

**Teamwork Is
The Key
To Safety!**



**Marine Corps Center for Lessons Learned
Safety Corner**

MARCH 2008

From the Director: There is more to towing a vehicle than just hitching up and taking off down the road. Towing a vehicle is not like driving your car; the overall handling of your vehicle becomes totally different. You have to make allowances for braking, accelerating, and the terrain you may encounter. Whether you are towing a HMMWV, utility trailer, or a boat trailer, the weight of the towed vehicle will lengthen the distance necessary for you to stop.

Safe vehicle towing requires proper SL-3 components and safety techniques, because you don't want to end up on your side, upside down, or worse. The following information is only a summary of the more complete information found in Technical Manuals that provide safety information and correct procedures for vehicle towing. Vehicle towing is safe only when proper procedures and safety precautions are followed. Remember, when towing a vehicle, as in most driving situations, exposure to certain hazards will occur. Read and follow all safety standards and checklists, but, most importantly, put safety first and you will successfully navigate through these hazards.

You are encouraged to pass on and post this newsletter for widest dissemination. Log on to the www.mccll.usmc.mil website to download previous editions of the Marine Corps Center for Lessons Learned Safety Corner, as well as our Monthly Newsletters. I look forward to your comments so we can raise awareness, reduce risk and maintain a high level of readiness.

Semper Fidelis,

Col Monte Dunard, Director MCCLL

*Your ideas can be directed to the Marine Corps Center for Lessons Learned (MCCLL) Director,
Col Monte E. Dunard, USMCR
monte.dunard@usmc.mil
Telephone: 703-432-1286 DSN: 378-1286*



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Safety is paramount! Make sure you always follow proper procedures.

Towing Vehicles

Before towing any vehicle, refer to the vehicle technical manual/order.

The following are general rules for towing:

- Move towed loads at slow speed.
- Use a tow bar in preference to chains, ropes or cables. Tow bars keep the towed vehicle from running into the towing vehicle.
- Connect cables, chains, or ropes, if used, to the pintle of the towing vehicle and to the lifting shackles of the towed vehicle.
- In cities or heavy traffic, tie the front lifting shackles of the towed vehicle tightly to the rear lifting shackles of the towing vehicle and connect the air brakes.
- Proceed slowly at 5 to 10 MPH because the towed vehicle will skid on turns at higher speeds.
- When using a tow bar, connect a chain between the two vehicles for safety in case the bar breaks or becomes disconnected.
- Be sure a driver is in every motor vehicle being towed to control it, unless a wrecker is towing the vehicle.



Towing Safety

- Personnel (other than the driver) must not occupy vehicle being towed. Failure to comply may result in injury or death to personnel.
- The driver is responsible for the safety of the personnel riding in their vehicle.
- Drivers should refuse to move a vehicle if anyone is in an unsafe position or the vehicle has too many passengers.
- Wear proper personal protective equipment (PPE)

➤ Ensure personnel are aware of the hazards and are trained in the proper procedures of vehicle recovery.



- Use the proper tow bar assembly when performing the task.
- Discontinue the use of unauthorized tow bars.
- Avoid quick stops.
- Equip towing vehicle with warning lights and/or signs.
- Use a wrecker whenever possible, it is designed for towing.
- Use a tow bar instead of ropes or chains.

NOTE: Technical Manuals for specific vehicles provide safety information and correct procedures for vehicle recovery

Always to Standard; By Kyle Holiman, United States Marine Corps

In December 2005, a motor transport mishap during a convoy training exercise emphasized the need to follow orders and technical manuals, even when preparing for combat conditions. The mishap left four Marines injured and one dead when the Medium Tactical Vehicle Replacement they were riding in flipped. The mishap occurred primarily because of improper towing procedures and operator error. Although this story involves a Marine vehicle, similar towing mishaps involving Army vehicles can be found in the U.S. Army Combat Readiness Center's accident databases.

The Accident Sequence

The Marines departed their release point about 1000. While en route to their first checkpoint, the convoy suffered a simulated improvised explosive device attack. In accordance with the rules of the exercise, the IED disabled one of the MTRVs in the company convoy. The Marines

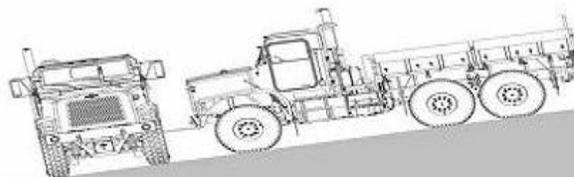
attached the disabled vehicle to another MTRV in the convoy, and the Marines from the disabled vehicle moved to the troop compartment of the towing vehicle. The convoy continued on its route until the towing vehicle reached a 30- to 35-percent downgrade with a slight left turn. As the vehicles descended the grade, the towed MTRV began to gain momentum. The operator applied the brakes to the towing MTRV; however, the inter-vehicular airlines were not attached, which prevented the operator from slowing the towed vehicle.

Why the Accident Happened

Unfortunately, the Marines who attached the towbar to the disabled MTRV failed to attach the intervehicular airlines and safety chains between the two vehicles, which is a common practice in Iraq. Some Marines in Iraq have adopted a towing method where the towbar is initially attached to the MTRV or HMMWV's front towing shackles and then fastened to the hood of the HMMWV using cargo straps. This allows for quick recovery procedures because the disabled vehicle only has to unfasten the cargo straps, connect to another vehicle's pintle hook and continue on its route. However, the MTRV towbar technical manual requires the inter-vehicular airlines and safety chains be used during all towing operations.

Without the inter-vehicular airlines, the MTRV can't brake evenly across all six axles of the towing and towed vehicles. Without this braking ability, momentum can cause the towed vehicle to push the towing vehicle, causing both to flip. In addition, the safety chains are the final failsafe device to ensure the two vehicles remain connected should the towbar connection break. Unlike the 5-ton vehicle, the towbar of the MTRV is a separate table of equipment item with its own SL-3. Unit leaders need to ensure all of the SL-3 for the towbar is embarked and on hand for operations.

How a Jack-Knife Occurs



1. Vehicle (1) slows down, but is jack-knifed by vehicle (2). MTRVs jack-knife and over-turn due to unsafe operating and towing procedures.

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Furthermore, the operator committed two errors that contributed to the mishap. The post-mishap LTI indicated that the mishap vehicle operated in "Highway 0-2" Central Tire Inflation System (CTIS) terrain setting rather than the required "Cross Country" CTIS terrain setting. The "Cross Country" setting would have provided the operator with more traction and perhaps lessened the possibility of the vehicle losing control.

It's recommended that future convoy commanders consider the type of terrain the convoy will traverse and include CTIS settings in the convoy checklist. Also, the operator made post-mishap statements that he focused his attention on the scenario-driven events happening in front of his vehicle rather than on the towed vehicle. This momentary loss of situational awareness led the operator to attempt to travel the decline at too great a speed.

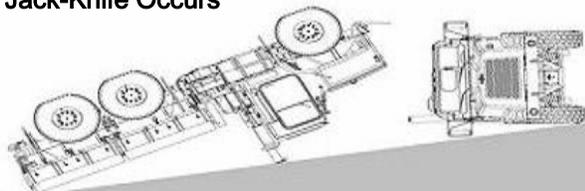
(continued)

Always to Standard (continued)

Bottom Line

Operators involved in towing operations need to understand the impact a towed vehicle has on their maneuverability. It is recommended that all motor transport operators receive training on towing procedures with practical application that allows Marines to experience the difficulties involved in towing operations. Unit leaders face difficult decisions during combat condi-

How a Jack-Knife Occurs



3. Mishap occurs.

Source: Ground Warrior

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tions that compel them to alter or ignore established orders and operating procedures. However, simulated combat scenarios such as those that occur during training exercises should not be an excuse for Marines to ignore technical manual

instructions. Towing presents a challenge for both unit leaders and individual operators. Unit leaders and operators need to be aware of the convoy speed, the towbar SL-3 and the CTIS settings during all movements. Failure to follow the technical manual creates the possibility for mishaps such as the one that occurred.

Recent Motor Vehicle Fatalities

USMC GROUND CLASS A

09 Mar 08 (4th MARDIV/ATB) Fort Rucker, Alabama. LCPL killed when a charter bus with 23 other Marines overturned.

USMC PRIVATE MOTOR VEHICLE FATALITIES

19 Feb 08 (HQCO/3D MARINE REGIMENT) Kaneohe Bay, HI. PFC was driving at high speed when he lost control, struck tree and died in vehicle fire.

17 Feb 08 (2nd MARDIV/2nd LAR BRE/2nd TANK BN) Hubert, NC. CPL died in a single vehicle rollover accident.

15 Feb 08 (1st MLG/7th ESB) Oceanside, CA. GYSGT was killed in a motorcycle accident.

05 Feb 08 (12th MCD/RSS MONTEBELLO) South El Monte, CA. SGT died in a motorcycle mishap when a delivery truck pulled out in front of him.

03 Feb 08 (1st MARDIV/4th MAR/1st BN) Riverside, CA. LCPL died after being ejected from his vehicle during a single automobile accident mishap.

USN OPERATIONAL MOTOR VEHICLE CLASS A

13 Feb 08 (CNO/NAVY RECRUITING DISTRICT DALLAS) Athens, TX. GOV driver struck and killed 2 Civilians.

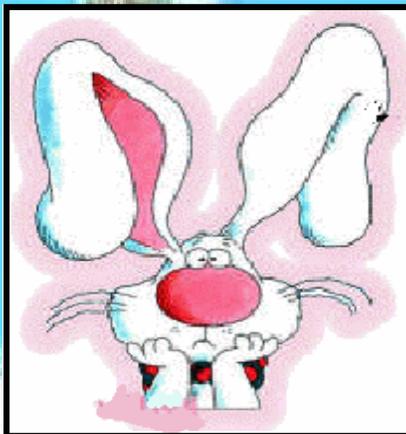
USN PRIVATE MOTOR VEHICLE FATALITIES

15 Mar 08 (SPECWARCOM/SBT-12) Buffalo, TX. EN3 lost control of his vehicle and died.

13 Mar 08 (CNSL/USS WASP) Norfolk, VA. GM2 hit increased throttle on his motorcycle struck curb and died.

10 Mar 08 (USFF/AIMD BRUNSWICK MAINE) Bowdoinham, ME. AM2 was struck and killed by a truck on the interstate.

08 Mar 08 (CNSL/WASP). LT killed when his vehicle hydroplaned, crossed median, and struck car carrier.



Have a Safe and Happy Holiday from the MCCLL Crew.

1. Don't put all your eggs in one basket.
2. There is no such thing as too much candy.
3. An Easter bonnet can tame even the wildest hare.
4. The grass is always greener in someone else's basket.
5. Let safety multiply in your units like rabbits.

Fatality Summary as of March 21, 2008



Safety is a cheap and effective insurance policy.

Author Unknown

