

# Mine Resistant Ambush Protected (MRAP) All-Terrain Vehicle (M-ATV) Underbody Improvement Kit (UIK) Equipped

## Emergency Rollover/Egress Procedures

MRAPs are extremely heavy and have a high center of gravity. Rollovers often occur due to road collapse. Use extreme caution when operating on single-lane or steeply crowned roads, those with soft or no shoulders, bridges or roads bordering water, and or washouts around culverts. Rollover and egress drills must be practiced regularly in daylight and limited visibility conditions.

### SECTION I – PREVENTING ROLLOVERS AND ROLLOVER-RELATED INJURIES

1. **USE RESTRAINT SYSTEMS - SURVIVE THE ROLLOVER!** Always wear your seatbelt. In the event of an accident or explosion, seatbelts can prevent users from being thrown around in the vehicle mitigating injury.

#### WARNING

**THE M-ATV UIK JANKYL SEAT HEADREST IS DESIGNED TO PREVENT EXTENSION OF THE NECK DURING A BLAST OR ROLLOVER. IT MUST BE INSTALLED AT ALL TIMES DURING OPERATION.**

2. **SLOW DOWN.** Speed is the factor over which the driver can exercise the most control. Faster speeds decrease driver response times and increase the potential for a rollover. This is especially true when maneuvering through curves, on steep slopes, or dealing with sudden traffic situations.

3. **MAINTAIN CONTROL OF THE VEHICLE - AVOID PANIC.** When a MRAP goes off a road, it can overturn if the operator overcorrects or jerks the steering wheel. Don't panic - if you drive off the roadway, gradually reduce speed and ease the vehicle back onto the roadway at a safe speed – NEVER jerk the steering wheel as this is a significant source of rollovers. If the vehicle is traveling at a significant speed, it may even be safer to continue in the path of travel off the road until the vehicle has slowed down enough to safely return to the road.

4. **SECURE THE LOAD.** All equipment inside the vehicle must be secured IAW the unit load plan. Load and secure heavier items low in the M-ATV. Unsecured loads can become deadly projectiles. Improperly secured loads can change a vehicle's center of gravity and its stability. Do not stow material under seats. Under-seat area is not designated for stowage, and improper use may lead to seat failure during a blast event. Failure to comply will result in death or injury to personnel.

5. **MAINTAIN THE VEHICLE.** It is critical that the M-ATV be in good operating condition before starting your mission. Perform Preventive Maintenance Checks and Services (PMCS). Pay particular attention to tire condition and air pressure. Ensure the Central Tire Inflation System (CTIS) is set to the type of terrain you are operating in. Worn and improperly inflated tires increase risk of rollover. Refer to the operator's manual for proper tire inflation pressures and speeds.

6. **WORK AS A TEAM TO IDENTIFY HAZARDS.** While vehicle commanders must assist the driver in identifying road hazards such as road obstacles, potholes and soft shoulder roads, all crew members must work as a team and let the driver know what is to the left, right, rear, and overhead. Know and cover the M-ATV's dead space/blind spots. When visibility is restricted and the tactical situation permits, use ground guides.

7. **COMMUNICATE.** Use the vehicle intercom system to pass information to the driver, but rehearse shouted voice commands and hand signals in case the intercom is inoperative. Transmit road hazard information to all vehicles in the convoy.

8. **COMBAT DOOR LOCKS.** Keep combat locks engaged. Combat door locks keep the enemy out and prevent the doors from opening in the event of an accident or explosion. Know the locations of your combat door lock tool in each M-ATV and rehearse their use. If you have other types of MRAPs in your patrol, know where the combat door lock tool is located for those MRAPs as well.

#### **NOTE**

**Combat locks may slow egress and rescue if the vehicle rolls into water. It may be feasible to ensure combat locks are in the unlocked position prior to fording. Leaders must evaluate this risk during mission planning.**

9. **REHEARSE EGRESS.** Constantly rehearse egress drills as a team. Ensure all personnel fully understand the vehicle's egress points and operation of doors, combat locks, Jankyl seat headrest and gunner hatch. Plan for the worst case scenario; rehearse vehicle evacuation as if only one exit is available. Rehearse cross-cabin egress, both across the cab and front to rear. Body armor and other equipment must be removed when moving from the front of the cab to the rear of the cab or vice versa to egress from the vehicle. This should be identified and practiced during rehearsal. Check your operator's manual for specific procedures for the various configurations and mission loads.

## **SECTION II – ROLLOVER/EGRESS PROCEDURES**

### **WARNING**

**NEVER ATTEMPT TO LEAP FROM A ROLLING VEHICLE. IT MAY ROLL OVER YOU. ENSURE THAT THE VEHICLE HAS STOPPED MOVING BEFORE ATTEMPTING TO EGRESS.**

### **EXECUTE ROLLOVER DRILL**

#### **1. Driver**

- Release the accelerator
- Steer into direction of the roll
- Yell, "Rollover, Rollover, Rollover!"
- Keep hands on the steering wheel with extended and unlocked arms, tuck head and chin into chest and brace for impact.

#### **NOTE**

**If rollover into water is imminent, all crew members yell, "Water, Water, Water!" instead of "Rollover, Rollover, Rollover!"**

### **WARNING**

**CAUTION SHOULD BE USED IN "PULLING GUNNER INTO CAB" BECAUSE INADVERTENT CONTACT WITH QUICK RELEASE MECHANISM COULD DISCONNECT THE GUNNER'S HARNESS FROM THE RESTRAINT SYSTEM'S FLOOR MOUNTED LOWER RETRACTOR.**

#### **2. Vehicle Commander**

- Yells, "Rollover, Rollover, Rollover!"
- Pulls gunner into cab (if applicable / able) avoiding contact with pelican clip release tab
- Tucks head and chin into chest and braces for impact
- Plants feet firmly on the floor while holding onto stationary object

#### **3. Gunner (if applicable)**

- Yells, "Rollover, Rollover, Rollover!"
- Drops down from the hatch into the vehicle
- Tucks head and chin and braces for impact while holding onto stationary object

#### 4. All Personnel

- Yell, "Rollover, Rollover, Rollover!"
- Pull gunner into cab (if applicable / able) avoid contact with pelican clip release tab
- Tuck head and chin into chest and brace for impact
- Plant feet firmly on the floor while holding onto stationary object

#### SEAT BELT CUTTERS

Seat belt cutters can be used in an emergency to cut through seat belts, gunner restraints, clothing, belts, footwear, and RPG nets. After a rollover has stopped, crew members or emergency responders can cut away restraints that have failed to operate properly to allow egress.



#### EMERGENCY EGRESS TOOLS / UNIVERSAL COMBAT LOCK TOOLS

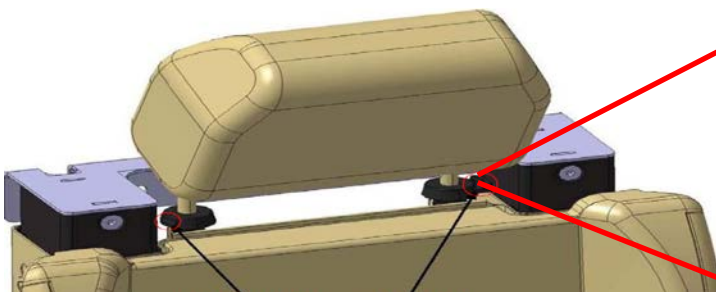
Universal Combat Lock Tool allows you to release any MRAP vehicle's combat locks from outside the vehicle.

- All vehicle occupants must know where and how to operate all door locks, latches, and hatches on their vehicle.
- All vehicle occupants must know where their vehicle egress tool is located and rehearse their use as part of mission preparation.



#### JANKYL SEAT HEADREST

- JANKYL seat headrest can be removed by pushing the release tab on the left side
- The release tab releases the headrest to allow adjustment or removal



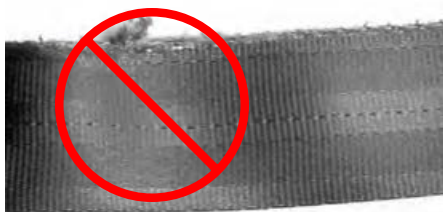
RELEASE  
TAB

## GUNNER RESTRAINT SYSTEM

The Gunner Restraint System (GRS) and Improved Gunner Restraint System (IGRS) are used to prevent the gunner from being ejected from the interior of a vehicle and injured or killed. The systems are designed for quick removal and are designed to be worn on the **OUTSIDE** of the IOTV.

Thoroughly inspect all seat belts and gunner restraint systems for damage before each use.

- Do not use a belt/harness that is cut, frayed, torn, ripped, or otherwise damaged.
- Do not use a GRS belt that has been in any type of accident (even if it shows no signs of damage).



FRAYED



WORN / STRETCHED

## GRS / IGRS COMPONENTS

- GRS is identified by a black tail and a D-ring
- Retrofitted GRS is identified by a tan tail and red lanyard (NSN 2450-01-593-5363)
- IGRS is identified by a tan tail and yellow lanyard (NSN 2540-01-597-6306)

GRS  
ORIGINAL



GRS  
RETROFIT



IMPROVED TAIL STRAP KIT



IGRS



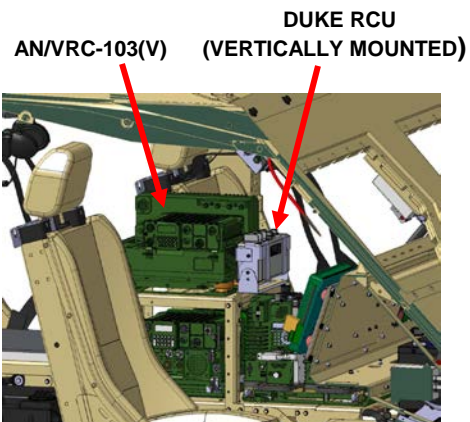
The IGRS has many benefits, including better quick-release connections and improved single-point quick-release components between the harness and retractor. Thus, units should upgrade to full IGRS replacement as soon as possible. The IGRS is not an issued item; units must order it through their supply channels.

### WARNING

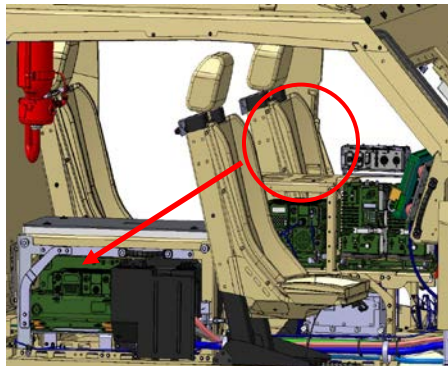
**NEVER MODIFY, DISASSEMBLE, OR ATTEMPT TO REPAIR THESE RESTRAINT SYSTEMS. DOING SO CAN REDUCE THEIR EFFECTIVENESS AND CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH IN AN ATTACK, COLLISION OR ACCIDENT. OCCASIONALLY CHECK RESTRAINT CONNECTION. STEPPING ON THE QUICK-RELEASE LANYARD ACCIDENTALLY COULD DISCONNECT THE GUNNER FROM RESTRAINT WITHOUT HIS/HER KNOWLEDGE.**

## AN/VRC-103 NEW CONFIGURATION

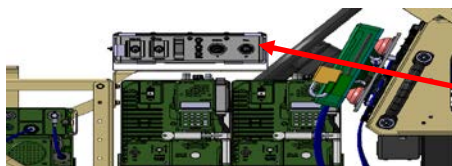
- AN/VRC-103 is relocated between the driver and commander behind rear HVAC



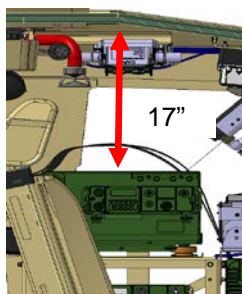
- AN/VRC-103(V) is located between driver and commander
- Army RCU is positioned vertically



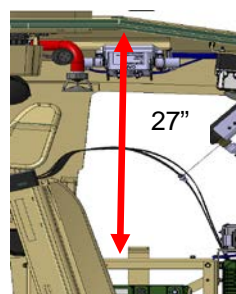
- AN/VRC-103(V) is located behind rear HVAC
- Army RCU is positioned horizontally above AN/VRC-110



DUKE RCU  
(HORIZONTALLY MOUNTED)



OLD CONFIGURATION



NEW CONFIGURATION

- New configuration gives more room for personnel to egress between the driver and commander seats without having to remove combat gear



## **AFTER ROLLOVER HAS STOPPED**

### **1. Driver**

- Shut down engine
- Raise and secure Driver Vision Enhancer (DVE) to stowed position. (If applicable)
- Remove the headrest from the driver's seat (If applicable)
- Remove combat gear before moving from the front of the cab to the rear of the cab or vise versa (If applicable)

### **2. Vehicle Commander**

- Remove the headrest from the commander's seat (If applicable)
- Remove combat gear before moving from the front of the cab to the rear of the cab to egress or vise versa. (If applicable)

### **3. All Personnel**

- Disconnect headsets
- Release seat restraints; use caution if upside down
- If the vehicle is filling with water, immediately seek out the highest point in the vehicle
- Assist the commander and driver with headrest removal (If applicable)
- Remove combat gear when moving from the rear of the cab to the front of the cab to egress or vise versa (If applicable)
- Disengage combat door locks and exit the vehicle

## **WARNING**

**HATCHES AND DOORS ARE HEAVY - SERIOUS INJURY MAY OCCUR IF HATCH FALLS ON PERSONNEL. USE ADDITIONAL PERSONNEL TO ASSIST OPENING HATCHES IF POSSIBLE.**

- Assist other personnel in exiting
- Establish security
- Account for personnel
- Provide first aid
- Account for weapons, ammunition and sensitive items
- Assist in vehicle recovery
- Report mishap to higher headquarters and request help and/or recovery as required

## **NOTE**

**Notify emergency response personnel of any hazardous materials on board.**

## **EMERGENCY RESPONDERS**

- Ensure rescue personnel have a combat lock key with them for the accident vehicle
- If the doors cannot be opened and the likelihood of drowning is high, rescuers must immediately roll the vehicle using all available means to gain access to the gunner's hatch