

Rollovers

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4) Hitting curb/median (impact initiated). Lateral momentum immediately arrested by the tires.

5) Rollover as result of collision (impact initiated). In these cases, the rollover is a consequence of an impact, such as by another vehicle. Many observers believe this type of rollover is not typical vehicle rollover since the rollover occurred because of another precipitating event-vehicle collision.

Minimizing the risk:

There are many ways to minimize the risk of vehicle rollover; as well as reduce the risk of serious injury should one occur. NHTSA statistics prove wearing a safety belt has the greatest effect on reducing the chance of fatality—occupants are 75 percent less likely to be killed in a rollover crash if they are wearing them. The previously

mentioned USACHPPM study reported the risk of fatality was three times greater for Soldiers who were not wearing a seat belt during a tactical vehicle accident (OIF/OEF CY03-04). Never attempt to jump from a rolling vehicle it may roll over.

Safety belt use has an even greater effect on reducing the deadliness of rollover crashes than on other crashes because so many victims of rollover crashes die as a result of being partially or completely thrown from the vehicle. Additionally, seatbelts allow the driver to remain in a position from which to stabilize an out of control vehicle. In OIF/OEF 81 percent of the fatalities were occupants of the gunner's position. The percentages of deaths occur to the individual already outside the vehicle at the second point of impact, being the gunner in the case of M1114s. The first impact is the tires and side of the vehicle. The gunner dies as a direct result of the impact of

the vehicle landing on its roof. Interior occupants can die from other injuries such as flying equipment or with the interior of the vehicle but not normally when restrained wearing a seatbelt. In vehicles with lighter armor (windows and doors) crews not wearing restraints can be ejected from the interior causing death on their impact or crushing from their own vehicle. Lastly if water related the interior crews may die from drowning.

1) Avoid panic-like steering. Many rollovers occur when drivers overcorrect their steering as a panic reaction to an emergency—or even to a wheel going off the pavement's edge. At highway speeds, overcorrecting or excessive steering can cause the driver to lose control, which can force the vehicle to slide sideways and roll over. Sudden vehicle maneuvers are particularly risky since the speed and load shift can make the vehicle unstable.

2) Know proper maneuvering. If a

vehicle leaves the roadway, steer the vehicle back into the roadway. Slight steering inputs back onto the roadway reduces the risk of pinching the tire sidewalls against the edge of the road or induce a flex in the sidewall which could cause the vehicle to veer out of control while transitioning from shoulder to road. This is a proven technique and is found in FM 21-305.

3) Use caution on rural roads. Rollovers are more likely to occur on rural roads and highways—particularly undivided, two-way roads or divided roads with no barriers. When a vehicle goes off a rural road, the vehicle can overturn when it strikes a ditch or embankment, or is tripped by soft soil. Nearly 75 percent of all rollover crashes occur in rural areas, so practice caution when driving on rural roads. Many of the rollovers in OIF/OEF were along narrow roads where the road shoulder collapsed or gave way causing the vehicles to overturn in a ditch.

4) Tire pressure. Improperly inflated and worn tires can be especially dangerous, because they inhibit the driver's ability to maintain vehicle control, the most important factor in reducing the chance of rollover. Worn tires may cause the vehicle to slide sideways on wet or slippery pavement, sliding the vehicle off the road and increasing its risk of rolling over. Improper tire inflation can accelerate tire wear, and can even lead to tire failure. It is important to maintain your tires pressure IAW the operator's manual and replace tires when necessary.

5) Load vehicles properly. Consult the vehicle's operators manual to determine the maximum safe load for the vehicle, as well as proper load distribution. If using a roof rack, pay special attention to the manufacturer's instructions and weight limits. Any load placed on the roof will be above the vehicle's center of gravity, and will increase the vehicle's likelihood of rolling over. Load heavier items low in the vehicle. Additionally, securing interior loads are particularly important since objects inside the cab will become deadly flying missiles should a rollover occur.

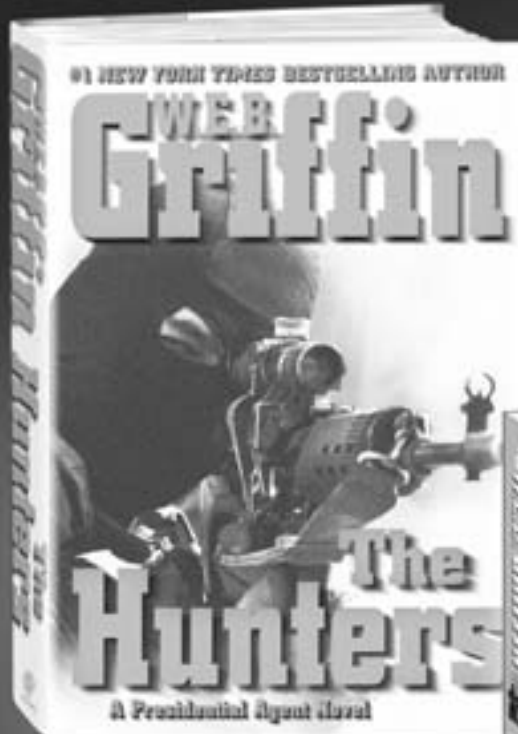
6) Trailer towing. Vehicles towing trailers are much more prone to rollovers. Vehicle speed should always be adjusted when towing trailers since negotiating curves and sudden steering maneuvers result in an exaggerated motion of the trailer.

Understanding how rollovers occur and knowing how to minimize the risk are the best arsenals for tactical vehicle drivers and occupants to prevent rollovers from occurring in the first place. Those who have experienced rollovers often say, "Once it starts to happen, you are just along for the ride". Drivers want to avoid getting into rollover conditions, but should it happen, "you best be wearing your seatbelt". For additional information on rollovers, Soldiers should consult GTA 55-03-030. Leaders should periodically conduct the required rollover training drills and educate their Soldiers on rollovers as part of the unit vehicle safety program.

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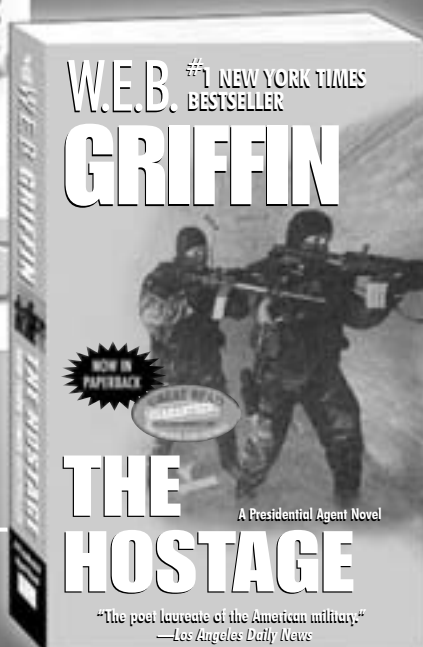
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