Commercial Manual (MTV)

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Description:

The Modular Tactical Vest (MTV) is a replacement for the aging Outer Tactical Vest (OTV). The MTV has many new and improved features as are described below.

Improved OTV Closures: The MTV incorporates a new vest closure that is side opening. This side opening enclosure eliminates the vest from inadvertently opening due to worn Velcro. Our closure incorporates a cummerbund that houses the quick release mechanism in the rear and attaches to the front using Velcro on both the underside AND topside of the cummerbund flaps. This closure is augmented with a front panel that secures the closure in place and is strengthened with a secondary snap closure. This type of closure system strengthens the wearers' ability to position pouches and pockets and keeps them from pulling the vest open when fully loaded. The cummerbund also allows the user to adjust the fit of the vest around the torso to improve fit.

Quick Release Capability: The MTV incorporates a two-step quick release system that has a special feature. Once the quick release function is activated the vest falls away from the body but does not segment into several different parts. The vest remains intact in one piece. This is a significant feature as in many cases the piece/parts become obstacles for others to navigate when faced with an emergency egress in a water incident. By keeping the vest in one piece there are less obstacles for others to navigate once Marines blow out their vest. It is also very helpful in a casualty situation. If the vest is cut away using the quick release method, the vest stays in one piece making it easier to put back on a Marine for extraction. It is also easier to maintain all of the parts together so as not to leave sensitive weapons, munitions and intelligence on the battlefields as a result of treating a casualty.

Allow wearers to quickly/easily doff MTV in emergency situations: The MTV incorporates a quick release cable that immediately releases the cummerbund in the rear of the vest. It also incorporates quick release fastex buckles on each shoulder. This two step system is extremely easy to operate. To release the vest in an emergency, simply pull the quick release handle sharply across the body, and then grab one fastex buckle on either shoulder, release the fastex buckle and pull the vest away from the body. This evolution takes no more than a few seconds.

Provide a more effective (i.e. better/faster) means for casualty treatment: The MTV incorporates several fast and easy ways for medical personnel to access the casualty. The medical personnel can either pull the quick release handle and then disengage one fastex buck at the shoulder, or simply pull up the front vest closure panel, release one side of the cummerbund and then release one fastex buckle at the shoulder. Both methods are very effective. The second method allows the medical personnel to re-close the vest so that the wounded Marine or Sailor is still protected after treatment is administered. If the medical personnel must engage the quick release, they will still have the ability to secure the Marine back into their vest utilizing the Med-Evac strap issued with each vest.

The quick-release mechanism should be easily identifiable (visual and tactile): The quick release pull tab that activates the quick release function is easily found due to the rubber hose that houses the quick release loop. This rubber hose is easily distinguished

with the other components of the vest. Even in low light the handle can be easily found by touch. The MTV allows the user to rig the quick release handle for a top or bottom pull. The quick release handle pull tab itself has Velcro on both sides in order to keep it in place. Once the pull tab is secure it is easily identifiable both visually and tactile. Once the user determines where to locate the pull tab it becomes second nature after several quick release activations.

Resist inadvertent activation: The MTV has several safety features that will not allow a Marine to lose his gear due to an inadvertent activation. First, the quick release handle pull tab has a built in safety feature. This consists of a Velcro loop that affixes to the underside of the cummerbund. This safety keeps the pull handle from disengaging should the pull tab be snagged on an object. Secondly, should the pull tab be engaged, the vest itself will not fall from the users body. The two-step quick release process consists of both pulling the quick release handle and unsnapping one fastex buckle on the shoulder. Unless both are accomplished the vest will remain on the body.

Increased Protection Coverage

Lower Back and Kidney Area: The MTV design incorporates several features to increase the area of coverage in the lower back area. First, the vest has been leveled out. The OTV rode higher in the back exposing the vital organs. By lowering the back panel the MTV has significantly increased the area of coverage for the lower back. Second, the MTV has incorporated a “drop” panel in the rear of the vest. This additional armor increases protection of the lower back and spine. This “drop” armor is removable and the pouch it fits into can be stowed away for personnel who are in vehicles or simply do not want to wear it.

Side Torso Area: The MTV has increased the side torso area protection by adding a panel of ballistic material into the attached side plate pocket. This armor covers the entire area behind the side plate, (no matter which size is used, 6x8, 7x8 Side SAPI), and also covers any gap that may occur from OTV panels that do not meet on the side. This armor can be worn even if a plate is not, thereby ensuring that no gap exists on the side.

Total Area Coverage: Based on the side torso increase in protection that allows no gaps in armor, the MTV also ensures that no gaps will occur at the shoulder. The MTV has a built-in stop point for shoulder adjustability. This permanently attached feature will not allow the user to adjust the shoulder length so that there is a gap in shoulder protection. This “stop” also ensures that the adjustability in the shoulder region does not allow the user to adjust the shoulder so much that it creates a positioning problem for the front and rear SAPI/E-SAPI plates.

SAPI/Side SAPI Integration: The side plate carriers are adjustable in the carrier itself. The side plate pockets incorporate a Velcro internal system that allows adjustability and also includes an over the top strap that secures the plate into place.

The MTV design allows the user to insert a 6x8, 7x8 plate for increased protection. An external, X-Small SAPI Plate Pocket is also available. This pocket attaches via MOLLE webbing and can accommodate the X-Small SAPI for Marines with longer torsos wearing the Large and X-Large MTV. **SAPI/Side SAPI Adjustability:** The MTV design allows the user to adjust the positioning of the SAPI/Side SAPI to allow for the different torso dimensions of the wearer.

Front and Back SAPI/E-SAPI Adjustability: As mentioned above, the MTV has a designed failsafe "stop" feature into the shoulder adjustability. This "stop" allows the user to adjust the shoulder area to lengthen or shorten the height of the front and back SAPI/E-SAPI. This adjustability "stop" will not allow the user to over-adjust the plate positioning. The adjustability of the front plate is limited to 1" below to ½" above the sternal notch and the rear plate to become level with the front plate.

Side-SAPI Adjustability: The MTV has incorporated an internal, adjustable, side plate pocket. This pocket is attached using a "channel" created in the cummerbund that allows the user to insert a side plate into the channel. The plate is inserted into a pouch that is covered with hook and loop. This pouch is then placed into the channel. It is held in place by hook and loop on the inside of the cummerbund channel. This allows the user to move the pocket to a location that is desirable and then to affix the pocket so that it is secure. There is also a failsafe feature of this adjustability point just as there is in the shoulder. This "channel" will not allow the user to move the pocket beyond a certain point so that any gap in side armor coverage is completely mitigated by the placement of the side plate pocket no matter where the user places it.

Wiring Integration: Wiring integration is achieved by designing several communications wiring channels into the vest. The wiring channels are located on the front and back of the vest. There are channels are located at the upper corners of the plate pockets, on top and on the side. These channels allow the user to route cables through the channels and not interfere with pouches/pockets attached to the vest. The channels also keep the wiring from becoming entangled and snagged. These channels do not impede the quick release action and do not interfere with medical personnel access to casualties.

Rifle Bolster: Standard with each vest, one (1) rifle bolster is included. This bolster is flexible and adjustable. The bolster is adjustable due to the fact that it can be attached at the exact location that the wearer wants them. They can be easily moved or removed. The bolster is covered with a non-slip material for better rifle stability.

Improved Load Bearing Equipment (ILBE) Compatibility: The MTV can easily integrate with ILBE. One important factor in the compatibility is proper training. The pack can be worn with the MTV but must be worn correctly. The shoulder straps must be positioned correctly and the sternum strap should be worn. The pack can be used with the ILBE while wearing the waist-belt or without it.

Three Point Sling Compatible: The MTV is compatible with the three point sling. When worn correctly the sling will function properly and cause no stress points or friction.

Drop Holster Compatible: Drop holsters can be worn with the MTV. There are no integration issues.

Off Center Dual MOLLE Weave: The MTV has incorporated a section of off-center dual MOLLE weave. This section is located in the upper chest area and allows the user to make micro-adjustments on pouches where space is limited and where areas are constrained.

System Comfort: The MTV system is adjustable in the shoulder area, and the waist. This feature allows the wearer to make adjustments where necessary to eliminate any discomfort. The stability and durability of the vest is determined by the design and manufacture of the product. Every step necessary has been taken to ensure that the armor and pouches are as stable and durable as possible given the requirements we were given. The fabric is the same as the current OTV and should not pose any degradation over that of the OTV. The MTV has a mesh inner lining that promotes heat reduction by allowing greater circulation of air.

Camouflage: The MTV design uses producer dyed coyote brown cordura as well as producer dyed webbing. This creates a solid neutral coyote brown color without any shading or visual disruption.

Compatibility: The MTV integrates with all equipment issued for Marines. Quad Guard requires an adaptor kit in order to work effectively. There are no integration issues with the Lightweight Helmet (LWH) or any vehicles. In fact, by lowering the back of the vest has increased compatibility with the LWH. In the prone there is less interference with the LWH which results in a better sight picture and sight alignment with weapons.

Packaging

From the Manufacturer:

The MTV shall be preserved and packaged per the best commercial practices of ASTM D3951-98 by the commercial vendor.

Subsequent packaging required for long-term storage or for redistribution shall be per level "A" requirements of MILK-STD-2070-1D.

Marking for shipment and storage shall be in accordance with MIL-STD-129 Military Marking for Shipment and Storage.

From the Gaining Commands

In the event the MTV is required to be returned. The Gaining Command shall be responsible for preservation and packaging of the item(s).

Return to stock of items in condition code "A", "B" or "C" shall be in accordance with the current policy and procedures of MCO P4030.36, Marine Corps Packaging Manual. and MCO P4400.150, Consumer-Level Supply Policy Manual. Marking for shipment and storage shall be in accordance with MIL-STD-129, DoD Standard Practice for Military Marking.

Handling

When packaged in large palletized lots, the MTV shall be capable of being lifted and handled by standard Marine Corps handling equipment.

Four-way entry pallets should be used. Each prepared load shall be bonded with primary and secondary straps.

Handling shall be in accordance with the requirements of MCO 4450.14, Joint Service Manual for Storage and Materials Handling.

Storage

The MTV properly preserved and packaged requires no special storage. Storage shall be in accordance with the requirements of MCO 4450.14, Joint Service Manual for Storage and Materials Handling.

Transportation

The MTV properly preserved and packaged is capable of being transported by all means available to the Marine Corps (i.e. Ground (Truck), Air, Rail and Ocean) exercising all security policy and procedures under DoD 4500.9R, Defense Transportation Regulation.

Disposal

As the Modular Tactical Vest (MTV) becomes unserviceable, there are no known items within the MTV that would cause any type of difficulties disposing within the local Defense Reutilization & Marketing Office (DRMO). The soft armor will be reused when possible. Demilitarization and or disposal of the MTV to include the soft armor inserts, has been defined in Commanding General Marine Corps Systems Command 4400 PMM-162 dtd 20 Oct 2005 "DISPOSITION INSTRUCTIONS FOR UNITED STATES MARINE CORPS OUTER TACTICAL VESTS AND SMALL ARMS PROTECTIVE INSERTS, AND THEIR COMPONENTS. This letter has been provided to the CIFs and the CARDF, as well as the Defense Reutilization and Marketing Service.

Cleaning Instructions

Manual Wash: Failure to follow these instructions may destroy your MTV.

Remove dirt from surface using a cloth or soft bristle brush.

Remove the Small Arms Protective Inserts (SAPI) and soft ballistic panels from the MTV and modular component carriers. Remove loose dirt from the surface and wipe clean with a moistened clothe or soft brush only. Avoid submerging the panels in water. DO NOT bleach. DO NOT machine wash. DO NOT dry clean. DO NOT apply solvents to the ballistic panels. If ballistic panels become wet, allow to air dry in flat position away from heat sources and out of direct sunlight. If ballistic panels become saturated with liquids such as gasoline, bleach, or other lubricants, turn in for replacement as soon as possible.

Hand wash MTV base vest and modular component outer shells only in cold, using mild detergent or soap. DO NOT USE CHLORINE BLEACH, YELLOW SOAP, CLEANING

FLUIDS OR SOLVENTS, WHICH MAY DISCOLOR OR DETERIORATE THE ITEM.

Rinse the outer shells thoroughly in clean, cold or lukewarm water.

Air dry indoors or in shade, **AWAY FROM HEAT SOURCES.**

DO NOT ATTEMPT TO DYE ITEM OF FIX DISCOLORATIONS.

Machine wash or utilizing your dryer will cause shrinkage that will render the outer shell and ballistic unserviceable.

Professional Laundering

The USMC Consolidated Issue Facility (CIF) may be utilized for badly soiled MTVs vests.

These procedures are for the MTV outer shell carriers only. SAPI plates and ballistic panels MUST BE REMOVED prior to laundering. Laundering the SAPIs and ballistic panels will cause damage, diminish the level of protection and shorten the service life of the MTV. The yoke and collar assembly must NOT be laundered.

The ballistic panels of the MTV are serialized. If possible, keep same-serial number panels together when reassembling the vest. The outer shell may be marked with a serial number of the panels, but this is not required.

Remove the Enhanced Small Arms Protective Insert (ESAPI) plates from the front and rear pockets of the MTV. Close pockets by engaging hook and loop fastener tapes.

Description of Defects

Examination	Defect Description
Material	Hole, cut, tear, smash, burn, exposed drill hole, run, thin place, dye streak, color not as specified, misweave Knot or slub affecting greater than Level C of Sears Scale appearance or serviceability. Raw edges that will ravel Fabrics used not as specified Parts not cut correctly with respect to material lines Colors not as specified
Stitching	Open stitching, stitching not continuous, puckered, distorted, pleated, wavy, twisted, irregular for open more than 1 in., loose or tight stitch tension, broken or missing thread or stitch, needle chew, visible mend, edge or raised stitching sewn too close to edge resulting in damage to cloth, seam allowance not as specified, run-off, visible raw edge affecting appearance or serviceability Stitching not as specified End of stitching no secured; less than ¼ in. backstitched or less than 1 in. overstitched in each direction beyond on defective stitch area Fabric or webbing needle cut Thread type and or color not as specified Any operation not performed as specified
Ballistic Filler	Any area of ballistic filler bunched, not lying flat, plies folded. Splice Not cut in compliance with patterns or cut tolerance. Areal density or flexibility not as specified.
Buttonholes	Buttonholes and eyelets omitted, added, not clean cut or securely caught in fabric, not specified type, not specified location. Buttonhole color not as specified
Webbing or tape	Any hole, cut, tears or smash. Not firmly and tightly woven, edges frayed or scalloped Multiple floats Abrasion mark, slub, or broken end or pick.

	Cut ends of webbing raveling, not smooth. Not continuous. Ends not finished to prevent raveling
Pocket Flaps	Pocket flap not completely covering pocket opening. Not positioned as specified
Fastener Tape	Hook and pile not applied as marked, missing Hook tape crushed, affecting closure Hook and loop out of alignment by more than 1/8 in. Stitching within 3/16 in. of selvage edge. Color not specified
Hardware	Broken or malformed, failing to serve intended purpose, burr or sharp edge Finish not as specified; partial or total Color not as specified. Any required component improperly installed causing failure to serve intended purpose Not assembled as specified Size or type not as specified
Snap Fasteners	Any fastener not functioning properly (i.e, fails to snap closed, provide a secure closure or to open freely). Clinched excessively tight, cutting adjacent material Clinched loosely, permitting any component to rotate freely, and or can be expected to become detached during use. Incorrect style More than 3 splits in eyelet or button barrel Misalignment of male and female components so that flap does not lie flat and evenly Finish omitted or not as specified Color not as specified. Note: snap fasteners will be snapped and unsnapped twice to determine whether parts or fasteners separate freely and also effect a secure closure. Incomplete roll of button or eyelet tube is evidence of insecure clinching.
Eyelets	Omitted, misplaced, improper size, not spaced per pattern

	Clinched excessively tight, cutting adjacent material Insecurely clinched to a degree that grommet or eyelet may be detached from materials Washer installed on incorrect side of material Eyelet barrel split Grommet off center by more than ¼ in.
Bartacks	Bartacks or backtacks missing, insecure, misplaced, not specified size, stitches loose or broken, bartack / backtack not serving intended purpose, run-off
Binding	Loosely applied; exposed or non-exposed raw edge of material. Ends of binding not caught in seams. Raw edges
Component Part	Component part omitted, distorted, full, tight, or twisted; any part caught in any unrelated stitching. Fullness creating unwanted permanent fold, pleat, or crease in fabric, affecting appearance or serviceability.
Shade	Shade not as specified Shade variation within a part or between parts
Cleanness	Spot, stain, excessive thread ends not trimmed or removed, odor, affecting appearance or serviceability
Labels	Omitted, incorrect, illegible, not attached where specified; bar-codes omitted, not readable by scanner; human-readable interpretation (HRI) omitted or illegible; bar code not visible on folded, packaged item; bar code attachment causes damage to the item.
Packaging	Not packaged in accordance with the contract or purchase order. Spare side adjustment hardware missing.

National Stock Numbers

Nomenclature with part number in Parenthesis	NSN
MODULAR TACTICAL VEST, COMPLETE	
XSMALL (SAC-XS-COMP-COY)	8470-01-547-5919
SMALL (SAC-S-COMP-COY)	8470-01-547-5950
MEDIUM (SAC-M-COMP-COY)	8470-01-547-5938
LARGE (SAC-L-COMP-COY)	8470-01-547-5949
XLARGE (SAC-XL-COMP-COY)	8470-01-547-5954
XXLARGE (SAC-XXL-COMP-COY)	8470-01-552-3939
XXXLARGE (SAC-XXXL-COMP-COY)	8470-01-552-9085

MODULAR TACTICAL VEST, OUTERSHELL	
XSMALL (SAC-XS-COY)	8470-01-548-2263
SMALL (SAC-S-COY)	8470-01-548-2868
MEDIUM (SAC-M-COY)	8470-01-548-2890
LARGE (SAC-L-COY)	8470-01-548-2895
XLARGE (SAC-XL-COY)	8470-01-548-2898
XXLARGE (SAC-XXL-COY)	8470-01-522-8983
XXXLARGE (SAC-XXXL-COY)	8470-01-552-9088
MODULAR TACTICAL VEST, BACK BODY	
XSMALL (SACC-BB-XS-COY)	8470-01-548-1969
SMALL (SACC-BB-S-COY)	8470-01-548-1974
MEDIUM (SACC-BB-M-COY)	8470-01-548-1976
LARGE (SACC-BB-L-COY)	8470-01-548-1980
XLARGE (SACC-BB-XL-COY)	8470-01-548-1988
XXLARGE (SACC-BB-XXL-COY)	8470-01-552-9502
XXXLARGE (SACC-BB-XXXL-COY)	8470-01-552-9510
MODULAR TACTICAL VEST, FRONT BODY	
XSMALL (SACC-FB-XS-COY)	8470-01-548-1992
SMALL (SACC-FB-S-COY)	8470-01-548-1995
MEDIUM (SACC-FB-M-COY)	8470-01-548-2097
LARGE (SACC-FB-L-COY)	8470-01-548-5783
XLARGE (SACC-FB-XL-COY)	8470-01-548-5828
XXLARGE (SACC-FB-XXL-COY)	8470-01-552-9292
XXXLARGE (SACC-FB-XXXL-COY)	8470-01-552-9305
MODULAR TACTICAL VEST, CUMMERBUND	
X-SMALL/SMALL (SACC-CB-XS/S-COY)	8440-01-548-1501
MEDIUM (SACC-CB-M-COY)	8440-01-548-1507
LARGE/XLARGE (SACC-CB-L/XL-COY)	8440-01-548-1512
XXLARGE/XXXLarge (SACC-CB-XXL/XXXL-COY)	8440-01-548-1504
MODULAR TACTICAL VEST, CUMMERBUND WITH GROMMETS	
X-SMALL/SMALL (SACC-CBG-XS/S-COY)	8440-01-548-1840
MEDIUM(SACC-CBG-M-COY)	8440-01-548-1843
LARGE/XLARGE (SACC-CBG-L/XL-COY)	8440-01-548-1845
XXLARGE/XXXLARGE (SACC-CBG-XXL/XXXL-COY)	8440-01-548-1841
MODULAR TACTICAL VEST, PULL CABLE	
XSMALL/MEDIUM (SACC-PC-XS/M-COY)	8465-01-548-2488
LARGE/XLARGE (SACC-PC-L/XL-COY)	8465-01-548-2604
XXLARGE/XXXLARGE (SACC-PC-XXL/XXXL-COY)	8465-01-548-2592
MODULAR TACTICAL VEST, COLLAR/YOKE ASSEMBLY	
XSMALL/SMALL (SACC-CLR-XS/S-COY)	8470-01-548-2641
MEDIUM (SACC-CLR-M-COY)	8470-01-548-2647

LARGE/XLARGE (SACC-CLR-L/XL-COY)	8470-01-548-2810
MODULAR TACTICAL VEST, BUNGEE AND BARREL LOCK (SACC-BBL-COY)	8305-01-548-2481
MODULAR TACTICAL VEST, ADAPTOR (SACC-ADP-COY)	8465-01-548-2253
MODULAR TACTICAL VEST, STOCK STOP (SACC-SS-COY)	8465-01-548-2836
MODULAR TACTICAL VEST, MEDEVAC STRAP (SACC-MVS-COY)	8465-01-547-9831
MODULAR TACTICAL VEST, THROAT GUARD	
XSMALL-MEDIUM (SACC-TG-XS/M-COY)	8470-01-548-2940
LARGE/X-LARGE(SACC-TG-L/XL-COY)	8470-01-549-3125
MODULAR TACTICAL VEST, SIDE PLATE HOLDER (SACC-SP-COY)	8465-01-548-2847
MODULAR TACTICAL VEST, SIDE SOFT ARMOR INSERTS (SACC-SAI-COY)	8470-01-548-1499
MODULAR TACTICAL VEST, HIP PADS (SACC-HP-COY)	8415-01-548-9096
MODULAR TACTICAL VEST, CUMMERBUND STOP STRAP (SACC-CSS-COY)	8465-01-548-9556
MODULAR TACTICAL VEST, GROIN PROTECTOR ASSEMBLY	
X-SMALL - MEDIUM (SACC-GPA-XS/M-COY)	8470-01-465-0872
LARGE/X-LARGE (SACC-GPA-L/XL-COY)	8470-01-465-0881
MODULAR TACTICAL VEST, GROIN PROTECTOR OUTERSHELL	
X-SMALL - MEDIUM (SACC-GPO-XS/M-COY)	8470-01-465-1098
LARGE/X-LARGE (SACC-GPO-L/XL-COY)	8470-01-465-1100
MODULAR TACTICAL VEST, GROIN PROTECTOR BALLISTIC INSERT	
X-SMALL - MEDIUM (SACC-GPBI-XS/M-COY)	8470-01-465-1763
LARGE/X-LARGE (SACC-GPBI-LG/XL-COY)	8470-01-465-1765
MODULAR TACTICAL VEST, SPINE ARMOR	
X-SMALL - SMALL (SACC-SPA-XS/S-COY)	8470-01-549-2438
MEDIUM/LARGE(SACC-SPA-M/L-COY)	8470-01-549-2476
X-LARGE (SACC-SPA-XL-COY)	8470-01-549-2475
MODULAR TACTICAL VEST, FRONT BODY INSERT	
XSMALL (SACC-FAI-XS-COY)	8470-01-549-1306
SMALL (SACC-FAI-SM-COY)	8470-01-549-1309
MED(SACC-FAI-MD-COY)	8470-01-549-1311
LARGE (SACC-FAI-LG-COY)	8470-01-549-1313
XLARGE (SACC-FAI-XL-COY)	8470-01-549-1317
XXLARGE (SACC-FAI-XXL-COY)	8470-01-552-9499
XXXLARGE (SACC-FAI-XXXL-COY)	8470-01-552-9309

MODULAR TACTICAL VEST, BACK BODY INSERT	
XSMALL (SACC-BAI-XS-COY)	8470-01-549-1534
SMALL (SACC-BAI- SM-COY)	8470-01-549-1936
MEDIUM (SACC-BAI-MD-COY)	8470-01-549-1944
LARGE (SACC-BAI-LG-COY)	8470-01-549-1969
XLARGE (SACC-BAI-XL-COY)	8470-01-549-1973
XXLARGE (SACC-BAI-XXL-COY)	8470-01-552-9316
XXXLARGE (SACC-BAI-XXXL-COY)	8470-01-552-9493
MODULAR TACTICL VEST REPAIR KIT (SACC-RK-COY)	8470-01-552-2467
Repair Kit Components	
Buckle 1-1/2”	8315-01-552-2379
Cummerbund Stop Strap (SACC-CSS-COY)	8465-01-548-9556
Bungee Cord 24”	8305-01-552-2463
Quick Release Adapter (SACC-ADP-COY)	8465-01-548-2253
MODULAR TACTICAL VEST X-Small Side SAPI Carrier (SACC-XSSP-COY)	8470-01-552-2432

New Equipment Training Modular Tactical Vest (MTV) Instructor Guide

TERMINAL LEARNING OBJECTIVES

Explain the fundamentals of body armor and the two armor systems included in the MTV (Hard Armor Plates and Soft Ballistic Inserts).

Demonstrate the proper procedures for assembling, wearing and doffing the Modular Tactical Vest.

Demonstrate the proper procedures for caring for the Modular Tactical Vest.

ENABLING LEARNING OBJECTIVES

Explain the function of armor and the basics of how armor systems defeat ballistic threats.

Explain the two armor systems (hard and soft armor) and how they function together.
Discuss the features of the MTV.
Demonstrate the assembly procedures for MTV and adjusting the fit.
Demonstrate the procedures for adjusting the hard armor plate for proper positioning.
Demonstrate the procedures for doffing the MTV in an emergency situation.
Discuss the safety concerns for the MTV.
Explain the procedures for cleaning, storing, and transporting the MTV.
Explain the procedures for inspecting and conducting repairs to the MTV.

Commercial Manual (MTV)

Inform class that there is a training aid (Kwikpoint) located inside the rear SAPI plate pocket. This Kwikpoint instruction card demonstrates the assembly procedures, use and care, and other pertinent info for the MTV.

ELO# 1. **Explain the function of armor and the basics of how armor systems are categorized.**

It is important to understand the function of armor and how this armor can defeat ballistic threats if worn and maintained properly.

The primary function of Body Armor is to protect the wearer from ballistic threats. Ballistic threats can be either fragmentation, as from bursting munitions, or projectiles fired from handguns or rifles. Different types of armor are required to defeat the various threats and their associated velocities.

There are several methods to categorize ballistic threats and the armor required to defeat them. Most recognized is the National Institute of Justice (NIJ) Armor Rating System. This system was developed mainly for the Law Enforcement Community and has little application to the threats facing the US military. Most threats listed in the NIJ system are handgun threats and do not encompass any bursting munition threats such as IED's, hand grenades, or mortar fire. In response to the needs of the US military, most armor is procured based on specifications built around the Defense Threat Reduction Agency (DTRA) models of worldwide arms proliferation. These threats are considered when developing armor for today's military.

ELO# 2 Explain the two armor systems and how they function together.

Instructor note: Instructor will have a demo of each component. It is important for the class to be able to distinguish between SAPI and ESAPI for example.

The armor you are issued is a combination of two primary systems. The first system component is the soft ballistic inserts. The second system component is the Hard Armor Inserts.

The soft armor inserts of your body armor are designed primarily to defeat fragmentation threats but also is capable of defeating 9mm handgun threats as well. The soft armor inserts are developed using ballistic fabric such as Kevlar KM2, Twaron, and SpectraShield.

The hard armor inserts, also known as SAPI (Small Arms Protective Inserts), provide protection up to NATO 7.62mm M80 ball. Newly developed E-SAPI (Enhanced Small

Arms Protective Inserts) can provide protection up to 7.62mm APM2, armor piercing rounds. Also recently developed and fielded is the Enhanced Side SAPI, this 6X8" plate will stop 7.62mm APM2. These plates are developed using a ceramic core backed with a pressed ballistic fiber backing.

NOTE: These hard armor inserts must be worn in conjunction with the above listed soft armor inserts in order to be effective. The hard armor inserts will not provide sufficient protection when worn alone.

ELO #3. Discuss the features of the MTV.

Instructor note: Have the students place their MTV in front of them so they can follow along with the features.

Side Opening Vest. At first glance you will notice that the MTV is a side opening vest. Your current issue OTV is a front opening vest. A side opening vest eliminates the chance of the vest falling open due to heavy loads carried on the vest in conjunction with worn out Velcro closures. The side opening vest also eliminates the possibility of a gap in armor coverage.

Integrated/Adjustable Side Plate Pockets. You will also notice that the side plate pockets are integrated into the cummerbund so that they will not become separated from the vest. These pockets are also adjustable. After deciding the exact position for each Side SAPI pocket they can be attached in the desired location and secured with the strap sewn onto the cummerbund. This also provides a redundant system of keeping the pocket PERMANENTLY attached to the vest. Each pocket can be shifted from side to side and/or up and down. This enables the user to adjust the plate pouch to their needs.

Quick Release Mechanism. The MTV is equipped with a quick release handle that enables the user to quickly doff the vest in an emergency situation. This quick release handle can be mounted on the left or right side and can be mounted at the top or the bottom of the cummerbund.

Adjustable Shoulder Straps. The adjustable shoulder straps enable the user to manipulate the vest up or down based on user preference. This adjustment is limited due to optimal placement of the front and rear SAPI plates. Also each vest has a stop sewn into the shoulder strap. This stop prevents the Marine from over adjusting his/her vest and opening a gap in the soft armor.

Increased Area of Coverage. If you will notice the new MTV has additional kidney/spine ballistic protection in the back of the vest. This additional protection significantly increases the area of coverage for the MTV versus the Outer Tactical Vest. This armor panel can be removed and the pocket stored when not in use.

f. Communications routing channels. Located along the top and side edges of the external front and rear SAPI plate pockets, you will find these channels. They are intended to be utilized for concealing and routing any communication lines or other tubes or hoses that may be associated with equipment mounted on the MTV.

IMPORTANT: at no time should communication lines be connected to the front and the back of the vest at the same time.

IMPORTANT: Front and Back ESAPI plates should always be worn as high as possible on the Marines body. The correct position of the front plate is NO MORE than 1" below the Sternal notch (where the collar bones join…front top of chest).

ELO #4 Demonstrate the assembly procedures for MTV and adjusting the fit.

Ensure that you have all of the correct piece/parts before beginning assembly.

Use the enclosed parts list to verify all parts are available.

Request students to immediately notify instructors if any parts are missing

Cummerbund Assembly.

Locate all the parts required for the cummerbund.

Place the cummerbund with the outside face down on the ground with the ends with the three tabs inboard facing each other. The side plate pocket openings should have the opening to the top.

Place the "3 hole" adapter over the white nylon tabs.

Pull the white tables through the grommets on the "3 hole" adapter and weave the cable through all three white tabs.

Determine where you want to locate the quick release handle **(I.E., TOP OR BOTTOM PLACEMENT)** and begin to thread the cable through the grommet and maneuver the cable to the corresponding opposite grommet. The cable should exit the grommet nearest the three tab side of the cummerbund.

Place excess cable through the nearest grommet so that it is not exposed.

Lace the bungee cord through one side of the cummerbund and through the "3 hole" adapter

Insert Side ESAPI
Insert Hard Armor (side ESAPI) and soft armor into side plate pocket inserts
Ensure ESAPI strike face at enemy and that soft armor is behind Side ESAPI
With Hard Plates and Soft Armor inserted into the side plate pocket inserts, slide the inserts into the cummerbund.

Close cummerbund tabs over the side plate pocket inserts.

If necessary attach hip pads

Insert Soft Armor.

Locate the front panel. Insert the front soft ballistic insert with the label(s) facing inside closest to the body. Ensure the panel lays flat and attaches to the Velcro sewn into the carrier. Close the Velcro opening on the vest.

Locate back panel.

Insert rear soft ballistic insert with the label facing inside closest to the body. Ensure the panel lays flat and attaches to the Velcro sewn into the carrier. Close the Velcro opening on the vest.

Locate and insert the groin ballistics in their appropriate place. Insert with label facing the body.

Locate and insert the rear drop down armor (if necessary). Insert with labels facing the body.

NOTE: Remember that the soft armor must be inserted behind the hard armor insert to be effective.

Join the front and back halves of the MTV.

Click fastex buckles on the left and right side of the MTV at the shoulders.

Position Velcro on top of shoulder pieces so that the neckline is continuous.

Insert Front and Back ESAPI plates

Locate flap on front and back of MTV (exterior pockets).

Insert ESAPI plates into the exterior pockets.

Adjust fit of front and back

Using the buddy method, place the MTV over your head.

Determine if shoulder adjustments are necessary.

NOTE: Front ESAPI plate position should be NO MORE THAN 1 inch below the Sternal Notch (OR EVEN WITH THE COLLARBONE, FAILURE TO ENSURE PROPER PLACEMENT MAY RESULT IN DEATH). ******THIS POINT NEEDS TO BE EMPHASISED MANY TIMES THROUGH THE TRAINING SESSION. ADDITIONALLY, NEED TO STRESS THAT SMALL UNIT LEADERS ARE RESPONSIBLE FOR ENSURING PROPER FIT/PLACEMENT OF PLATES.***********

Have your buddy adjust your shoulder straps by loosening the Velcro and either moving the vest up or down depending on your need. Be sure to adjust both sides evenly.

Insert Cummerbund

Locate cummerbund pocket flaps on the rear of the MTV, Unsnap the bottom portion of the flap.

Open the entire back cummerbund pocket, by lifting the top flap and then the bottom flap.

Place cummerbund directly on top of the opened pocket, ensuring that the quick release handle is located in the appropriate position.

Ensure that the side plate pockets are in the upright position.
Close bottom flap panel over the cummerbund.
Reattach the top flap be securing Velcro and snap in place.
Close both sides of the cummerbund.
Determine if adjustment is necessary.
Have your buddy loosen or tighten the bungee cord in the center of the cummerbund to achieve proper fit.

Cut and remove excess bungee. ENSURE the Marines leave 4-6 inches for adjustment.

Position the cummerbund stops in the proper locations to prevent the cummerbund from sliding through the channel.

Attach Cummerbund stops to the cummerbund.

Affix the Yoke/Collar Assembly into the neck opening of the MTV.

Ensure that the rear of the Yoke/Collar Assembly is centered properly.
Ensure that the yoke is lying flat around the inside of the neck opening.
Utilize tab attachments to properly position the yoke assembly.
Affix throat protector to the yoke/collar assembly.
Check Fit of MTV
Ensure MTV has no gap at side of Marine
Ensure ESAPI plates are worn as high as possible on the neckline.

Note: Failure to wear ESAPI plates as high as possible may result in death.

ELO #5 Demonstrate the procedures for adjusting the hard armor plate positioning.

The hard armor plates can be adjusted to fit the wearer. The front and back ESAPI plates can be adjusted up and down. The Side ESAPI can be adjusted up, down, and side to side.

To adjust the front and back ESAPI plates the user should utilize the shoulder strap adjustment feature. Simply unhook the Velcro tabs and adjust the fitting so that the ESAPI PLATES are positioned correctly on the body. The correct positioning should be no more than **one inch (1")** below the sternal notch **(OR EVEN WITH THE COLLARBONE, FAILURE TO ENSURE PROPER PLACEMENT MAY RESULT IN DEATH).** The rear SAPI plate should be level with the front plate when viewed from the side.

NOTE: The plate positioning is critical. If the plates are not positioned correctly, serious injury could result.

NOTE: The shoulder straps have a built in stop mechanism that will not allow the user to adjust the ESAPI that will achieve more than a one inch gap below the sternal notch. This stop also maintains the overlap in ballistic material required for the shoulder region.

b. To adjust the Side ESAPI plates the user should loosen the top flap, exposing the Side Plate Pouches. The pouches can be repositioned by disengaging the Velcro inside the

cummerbund opening. Once the Velcro is disengaged, position the pouch in the appropriate position. Once positioned correctly, ensure the Velcro is engaged and re-secure the top flap.

NOTE: NEED TO INSTRUCT PROPER PLACEMENT OF SIDE-SAPIs – PROPER PLACEMENT IS AS HIGH IN THE ARMPIT (AXILLARY) REGION AS THE MARINE CAN COMFORTABLY WEAR. ADDITIONALLY, SIDE-ESAPI NEEDS TO BE CENTERED IN THE SIDE OF THE TORSO. AGAIN, NEED TO STRESS THAT IMPROPER PLACEMENT MAY RESULT IN DEATH.

NOTE: Remember, the soft ballistic insert must remain behind the hard armor plate in order to be effective.

ELO #6 Demonstrate the procedures for doffing the MTV in an emergency situation.

Doffing the MTV is a fairly easy sequence, but since there is usually a heavy load associated with armor platforms, injury could occur if these steps are not properly followed.

The Vest is designed to require two (2) steps to quickly doff. This is intended as a safety back up. There is no way to accidentally pull the cable and have the entire vest fall away.

a. In an emergency situation the first step it to simply pull the quick release handle. This is accomplished by:

Release the safety by pulling the Velcro tab down.
Insert thumb into quick release loop.
Pull quick release handle across the body in a single rapid motion.
The cummerbund will disengage at the rear of the vest.

FOLLOWED BY:

Reaching up and across the body to the top of the shoulder.
Unsnap the Fastex quick release buckle.
Grasp the front shoulder portion of the MTV and pull away from body.

WARNING

Failing to detach the Fastex buckle before trying to pull away the vest will result in the full load of the MTV suddenly shifting up to the neck area causing serious neck, back, or spinal cord injuries.

b. There is a second method to quickly doff the vest when time and or urgency is not critical. This method is best utilized for casualty aid in a secure area. Using this method the MTV can be reassembled in a matter of seconds versus a quick release doff as described in (a) above.

Simply lift up on the front flap in the lower center of the MTV.
Release one side of the Velcro cummerbund.
Release the Fastex buckle on the same side that you released the cummerbund.
Pull MTV open.

NOTE: There is also a casualty evacuation strap located in the kangaroo pocket above the lower center flap in the front of the MTV. If medical personnel utilize the quick release method of doffing the vest in order to provide aid, the casualty evacuation strap can be utilized to temporarily close the MTV back to a protective state. Simply route the strap under the casualty and close the MTV. Then weave the end of the strap through the buckle to close.

NOTE: NEED TO ALSO STRESS THE IMPORTANCE OF NOT "BRIDGING" GEAR ACROSS THE SHOULDERS OR ON THE SIDES OF THE CUMMERBUND BECAUSE THIS WILL INTERFERE WITH THE QUICK RELEASE SYSTEM.

ELO #7 **Discuss the safety concerns for the MTV.**

There are Three risks (2 medium, 1 high) associated with the operation of the MTV.

The first safety concern has previously been mentioned and addresses - failure to detach the Fastex buckle before pulling away the vest in an emergency doff will cause the load of the vest to be shifted up to the neck and may result in serious neck, spine, or back injuries. Hopefully Marines will never have to use the emergency "quick-disconnect" on the MTV, but they all need to know how and get to feel comfortable doing the procedure quickly and in the proper in the emergency doffing sequence.

Again, using the quick release is easy, but since there is usually a heavy load associated with armor platforms, and this load swings down from the body (due to gravity) serious injury could occur if the steps are not followed properly.

WARNING

Failing to detach the Fastex buckle when doffing the MTV will result in the load of the vest transferring up to the neck area causing serious neck, back, or spinal cord injuries. ALWAYS ENSURE THE FASTEX BUCKLE IS DETACHED WHEN

DOFFING THE VEST....in routine operations and in emergency doffing operations.

The second safety concern associated with the MTV is proper placement of the ballistic systems. Always ensure that the soft ballistic panels for the Side Plate Pockets are located behind the Hard Armor Insert. The soft armor inserts should be located between the body and the hard armor plate. Also ensure that the other soft armor ballistic inserts are inserted in the proper manner with the labels facing the body. Remember to check the proper positioning of the front and back ESAPI plates. This can be manipulated by utilizing the adjustable shoulder straps.

WARNING

FAILURE TO PLACE THE BALLISTIC INSERTS INTO THE MTV CAN CAUSE SERIOUS INJURY OR DEATH IF STRUCK BY A BALLISTIC THREAT.

WARNING

ANY "BRIDGING" OF GEAR ACROSS THE SHOULDERS OR ON THE SIDES OF THE CUMMERBUND WILL INTERFERE WITH THE QUICK RELEASE SYSTEM. IF GEAR IS BRIDGED THE MTV WILL NOT RELEASE AS DESIGNED.

Always stage/ store an MTV on its back with the ballistic panels flat. Do not store the MTV with the cummerbund closed. This prevents the front and back ballistic panels from becoming damaged on the sides, especially in hot, humid environments.

Remove all hard armor inserts and store them on a stable platform. Curved side up and stacked one on top of the other, no higher than 10 plates high.

c. Transporting. For transportation inside containers or cargoholds:

ELO #8 **Explain the procedures for cleaning, storing, and transporting the MTV.**

Instructor's Note: Point out to the students that all of this information can be found on their individual Wear-Care Card that comes included with each issued MTV.

Hold up a copy of this Wear-Care Card and Pass around if necessary.

a. Cleaning

For best cleaning results, disassemble MTV components before cleaning.

Remove dirt and grease from the outershell by brushing with warm water and mild soap. Use a brush with semi-rigid plastic bristles.

DO NOT use a brush with metal bristles.

Do not use "CLP", "Dip-tank" solvent or any other "lubricant" to clean or coat the vest. Employment of NBC Deconing solution (concentrated bleach) will spot and eventually weaken the cordura fabric. Continual use of this solution on the pack will eventually cause the material to fail.

DO NOT use chlorine bleach. DO NOT put in washing machine. Hang dry. DO NOT put in drying machine, the oven, or subject to the direct exhaust from mechanized vehicles.

DO NOT dry clean.

DO NOT press. For better results, components may be disassembled before cleaning. Re-assemble when thoroughly dried.

Never submerge ballistic inserts into water for cleaning. Always use a sponge or rag, slightly damp, to wipe down ballistic inserts. Never put ballistic inserts into a washing machine. Never leave ballistic inserts in the direct sunlight for prolonged periods of time.

Remove from direct sunlight or UV sources. Prolonged periods will deteriorate the material and cause excessive fading.

Water exposure. After being exposed to water, the vest should be dried thoroughly before storage. When drying ballistic panels lay flat on the ground and occasionally flip over. Prolonged exposure to water will accelerate deterioration of the fabric.

11. DO NOT USE IN CHLORINATED SWIMMING POOL FOR TRAINING. THIS WILL RESULT IN A DETERIORATION OF THE SOFT ARMOR.

b. Storing. For all storage procedures, keep the vest out of direct sunlight and extreme heat sources; keep the vest dry. While continued use will take its toll on the vest over time, to help extend the life of the vest, observe the following storage procedures.

Box unloaded MTV's backside facing down, stacking no higher than 10 vests per stack, alternating head to foot. MTV's can be stacked 10 high, but must be alternated using the "head-foot" method.

2. Hard Armor inserts should be packaged separately and boxed. 10 Plates per box and loaded vertically with padding in between each plate.

ELO #9 Explain the procedures for inspecting and conducting repairs to the MTV.

The MTV vest has a commercial warranty covering the outershell against manufacturer's faulty workmanship or material deficiencies. However, some MTV's will experience minor breakages over their life times. While most, if not all repairs to the MTV will be done at the point of issuance either the CIFs or, in the case of reserve centers, independent supply sections using capabilities/equipment resident to these sites. Some "field expedient" repairs can be made on the system. For repairing failures in the outershell material or stitching, use a #69 bonded nylon or a higher thread. Additionally, use Seam Grip™, Free Sole™, ShooGoo™ or any other urethane-based sealer to repair tears in the fabric. If these products are not available, use '100mph tape'. Duct tape should only be used if nothing else is available. These are temporary repairs that will need to be properly addressed when facilities become available. Repairs should be left intact when returning the MTV.

If buckles break, replace them with the same type of buckle. If a buckle that is sewn onto the MTV breaks, field expedient bucks that do not require sewing are available.

NOTE: Never try to repair ballistic inserts (Hard or Soft). If ballistic inserts are damaged, replace with newly issued inserts or a completely new MTV. Use of damaged ballistics can result in serious bodily harm or death.

NOTE: Prior to the students leaving class, ensure all students have tried on their MTV, have all the pieces of their MTV intact, have the correct sized vest, and have a copy of the instruction card.

NOTE: THE MANUFACTURER OF THE MTV HAS SET UP A WEB BASED PORTAL TO ALLOW MARINES TO DOWNLOAD TRAINING INFORMATION, REQUEST TRAINING AND TO SEE WHERE FUTURE TRAINING WILL BE HELD. TO ACCESS THIS SITE GO TO:

WWW.BODY-ARMOR.COM

CLICK ON THE USMC TAB TO VIEW THIS MATERIAL.

NOTE: TWO HELP DESKS HAVE BEEN SET UP (ONE WEST COAST AND ONE EAST COAST) THESE HELP DESK CAN BE CONTACTED FOR ANY REASON (TRAINING REQUEST, PROBLEMS, QUESTIONS)

CONTACT INFORMATION FOR THESE HELP DESKS ARE:

LeJeune

Tactical Applications Group POC: Lisa Quinlan or Mike Atoyan 1941 Lejeune Blvd.

Jacksonville, NC 28546

(910)938-4529-Office

Toll Free: 866-391-6110
Local: 910-687-6033

Pendleton

POC: Mike Atoyan
3355 Mission Avenue Suite #222
Oceanside, CA 92054
Toll Free: 866-391-7385
Local: 760-994-4842

Review

In review the MTV is not only a piece of protection this is a tool to be used by the Marine that will allow the Marine to react better to any given mission. Since this gear is more advanced than its predecessors it is necessary to train with the system. It is very important that the first time a Marine uses the quick release is not when a Marine needs to use this feature to save his/her life.

It is necessary for the Small unit leaders of the Marine Corps to train their Marines with this new gear and inspect their gear frequently to ensure proper form, fit and function. Failure to carry out these steps may result in Marines being killed or seriously injured. Failure to train individual Marines will ultimately cause Marines to be killed. No matter how good a system is if the user is not trained and understands the capability, the full value of the system will never be achieved**.**

MTV Do's and Don'ts

DO

- Always ensure proper fit with neckline of the vest at collarbone. Failure to do heed warning may result in death.
- Always install ESAPI strikeface toward enemy and soft armor against body
- ESAPI and soft armor must be used together

- Always loosen one side of throat guard when traveling over water
- Ensure casualties is covered in body armor during battle, triage and medevac

Don'ts

- Do not bridge front and rear carrier at shoulders with communication cable, hydration tube or other gear
- Do not bridge cummerbund and back carrier flap with MOLLE gear (ie pouches)
- Do not leave gaps at side of vest under cummerbund
- Do not fit front ESAPI plates more than one inch (1") below collarbone
- Do not use MTV in chlorinated swimming pool
- Do not attempt to repair armor. Use of damaged armor can result in serious injury or death