements	1-4 1-3
	Data Tag for Rigged Loads	1-5 1-3
	Computation of Minimum Weight for Container Loads	1-6 1-4
	Special Considerations	1-7 1-4
	Safety Precautions	1-8 1-4
	Rigging Precautions	1-9 1-4
	Loads Dropped in Frigid Climates	1-10 1-5
	Final Inspection	1-11 1-5
	Release Gate	1-12 1-5
	Knots Used	1-13 1-6
	Securing of Straps and Webbing	1-14 1-7
Section II	<b>HIGH-ALTITUDE AIRDROP RESUPPLY SYSTEM</b>	
	Description of HAARS	1-15 1-9
	Altitude Sensor Parachute Staging Unit	1-16 1-9

**DISTRIBUTION RESTRICTION:** Distribution authorized to US government agencies only to protect technical or operational information from automatic dissemination under the International Exchange Program or by other means. This determination was made on 30 April 1993. Other requests for this document will be referred to Airborne and Field Services Department, USA Quartermaster Center and School, 1010 Shop Road, Fort Lee, VA 23801-1502.

**DESTRUCTION NOTICE:** Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

\*This publication supersedes FM 10-501, 23 May 1989.  
MARINE CORPS PCN: 13900073401

	Paragraph	Page
<b>CHAPTER 2</b>	<b>AIRCRAFT INFORMATION</b>	
	Army Aircraft	2-1 2-1
	Air Force Aircraft	2-2 2-2
	CVRS	2-3 2-2
	Inboard Logistics Rail	2-4 2-3
	Release Gate Load Spreader	2-5 2-4
	Capabilities of Non-CVRS Loads	2-6 2-5
<b>PART TWO</b>	<b>RIGGING A-7A CONTAINER LOADS</b>	
<b>CHAPTER 3</b>	<b>GENERAL INFORMATION AND PROCEDURES</b>	
	A-7A Airdrop Cargo Sling Assembly	3-1 3-1
	Weight Limits	3-2 3-2
	A-7A Container Loads	3-3 3-2
	Parachutes for A-7A Loads	3-4 3-2
	Modifying the T-10 Parachute	3-5 3-19
<b>CHAPTER 4</b>	<b>RIGGING TYPICAL A-7A CONTAINERS</b>	
Section I	<b>LOW-VELOCITY AIRDROP FROM PARATROOP DOOR</b>	
	Description of Load	4-1 4-1
	Positioning Straps	4-2 4-1
	Positioning Load and Securing Straps	4-3 4-2
	Installing Parachute	4-4 4-5
	Marking Rigged Load	4-5 4-5
	Equipment Required	4-6 4-5
Section II	<b>LOW-VELOCITY AIRDROP FROM RAMP</b>	
	Description of Load	4-7 4-8
	Preparing Skid Board	4-8 4-8
	Placing Honeycomb and Positioning Straps	4-9 4-8
	Positioning Load and Securing Straps	4-10 4-8
	Securing Skid Board	4-11 4-8
	Installing Parachute	4-12 4-13
	Marking Rigged Load	4-13 4-13
	Equipment Required	4-14 4-13
Section III	<b>HIGH-VELOCITY AIRDROP</b>	
	Description of Load	4-15 4-15
	Preparing Drop Items	4-16 4-15
	Preparing Skid Board	4-17 4-15
	Positioning Straps	4-18 4-15
	Placing Honeycomb	4-19 4-15
	Securing Straps	4-20 4-17
	Securing Skid Board	4-21 4-17
	Installing Parachute	4-22 4-17
	Marking Rigged Load	4-23 4-17
	Equipment Required	4-24 4-17

		Paragraph	Page
Section IV	HAARS		
	Description of Load	4-25	4-20
	Rigging Load	4-26	4-20
	Preparing and Installing Parachute	4-27	4-20
	Installing Altitude Sensor Parachute Staging Unit and Pilot Parachute	4-28	4-20
	Marking Rigged Load	4-29	4-25
	Equipment Required	4-30	4-25
<b>PART THREE RIGGING A-21 CONTAINER LOADS</b>			
CHAPTER 5	GENERAL INFORMATION AND PROCEDURES		
	A-21 Cargo Bag Assembly	5-1	5-1
	Capabilities of A-21 Bag	5-2	5-2
	Parachutes Used for A-21 Containers	5-3	5-2
	Installation of Parachutes on A-21 Containers	5-4	5-2
CHAPTER 6	RIGGING TYPICAL A-21 LOADS		
Section I	LOW-VELOCITY AIRDROP FROM PARATROOP DOOR		
	Description of load	6-1	6-1
	Preparing Drop Items	6-2	6-1
	Positioning Container and Load	6-3	6-1
	Rigging Container	6-4	6-3
	Installing Parachute	6-5	6-5
	Marking Rigged Load	6-6	6-5
	Equipment Required	6-7	6-5
Section II	LOW-VELOCITY AIRDROP FROM RAMP		
	Description of Load	6-8	6-7
	Preparing Drop Items	6-9	6-7
	Preparing Skid Board	6-10	6-7
	Positioning Container and Load	6-11	6-7
	Rigging Container	6-12	6-7
	Securing Skid Board	6-13	6-7
	Installing Parachute	6-14	6-10
	Marking Rigged Load	6-15	6-10
	Equipment Required	6-16	6-10
Section III	HIGH-VELOCITY AIRDROP		
	Description of Load	6-17	6-12
	Preparing Drop Items	6-18	6-12
	Preparing Skid Board	6-19	6-12
	Positioning Honeycomb	6-20	6-12
	Positioning Container and Load	6-21	6-13
	Rigging Container	6-22	6-13
	Securing Skid Board	6-23	6-13

	Paragraph	Page
Installing Parachute	6-24	6-13
Marking Rigged Load	6-25	6-13
Equipment Required	6-26	6-13
Section IV		
HAARS		
Description of Load	6-27	6-16
Rigging Container	6-28	6-16
Preparing and Installing Cargo Parachute	6-29	6-16
Installing Altitude Sensor Parachute Staging Unit and Pilot Parachute	6-30	6-16
Marking Rigged Load	6-31	6-16
Equipment Required	6-32	6-16
CHAPTER 7		
RIGGING SPECIFIC A-21 LOADS		
Section I		
RIGGING GLLD FOR LOW-VELOCITY AIRDROP		
Description of Load	7-1	7-1
Preparing Skid Boards	7-2	7-1
Placing Honeycomb and Top Skid Board	7-3	7-1
Rigging GLLD	7-4	7-1
Installing Parachute	7-5	7-1
Marking Rigged Load	7-6	7-10
Equipment Required	7-7	7-10
Section II		
RIGGING AIR TRAFFIC CONTROL FACILITY AN/TSQ-97A FOR LOW-VELOCITY AIRDROP		
Description of Load	7-8	7-12
Preparing Load	7-9	7-12
Preparing Skid Board	7-10	7-15
Positioning Honeycomb	7-11	7-16
Placing Container	7-12	7-17
Positioning Load	7-13	7-17
Rigging Container	7-14	7-21
Installing Parachute	7-15	7-21
Marking Rigged Load	7-16	7-21
Equipment Required	7-17	7-21
<b>PART FOUR</b>		
<b>RIGGING A-22 CONTAINER LOADS</b>		
CHAPTER 8		
GENERAL INFORMATION FOR A-22 LOADS		
A-22 Cargo Bag Assembly	8-1	8-1
A-22 Skid Board	8-2	8-1
A-22 Container Limitations	8-3	8-1
Double A-22 Cargo Bag	8-4	8-1
Stretch A-22 Cargo Bag	8-5	8-1
Assembly Line Rigging	8-6	8-1
Inspection of Load	8-7	8-1
Parachutes Used	8-8	8-1
Installation of Parachutes	8-9	8-3

	Paragraph	Page
<b>CHAPTER 9</b>	<b>RIGGING TYPICAL A-22 LOADS</b>	
<b>Section I</b>	<b>RIGGING A-22 LOADS FOR LOW-VELOCITY AIRDROP</b>	
	Description of Load	9-1 9-1
	Preparing Drop Items	9-2 9-1
	Preparing Skid Board	9-3 9-1
	Positioning Honeycomb	9-4 9-3
	Positioning A-22 Cargo Bag Sling, Cover, and Load	9-5 9-4
	Securing A-22 Cargo Bag Cover	9-6 9-5
	Securing A-22 Cargo Bag Sling	9-7 9-6
	Securing Skid Board to A-22 Cargo Bag	9-8 9-7
	Attaching Suspension Webs	9-9 9-8
	Installing Parachute	9-10 9-9
	Marking Rigged Load	9-11 9-9
	Equipment Required	9-12 9-9
<b>Section II</b>	<b>RIGGING A-22 LOADS FOR HIGH-VELOCITY AIRDROP</b>	
	Description of Load	9-13 9-11
	Preparing Items and Skid Board	9-14 9-11
	Positioning Honeycomb	9-15 9-11
	Rigging Container	9-16 9-11
	Installing Parachute	9-17 9-11
	Marking Rigged Load	9-18 9-14
	Equipment Required	9-19 9-14
<b>Section III</b>	<b>RIGGING DOUBLE A-22 CARGO BAG LOADS FOR LOW-VELOCITY AIRDROP</b>	
	Description of Load	9-20 9-16
	Preparing Skid Board	9-21 9-16
	Preparing Skid Board Ties and Positioning Honeycomb	9-22 9-17
	Positioning A-22 Sling Assemblies	9-23 9-18
	Positioning Covers and Honeycomb	9-24 9-20
	Positioning Load and Closing Bag Covers	9-25 9-21
	Securing Tie-Down Straps	9-26 9-22
	Securing Lateral Straps	9-27 9-23
	Securing Skid Board Ties	9-28 9-24
	Installing Suspension Slings	9-29 9-25
	Installing Parachute	9-30 9-26
	Marking Rigged Load	9-31 9-27
	Equipment Required	9-32 9-27

	Paragraph	Page
Section IV	<b>RIGGING STRETCH A-22 CARGO BAG LOADS FOR LOW-VELOCITY AIRDROP</b>	
	Description of Load	9-33 9-29
	Preparing Skid Board	9-34 9-29
	Preparing Skid Board Ties and Positioning Honeycomb	9-35 9-30
	Positioning A-22 Sling Assemblies	9-36 9-31
	Positioning Covers and Honeycomb	9-37 9-33
	Positioning Load and Closing Bag Covers	9-38 9-34
	Securing Tie-Down Straps	9-39 9-35
	Securing Lateral Straps	9-40 9-36
	Securing Skid Board Ties	9-41 9-37
	Installing Suspension Slings	9-42 9-38
	Installing Parachute	9-43 9-39
	Marking Rigged Load	9-44 9-40
	Equipment Required	9-45 9-40
CHAPTER 10	<b>RIGGING SPECIFIC SINGLE A-22 LOADS</b>	
Section I	<b>RIGGING TRAY-PACK RATIONS FOR LOW-VELOCITY AIRDROP</b>	
	Description of Load	10-1 10-1
	Preparing Load	10-2 10-1
	Preparing Skid Board	10-3 10-1
	Positioning Honeycomb	10-4 10-1
	Rigging Load	10-5 10-1
	Installing Parachute	10-6 10-1
	Marking Rigged Load	10-7 10-1
	Equipment Required	10-8 10-3
Section II	<b>RIGGING COMPANY-LEVEL FIELD FEEDING KITCHEN FOR LOW-VELOCITY AIRDROP</b>	
	Description of Load	10-9 10-5
	Preparing Skid Board	10-10 10-6
	Positioning Honeycomb	10-11 10-6
	Positioning Container, Base, and Leg Braces	10-12 10-7
	Preparing Heater Cabinet	10-13 10-8
	Preparing Pot Assembly	10-14 10-12
	Positioning Load	10-15 10-13
	Closing Container	10-16 10-19
	Completing Rigged Load and Installing Parachute	10-17 10-19
	Marking Rigged Load	10-18 10-20
	Equipment Required	10-19 10-20
Section III	<b>RIGGING PETROLEUM PRODUCTS</b>	
	Description of Load	10-20 10-23
	Preparing Skid Board and Positioning Honeycomb	10-21 10-23
	Positioning Container	10-22 10-23
	Positioning Load	10-23 10-23
	Securing Container and Installing Parachute	10-24 10-23
	Equipment Required	10-25 10-23

	Paragraph	Page
<b>CHAPTER 11</b>	<b>RIGGING SPECIFIC DOUBLE A-22 LOADS FOR LOW-VELOCITY AIRDROP</b>	
Section I	<b>RIGGING SNOWMOBILE</b>	
	Description of Load	11-1 11-1
	Preparing Skid Board	11-2 11-1
	Positioning Container	11-3 11-1
	Positioning Honeycomb	11-4 11-1
	Preparing Snowmobile	11-5 11-4
	Positioning Load	11-6 11-6
	Completing Rigged Load	11-7 11-8
	Marking Rigged Load	11-8 11-8
	Equipment Required	11-9 11-8
Section II	<b>RIGGING AHKIO SLEDS</b>	
	Description of Load	11-10 11-11
	Preparing Skid Board and Positioning Honeycomb and Container	11-11 11-11
	Positioning Load	11-12 11-11
	Completing Rigged Load	11-13 11-11
	Marking Rigged Load	11-14 11-13
	Equipment Required	11-15 11-13
<b>PART FIVE</b>	<b>RIGGING SPECIALIZED LOADS AND EQUIPMENT</b>	
<b>CHAPTER 12</b>	<b>RIGGING A-23 CONTAINERS</b>	
	Description of Load	12-1 12-1
	Modifying 68-Inch Pilot Parachute	12-2 12-2
	Rigging Container	12-3 12-4
	Completing Rigged Load	12-4 12-4
	Marking Rigged Load	12-5 12-8
	Equipment Required	12-6 12-8
<b>CHAPTER 13</b>	<b>FABRICATING AIR FORCE AIRDROP EQUIPMENT</b>	
Section I	<b>AIR FORCE UNILATERAL TRAINING</b>	
	Description of SATB	13-1 13-1
	Preparing Sandbag	13-2 13-1
	Fabricating SATB	13-3 13-2
	Attaching Pendulum Line	13-4 13-5
	Packing and Installing Pilot Parachute	13-5 13-7
	Attaching Marker Light	13-6 13-8
	Using Extraction Parachute Deployment Bag	13-7 13-8
	Equipment Required	13-8 13-8
Section II	<b>FABRICATING OF C-130 CDS PULLEY STRAP</b>	
	Description of C-130 CDS Pulley Strap	13-9 13-10
	Preparing C-130 CDS Pulley Strap	13-10 13-10
<b>GLOSSARY</b>		Glossary-1
<b>REFERENCES</b>		References-1

## PREFACE

### PURPOSE

This manual gives the latest approved doctrine for rigging airdrop containers. It is written for use by a parachute rigger or jumpmaster. It consists of five parts.

- Part One contains general information for containers and aircraft.
- Part Two contains procedures for rigging A-7A container loads.
- Part Three contains procedures for rigging A-21 container loads.
- Part Four contains procedures for rigging A-22 container loads.
- Part Five contains procedures for rigging specialized loads and equipment.

### NOTICE OF EXCEPTION

When an item of airdrop equipment is replaced or a rigging procedure is changed, it will be impossible to change all manuals in the field at one time. Therefore, FM 10-500-3/TO 13C7-1-11/FMFM 7-47 will be changed, when necessary, and will take precedence over the procedures in an individual rigging manual. There may be times, however, when the procedures in an individual rigging manual must be followed even though they are different from those in this manual. When this occurs, a notice of exception will be printed at the beginning of each paragraph where the exception is authorized. The notice of exception will look like the following:

#### NOTICE OF EXCEPTION

The procedures in this paragraph are different from those in FM 10-500-3/TO 13C7-1-11/FMFM 7-47. An exception to FM 10-500-3/TO 13C7-1-11/FMFM 7-47 is granted. The procedures in this paragraph must be followed.

Manuals which have currently been granted exceptions are FM 10-550/TO 13C7-22-71 and FM 10-500-53/TO 13C7-18-41/MCRP 4-3.8.

### REFERENCE INFORMATION

To avoid repeating certain information and procedures, it is often necessary to reference other FMs and TMs. For example, this manual often references FM 10-500-2/TO 13C7-1-5. This may seem to be contradictory in that this manual, FM 10-500-3/TO 13C7-1-11/FMFM 7-47, deals with rigging container loads and FM 10-500-2/TO 13C7-1-5 deals with rigging platform loads. However, FM 10-500-2/TO 13C7-1-5 also provides general information and general procedures. Where information is the same or only minor differences exist, it is permissible to state that the information is provided in FM 10-500-2/TO 13C7-1-5. Where procedures are the same or only minor differences exist, it is permissible to state that the procedure is done according to or by adapting the procedures in FM 10-500-2/TO 13C7-1-5.

## USER INFORMATION

The proponent of this publication is HQ TRADOC. You are encouraged to report any errors or omissions and suggest ways for making this a better manual. Army personnel, send your comments on DA Form 2028 directly to:

Airborne and Field Services Department  
USA Quartermaster Center and School  
1010 Shop Road  
Fort Lee, VA 23801-1502

Air Force personnel, send your reports on AFTO Form 22 through:

Headquarters  
Air Mobility Command (AMC/DOTX)  
402 Scott Drive Unit 3A1  
Scott AFB, IL 62225-5302

Air Force personnel in Air Combat Command, send your reports on AFTO Form 22 through:

HQ ACC/DOTW  
205 Dodd Boulevard, Suite 101  
Langley AFB, VA 23665-2789

Air Force personnel in Special Operations Command, send your reports on AFTO Form 22 through:

HQ AFSOC/DOXT  
100 Bartley Street, Suite 260  
Hurlburt Field, FL 32544-5273

to:

Airborne and Field Services Department  
USA Quartermaster Center and School  
1010 Shop Road  
Fort Lee, VA 23801-1502

Also send information copy of AFTO Form 22 to:

SA-ALC/TILD  
485 Quentin Roosevelt Road  
Kelly AFB, TX 78241-6421

Marine Corps personnel, send your comments to:

Commanding General  
Doctrine Division (C42)  
3300 Russell Road, Suite 318A  
Quantico, VA 22134-5021