

Mine Resistant Ambush Protected (MRAP) All-Terrain Vehicle (M-ATV) Common Remotely Operated Weapon Station (CROWS) 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.
- 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 an 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.
- 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. CROWS may somewhat limit a gunner's immediate ability to see around the vehicle, but they still have the greatest vantage point. 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 keys in each M-ATV and rehearse their use. If you have other types of MRAPs in your patrol, have combat door lock keys for those MRAPs as well.

NOTE

Combat locks may slow egress and rescue if the vehicle rolls into water. Leaders must evaluate this risk during mission planning.

9. **REHEARSE EGRESS.** Constantly rehearse egress drills as a crew. Ensure all personnel fully understand the vehicle's egress points and operation of doors, combat locks 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 may have to be removed in order 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.

THE M153 CROWS GUNNER SHOULD:

- Remain as far back from the Split-Screen Display as physically possible in order to reduce the probability and severity of a head impact against the Split-Screen Display.
- Wear their body armor vest and combat helmet while occupying the M153 CROWS gunner's seat in the M-ATV.
- Use the vehicle 5-point seat belt personal restraint system with all the slack taken in from the shoulder straps. This will lower the risk of impacting the screen.
- Remove all non-essential gear from their back (i.e. camelback). Additional equipment on their back could further reduce the clearance between the gunner's head and the Split-Screen Display.

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
- Yells, "Rollover, Rollover, Rollover!"
- Keeps his hands on the steering wheel with extended and unlocked arms, tucks head and chin into chest and braces for impact

NOTE

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

2. Vehicle Commander

- Yells, "Rollover, Rollover, Rollover!"
- Tucks head and chin into chest and braces for impact
- Plants feet firmly on the floor while holding onto stationary object

3. Gunner

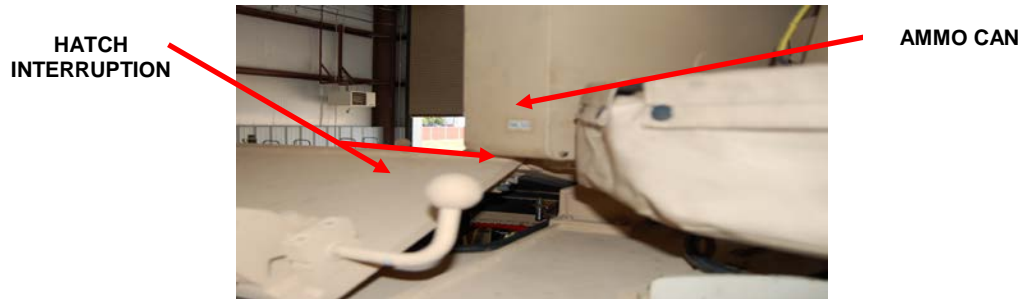
- Yells, "Rollover, Rollover, Rollover!"
- Ensures CROWS weapon system is not in the 8 or 10 o'clock position
- Tucks head and chin into chest and braces for impact while holding onto Fire Control Unit Screen with extended and unlocked arms and feet planted firmly behind base of driver's seat

4. All personnel

- Yells, "Rollover, Rollover, Rollover!"
- Tuck head and chin into chest and brace for impact
- Plant feet firmly on the floor while holding onto stationary object

WARNING

EGRESS IS NOT POSSIBLE FROM THE GUNNER'S HATCH WHEN THE CROWS IS ORIENTED IN THE 8 OR 10 O'CLOCK POSITION. THE AMMUNITION BOX WILL BLOCK THE OPENING OF THE GUNNER'S HATCH



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



AFTER ROLLOVER HAS STOPPED

1. Driver

- Shut down engine
- Raise and secure Driver Vision Enhancer to stowed position. (If applicable)

2. Gunner

- Shut down power to Fire Control Unit
- Removes the gunner's control grip (if applicable)

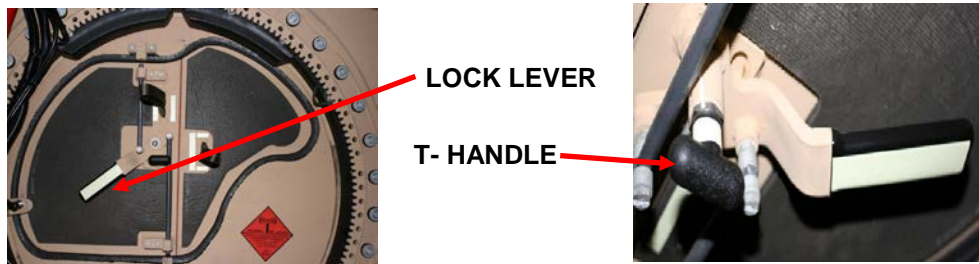
3. All personnel

- 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
- Disengage combat door locks and exit the vehicle
- Assess injuries
- Assist other personnel to exit and secure weapons
- 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 / recovery as required

WARNING

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

TO EGRESS FROM GUNNER'S HATCH WITH CROWS



- Pull down on T- handle located on left side hatch
- Rotate locking lever forward to unlock and release hatches



- Open left-side hatch first and ensure hatch is in the lock position
- Open right- side hatch and ensure hatch is in the lock position

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
- Responders may be required to manually traverse the CROWS out of the 8 or 10 o'clock position using the azimuth release mechanism located at the bottom of the mainframe

TO RELEASE AZIMUTH LOCKING MECHANISM

- Push the Release Arm (1) completely in against the cylindrical frame wall
- Pull the Lock Pin (2) up against the protruding frame wall
- Swing the Release Arm out

