

DID YOU KNOW?

USMC SAFETY & FORCE PRESERVATION



NOV 2011

TACTICAL VEHICLE MISHAPS

FY 2011 was our best year on record for tactical vehicle safety – a 60% decrease compared to the 10-year average. In July we had a M970 Refueler rollover and in October we had two back-to-back tactical vehicle mishaps where we lost or seriously injured Marines due to rollovers: Medium Tactical Vehicle Replacement (MTVR), and an Amphibious Assault Vehicle (AAV).

As we dissect two of the three accidents, it is evident that if our Marines just simply followed the rules and regulations for wearing seatbelts, following the appropriate speed, not over steering, and understanding the vehicle's center of gravity could have possibly saved a Marine's life.

This "Did You Know" will serve as a reminder of the basic convoy standard operating procedures, such as, adhering to the proper interval between vehicles, speed, and leadership.



OVERCORRECTION

- Overcorrection is the act of over steering in reaction to an unexpected event or the loss of control of a vehicle. Normally drivers will panic and jerk the steering wheel, thereby overcorrecting and causing the vehicle to rollover.
- While conducting a resupply mission, SNM lost control of his M-970, Semi-Trailer Refueler, when he exited the highway; causing the vehicle to rollover. The M-970 was carrying a half tank of fuel at the time of the incident, which would have changed the handling characteristics (center of gravity) of the vehicle as the liquid sloshed from side to side and would have impacted the drivers ability to correct the vehicle's direction of travel. The Driver was killed and the A-Driver lost his arm.
- While conducting a resupply mission, SNM lost situational awareness and impacted an earthen berm which resulted in the Driver overcorrecting and causing the MTVR to rollover. Both the Driver and A-Driver were ejected from the vehicle; ultimately resulting in the Driver being fatally crushed. The trail vehicle then ran into the HMMWV that the MTVR was flat towing causing moderate damage to the vehicle.

CONVOY OPERATIONS

- **Convoy Speed.** The normal speed at the lead of the column is 5 to 10 mph below the posted speed limit.
- **Catch-Up Speed.** Is the speed required to regain lost distance between your vehicle and the vehicle you are following. The catch-up speed is 5 to 10 mph faster than the convoy speed but will not exceed the posted speed limit.
- **Convoy Commander/A-Convoy Commander/Serial Commander Inspection.** The final action that should take place prior to a convoy rolling, should be leadership "walking the convoy," ensuring all Marines have the required PPE for the specific mission, are wearing their seatbelts, are alert and mentally prepared for what they might encounter along the planned route.



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CONVOY OPERATIONS (CONT)

- **Vehicle Interval.** Of all the space around your vehicle, the area ahead of the vehicle – the space you are driving into – is the most important. There are two basic types of road marches – Opened Column and Closed Column.
 - Opened Column – Normally used during daylight marches. The distance between vehicles varies, depending on road conditions and weather, but is normally 50 to 100 meters.
 - Closed Column – Usually used for marches in darkness or limited visibility. The distance between vehicles is generally 25 meters.
 - Rules of Thumb
 - For vehicles traveling under 40 mph, you should allow at least one second for every 10 feet of vehicle length (e.g. if you are driving a 50 foot vehicle then, leave 5 second separation) . For vehicles traveling over 40 mph, you should add an additional second (e.g. if you are driving a 50 foot vehicle, then leave 6 second separation).
 - Speedometer multiplier method - Keep a distance in yards that is twice the rate of speed at which you are driving (e.g. 50 yard between vehicles at 25 mph, 80 yards between vehicles at 40 mph).

LESSONS LEARNED

- Properly tying down and storing gear prevented further injuries.
- Marines are always subjected to the inherent risks associated with our profession even though we have taken all the appropriate steps, as seen in the AAV rollover risk mitigation (ORM, multiple safety and convoy briefs).
- Complacency kills – Not wearing seatbelts, speeding, failing to understand the vehicles center of gravity, and overcorrecting.
- The key component in mishap reduction is that of involved leadership, training, situational awareness coupled with improved survivability and restraints, wider use of risk management and strict adherence to proven TTPs.



* Actual Images of Recent Marine Corps Tactical Vehicle Mishaps

