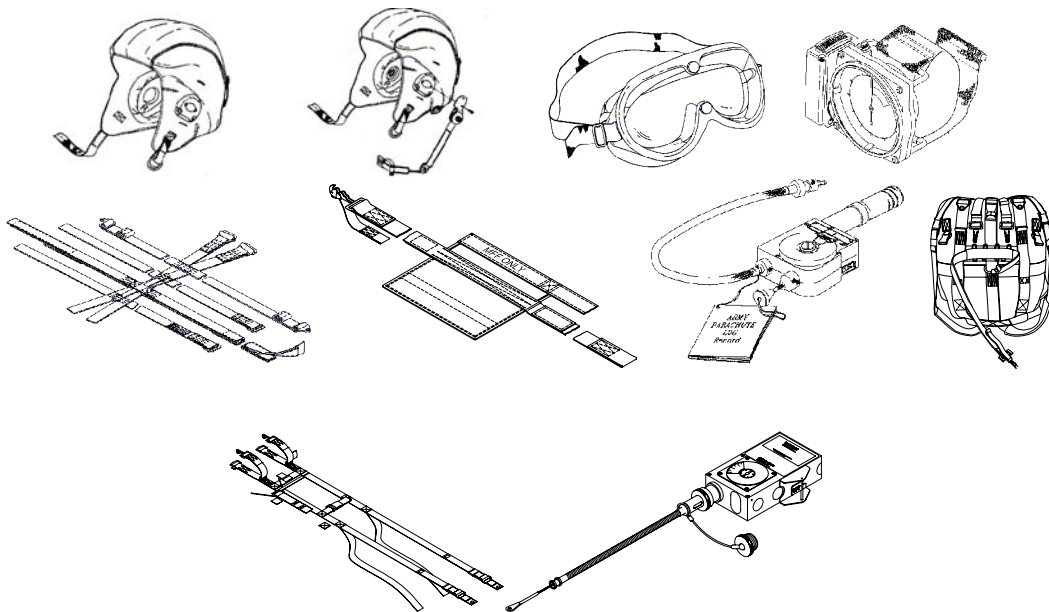


**UNIT MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)
FOR
ANCILLARY EQUIPMENT FOR: MILITARY FREE-FALL SYSTEM**

HELMET, FREE-FALL, PARACHUTISTS, TYPE I
(NSN 8415-01-018-4911, 8415-01-018-4912)
HELMET, FREE-FALL, PARACHUTISTS, TYPE II
(NSNS 8415-01-018-4913, 8415-01-018-4914, 8415-01-018-4915)
GOGGLES (NSN 8465-01-328-8268)
ALTIMETER, PARACHUTISTS (NSN 6660-01-213-9035)
SLING ASSEMBLY, EQUIPMENT ATTACHING (NSN 1670-01-008-7755)
LINE, EQUIPMENT LOWERING (P/N 11-1-2530-2)
RELEASE ASSEMBLY, RIPCORDER, AUTOMATIC, TYPE FF2
(NSN 1670-01-213-8145)
RELEASE, AUTOMATIC RIPCORDER, AR2, MODEL 451
(NSN 1670-01-369-7914)
DROP BAG, PARACHUTE W/7-FOOT LOWERING LINE
(1670-01-508-9051)
DROP BAG, PARACHUTE W/15-FOOT LOWERING LINE
(1670-01-508-9053)
HARNESS, SINGLE POINT RELEASE ASSEMBLY
(NSN 1670-01-227-7992)



DISTRIBUTION STATEMENT A – Approved for public release; distribution is unlimited.

* This manual supersedes TM 10-1670-300-20&P dated 31 July 1995

HEADQUARTERS, DEPARTMENT OF THE ARMY

31 JULY 2004

**HEADQUARTERS,
DEPARTMENTS OF THE ARMY,
AIR FORCE, AND NAVY
WASHINGTON, D.C., 31 July 2004**

**UNIT MAINTENANCE MANUAL INCLUDING
REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
ANCILLARY EQUIPMENT FOR: MILITARY FREE-FALL SYSTEM**

HELMET, FREE-FALL, PARACHUTISTS, TYPE I
(8415-01-018-4911, 8415-01-018-4912)
HELMET, FREE-FALL, PARACHUTISTS, TYPE II
(NSNs 8415-01-018-4913, 8415-01-018-4914, 8415-01-018-4915)
GOGGLES (NSN 8465-01-328-8268)
ALTIMETER, PARACHUTISTS (NSN 6660-01-213-9035)
SLING ASSEMBLY, EQUIPMENT ATTACHING (NSN 1670-01-008-7755)
LINE, EQUIPMENT LOWERING (PART NUMBER 11-1-2530-2)
RELEASE ASSEMBLY, RIPCORDER, AUTOMATIC, TYPE FF2 (NSN 1670-01-213-8145)
RELEASE, AUTOMATIC RIPCORDER, AR2, MODEL 451 (NSN 1670-01-369-7914)
DROP BAG, PARACHUTE W/7-FOOT LOWERING LINE (NSN 1670-01-508-9051)
DROP BAG, PARACHUTE W/15-FOOT LOWERING LINE (1670-01-508-9053)
HARNESS, SINGLE POINT RELEASE ASSEMBLY (NSN 1670-01-227-7992)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

ARMY

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures please let us know. Mail your letter, DA form 2028 (Recommended Changes to Publications and Blank Forms or DA form 2028-2, located in the back of this manual) directly to Commander, U.S. Army Tank-automotive & Armament Command, ATTN: AMSTA-LC-CECT, Kansas St., Natick, MA 01760. You may also submit your recommended changes by E-mail directly to: amssbriml@natick.army.mil. A reply will be furnished directly to you. Instructions for sending electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

AIR FORCE

Reports by U.S. Air Force units should be submitted on AFTO Form 22 (Technical Order Publication Improvement Report and Reply) and forwarded to the address prescribed above for the Army. An information copy of the prepared AFTO Form 22 shall be furnished to WP-ALC/TILTA, 420 2nd Street, Suite 100, Robins AFB, GA 31098-1640.

MARINE CORPS

Marine Corps personnel submit NAVMC 10772 form to commander, ATTN: (Code 850), Marine Corps Logistics Bases, 814 Radford Blvd., Albany, GA 31704-1128.

NAVY

Submit NAVSEA Form 4160/1 (REV 2-99) to Commander, NSDSA Code 5E30, NAVSURFCENDIV, 4363 Missile Way, Port Hueneme, CA 93043-4307. A reply will be sent to you.

DISTRIBUTION STATEMENT A – Approved for public release. Distribution is unlimited.

*This manual supercedes TM 10-1670-300-20&P dated 31 July 1995.

TABLE OF CONTENTS

WP Sequence No.

WARNING SUMMARY

HOW TO USE THIS MANUAL

GENERAL INFORMATION	0001 00
---------------------------	---------

Chapter 1. DESCRIPTION AND THEORY OF OPERATION

Equipment Description and Data	0002 00
Description and Theory of Operation	0003 00

CHAPTER 2. MAINTENANCE INSTRUCTIONS

Service Upon Receipt	0004 00
PMCS, Introduction	0005 00
Preventive Maintenance Checks And Services	0006 00
Unit Maintenance Introduction	0007 00
Unit Maintenance Inspection	0008 00
Unit Maintenance Airing	0009 00
Unit Maintenance Cleaning And Drying	0010 00
Unit Maintenance Salt/Fresh Water Contamination Test	0011 00
Unit Maintenance Marking And Restenciling	0012 00
Unit Maintenance Searing And Waxing	0013 00
Unit Maintenance Sewing Procedures	0014 00
Unit Maintenance Grommets	0015 00
Unit Maintenance Helmet, Free Fall Parachutists Type I	0016 00
Unit Maintenance Helmet, Free Fall Parachutists Type II	0017 00
Unit Maintenance Goggles, Sun, Wind, and Dust	0018 00
Unit Maintenance Altimeter	0019 00
Unit Maintenance Sling Assembly, Equipment Attaching	0020 00
Unit Maintenance Line, Equipment Lowering	0021 00
Unit Maintenance Release Assembly Ripcord Automatic, Type FF2	0022 00
Unit Maintenance Automatic Ripcord Release AR2 Jump/Off Switch	0023 00
Unit Maintenance Power Cable Assembly Main/Reserve	0024 00
Unit Maintenance Parachute Drop Bag	0025 00
Unit Maintenance Harness, Single Point Release	0026 00
Unit Maintenance Preparation For Storage	0027 00
Unit Maintenance Preparation For Shipment	0028 00

CHAPTER 3. SUPPORTING INFORMATION

References	0029 00
Maintenance Allocation Chart (MAC) Introduction	0030 00
Maintenance Allocation Chart	0031 00
Repair Parts and Special Tools List (RPSTL) Introduction	0032 00
RPSTL Group 1. Helmet, Parachutists Free Fall Type 1, Medium, and Large	0033 00
RPSTL Group 2. Helmet, Parachutists Free Fall Type 2, Small, Medium, and Large	0034 00
RPSTL Group 3. Goggles, Sun, Wind, and Dust	0035 00
RPSTL Group 4. Altimeter, Barometer	0036 00

TABLE OF CONTENTS - continued

	<u>WP Sequence No</u>
RPSTL Group 5. Sling Assembly, Equipment Attaching	0037 00
RPSTL Group 6. Line, Equipment Lowering, 8 Foot	0038 00
RPSTL Group 7. Release Assembly, Ripcord, Automatic, Type FF2	0039 00
RPSTL Group 8. FF2 Power Cable	0040 00
RPSTL Group 9. Ripcord Release Assembly, Automatic, Model 451	0041 00
RPSTL Group 10. Harness, Single Point Release	0042 00
RPSTL Group 11. Parachute Drop Bag	0043 00
Expendable/Durable Supplies And Materials List	0044 00
Illustrated List Of Manufactured Items	0045 00
National Stock Number Index	0046 00
Part Number Index	0047 00
Alphabetical Index	INDEX 1

HOW TO USE THIS MANUAL

This manual contains General Information, Preventive Maintenance Checks and Services (PMCS), and Maintenance Information for the Ancillary Military Free-Fall Equipment.

Chapter 1 contains introductory information on the Ancillary Military Free-Fall Equipment and any associated equipment as well as Equipment Description and Data. Chapter 2 details Unit Maintenance Procedures. Chapter 3 contents contains Supporting Information.

Manual Organization and Page Numbering System. The manual is divided into three major chapters that detail the topics mentioned above. Within each chapter are work packages covering a wide range of topics. Each work package is numbered sequentially starting at page 1. The work package has its own page numbering scheme and is independent of the page numbering used by other work packages. Every work package has an even number of pages so that it does not interfere with any other work package. Each page of a work package has a page number of the form XXXX YY-ZZ where “XXXX” is the work package number (e.g. 0010 is work package 10). “YY” is a number that allows for a work package to be inserted between two existing work packages without disturbing the remainder of the TM (e.g WP 0010 01 would fall between WP 0010 and WP 0011). “ZZ” represents the number of the page within that work package. A page number such as 0010 00-1/(2 Blank) means that page 1 contains information but page 2 of that work package has been intentionally left blank. A page number such as 0010 00-(1 Blank)/2 means that page 1 of that work package has been intentionally left blank but page 2 contains information.

Illustrations. Illustrations for procedures in this manual always follow the procedure. For example, if given a procedural instruction such as “1. Locate the pump assembly (1).”, the (1) references the photo or illustration immediately *following* the procedure.

Finding Information. The Table of Contents permits the reader to find information in the manual quickly. The reader should start here first when looking for a specific topic. The Table of Contents lists the topics contained within each chapter and the work package sequence number where it can be found.

Example: If the reader were looking for instructions on cleaning and drying which is a unit maintenance topic, the table of contents indicates that unit maintenance information can be found in Chapter 2. Scanning down the listings for Chapter 2, Cleaning and Drying can be found in WP 0012 00 (Work Package 12).

An Alphabetical Index can be found at the back of the manual. It lists specific topics with the corresponding work package.

UNIT MAINTENANCE
ANCILLARY MILITARY FREE-FALL EQUIPMENT
GENERAL INFORMATION

SCOPE

This Technical Manual provides Unit maintenance instructions for Ancillary Military Free-Fall Equipment. This equipment is used by Military Free-Fall qualified personnel.

MAINTENANCE FORMS AND PROCEDURES

Department of the Army forms and procedures used for equipment maintenance shall be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS) (Maintenance Management Update).

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Objective. Methods of destruction used to inflict damage on air delivery equipment should make it impossible to restore equipment to a usable condition in a combat zone, by either repair or cannibalization.

Authority. Destruction of air delivery equipment that is in imminent danger of capture by an enemy is a command decision that must be made by a battalion or higher commander, or the equivalent.

Implementation plan. All units that possess air delivery equipment should have a plan for the implementation of destruction procedures.

Training. All personnel who use or perform such functions as rigging, packing, maintenance, or storage of air delivery equipment, should receive thorough training on air delivery equipment destruction procedures and methods. The destruction methods demonstrated during training should be simulated. Upon completion of training, all applicable personnel should be thoroughly familiar with air delivery equipment destruction methods and be capable of performing destruction without immediate reference to any publication.

SPECIFIC METHODS

Specific methods of destroying Army materiel to prevent enemy use shall be by mechanical means, fire or by use of natural surroundings.

Destruction by Mechanical Means. Air delivery equipment metal assemblies, parts, and packing aids shall be destroyed using hammers, bolt cutters, files, hacksaws, drills, screwdrivers, crowbars, or other similar devices used to smash, break, bend or cut.



WARNING

Exercise extreme care when using petroleum products to destroy equipment by fire, as these materials are highly flammable. Improper handling may cause injury to personnel.

TM 10-1670-300-20&P

CHAPTER 1

DESCRIPTION AND THEORY OF OPERATION

ANCILLARY MILITARY FREE-FALL EQUIPMENT

UNIT MAINTENANCE
ANCILLARY MILITARY FREE-FALL EQUIPMENT
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

Characteristics

Lightweight

Rugged

Capabilities and Features

Provides parachutist communication with aircraft.

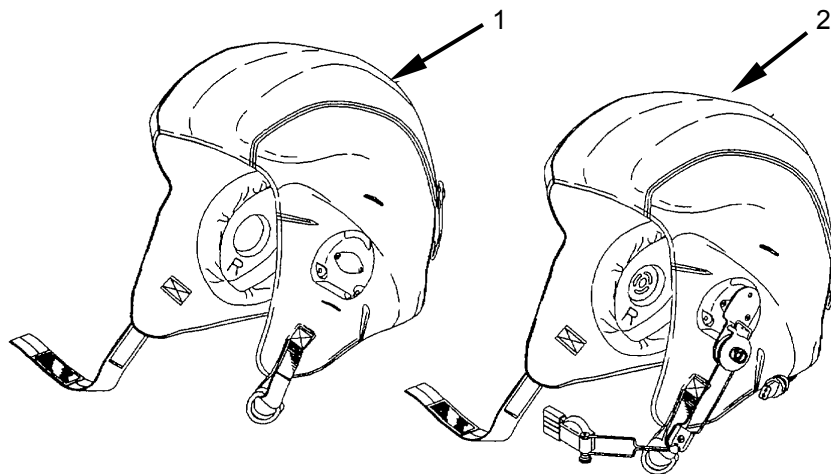
Automatically deploys parachute at preset altitude.

Allows for carriage of individual equipment.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. The ancillary military free-fall equipment is not issued as a set; all components can be requisitioned separately. The equipment consists of the following components depicted and described by the following paragraphs and illustrations.

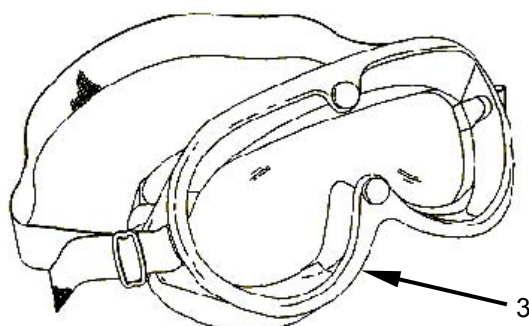
Helmet, Free-Fall Parachutist.

- (1) Type I; Without Communication Equipment. The Type I Free-fall Parachutist Helmet (1) is a leather helmet that provides protection to the parachutist, but no communication capabilities.
- (2) Type II; With Communication Equipment. The Type II Free-fall Parachutist Helmet II (2), also called Jumpmaster's Helmet, is identical to the Type I, but adds a boom microphone and ear phones.

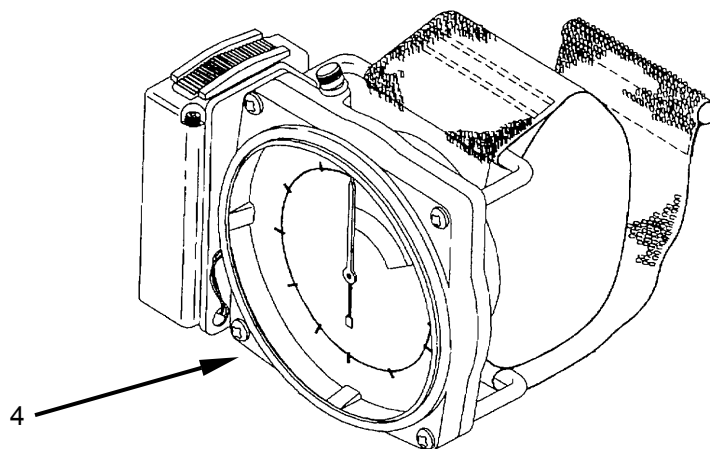


Goggles, Sun, Wind and Dust

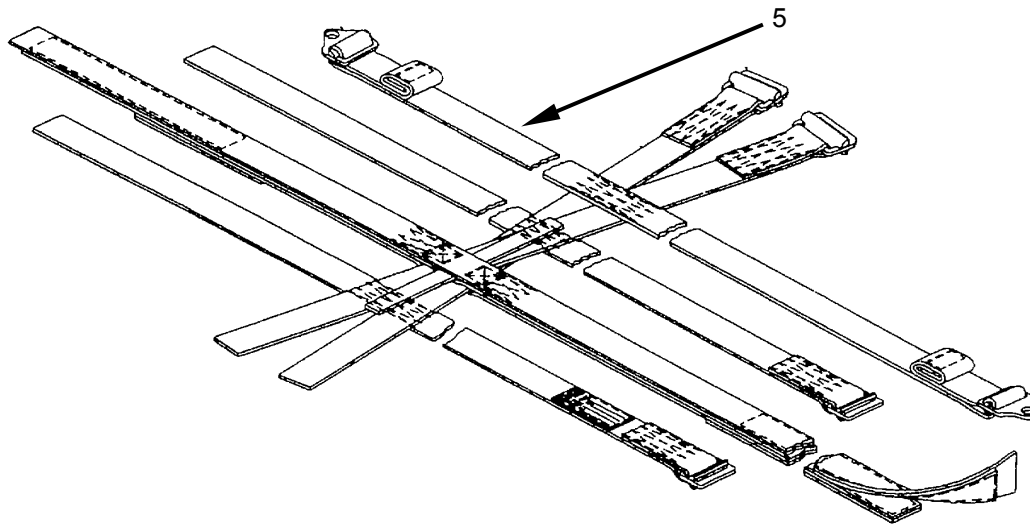
Sun and Wind Goggles (3) are constructed with clear one piece plastic lenses. The frame is made from synthetic rubber and a carrying case is provided. May be worn with or without eyeglasses. Use of commercially procured goggles is authorized provided they are compatible with the helmet and issued oxygen mask. All goggles used for eye protection shall be made of shatterproof materials and should be made of clear plastic for oxygen jumps. Local approval may be granted by Commanding Officers on a case-by-case basis to use similar items not listed. Such approval should be based on sound, experienced judgment that the equipment would not endanger the parachutist and that it would enhance the support of mission requirements.



Altimeter, Parachutists. (4) The MA2-30 is used as a military parachuting altimeter for high altitude, low opening (HALO) and high altitude, high opening (HAHO) operations. The MA2-30 is tested to 30,000 feet Mean Sea Level (MSL) with an accuracy of +/- 500 feet from 20,000 to 30,000 feet, +/- 400 feet from 10,000 to 20,000 feet, +/- 350 feet from 2,500 to 5000 feet and +/- 300 feet from 0 to 2,500 feet. The unit reads 0 to 30,000 feet in 2 1/2 revolutions in 250-foot increments. The dial has a red warning segment from 0 to 2,500 feet for daylight operations and a black warning segment from 0 to 2,500 feet for proper contrast in lighted operation. The MA2-30 has a temperature compensated 17-jewel Swiss mechanism. There is a complete 4 red bulb self-contained lighting system for night operations powered by size AA nickel cadmium or lithium batteries. The MA2-30 has a white face, black numbers and colored arc. The MA2-30 has a shipping weight of one pound. The unit comes with a hook & pile wrist mount but may also be panel mounted if necessary.



Sling Assembly, Equipment Attaching. (5) The Sling Assembly, Equipment Attaching is a nylon webbing device of spider type harness design with two metal quick releases. The sling is modified by removing the leg straps with hook and pile tape closures or folds and taping the leg straps so that the parachutist cannot use them. This sling is used to rig combat packs to the parachute harness during free-fall operations.



Line, Equipment Lowering. Line, equipment lowering (6) is a length of nylon web, attaching hardware, and a pocket into which the folded line is stored. The lowering line is constructed of PIA-W-5625 webbing, 1-inch wide, with a snap hook at one end. The lowering line is used on air delivery equipment. Part of the assembly is a 9-by 7-inch nylon duck retainer (stow pocket) sewn to the upper end. The flaps have Hook-Pile Tape Sewn to the edges. The lowering line is modified to an 8-foot length for use with Military Free-Fall Ram Air Parachute Assemblies.

