



**ROTM February 2013**  
**ROTM: “Use a ‘45’ to Stay Alive at Vehicle Fires.”**  
**(12-265) (Topical Relation: Vehicle Fires, Exploding Struts)**

Good day.

The vehicle fire is the second most frequently encountered fire incident in United States according to the National Fire Protection Association. The NFPA reports that U.S. firefighters responded to 219,000 vehicle fires (versus 484,500 structure fires) in 2011. That equates to a vehicle fire being encountered every 144 seconds somewhere in the U.S. The 219,000 vehicle fires resulted in 300 civilian deaths, 1190 civilian injuries and \$1.4 billion in direct property loss. Responding firefighters were injured at a rate of 1.4 injuries per 1000 incidents, or 307 injuries for the year.

Even though the injury rate may be perceived as low, we shouldn't be lulled into thinking fighting vehicle fires is risk free. On the contrary, as this month's ROTW illustrates, injury potential takes the form of a variety of hazards. In this month's report, [12-265](#), an unannounced exploding vehicle strut interrupts an otherwise commonplace incident.

*“Responded to a call of a vehicle fire...After donning my PPE, I began to walk to the nozzle. As I was doing so one of the gas struts that holds the hatch back up violently exploded and shot across the roadway. After gathering myself, I began again to approach the vehicle from a 45 degree angle. I advised all units on scene of this situation, and directed them to stay at a safe distance. I began to attack the fire and within another 2 minutes, the other gas strut exploded out of the vehicle. The fire was quickly knocked down without any other incident or injury.”*

Any vessel under pressure will rupture when exposed to enough heat. The list of components in a vehicle that operate under pressure is long. The involved vehicle fire is a total loss for the owner and a write off for insurance companies. Our suppression efforts should be framed with that knowledge. Once you have read the entire account of [12-265](#), reviewed the related reports and related links, consider the following:

1. Compare your last several vehicle fires to this incident and the related video links. What commonalities can you find?
2. Which element of the vehicle fire poses the greater threat in your opinion, the burning vehicle, or passing traffic? Cite examples to support your position.
3. Time the “knockdown time” for the vehicle fires in the video clips. What conclusions do you draw from hoseline selection and agent application?
4. What are the components of vehicle fire smoke? Does it differ markedly from structural fire smoke?

5. What is the minimum PPE level your department mandates for vehicle fires? Given this near miss and your answers to questions 1 through 4, is the PPE level appropriate?

The vehicle fire is not to be taken lightly. The hazards it poses are both numerous and potentially lethal. Safe and protective apparatus positioning, full PPE with SCBA on and in use, and an overwhelming attack from a safe approach point will give you the best chance of a quick resolution to the event.

Here are a couple of other refining points to make your next vehicle fire a non-event.

- Position apparatus upwind and upgrade.
- Don full PPE with SCBA before approaching the burning vehicle.
- Chock the burning vehicle's wheels before the attack begins.
- Approach the vehicle from a 45° angle.
- Be alert for exploding vehicle components (e.g., struts, tires, air bags, bumpers, compressors, etc.).
- Attack the fire with a minimum of 150gpm to effect a quick knockdown.
- Post a lookout to keep an eye on traffic.
- Request an additional piece of heavy apparatus if necessary to protect the work zone.

### **Related Reports/Links – Topical Relation: Vehicle Fires, Exploding Struts**

[05-519](#)  
[09-142](#)

[06-185](#)  
[10-216](#)

[07-791](#)  
[11-005](#)

[08-360](#)

<http://www.nfpa.org/itemDetail.asp?categoryID=2568&itemID=57102&URL=Research/Statistical%20reports/Vehicles/>

<http://www.youtube.com/watch?v=vbRFvCIVSDg>

<http://www.youtube.com/watch?v=4SkQ5lu7CrE>

[http://www.youtube.com/watch?v=74kg1EyB\\_T4](http://www.youtube.com/watch?v=74kg1EyB_T4)

<http://www.youtube.com/watch?NR=1&v=WqPGZBnNZ-Q&feature=endscreen>

<http://www.youtube.com/watch?v=9zDJpvU4bEk>

Submit your report to [www.firefighternearmiss.com](http://www.firefighternearmiss.com) today so everyone goes home tomorrow.

*Note: The questions posed by the reviewers are designed to generate discussion and thought in the name of promoting firefighter safety. They are not intended to pass judgment on the actions and performance of individuals in the reports.*

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## National Fire Fighter Near-Miss Report

**Report Number:** 12-0000265

**Report Date:** 11/13/2012; 1942

### Synopsis

Car fire 45 degree rule reinforced.

### Event Description

Responded to a call of a vehicle fire, we are an all volunteer department, which means we have limited staff especially during the day time hours. I was the driver of the attack engine, after arriving on scene and doing a visual safety 360 and turning over command to another member, I donned my protective clothing, another member arrived on scene and stretched a pre-connect and began to set the truck up to pump. After donning my PPE, I began to walk to the nozzle, as I was doing so one of the gas struts that hold the hatch back up violently exploded and shot across the roadway. After gathering myself, I began again to approach the vehicle from a 45 degree angle. I advised all units on scene of this situation, and directed them to stay at a safe distance. I began to attack the fire and within another 2 minutes, the other gas strut exploded out of the vehicle. The fire was quickly knocked down without any other incident or injury.

### Lessons Learned

Approaching a vehicle fire from a 45 degree angle is very important. Apparatus placement should be taken into consideration while arriving on scene or from someone who may already be there. PPE full bunker gear as well as SCBA should be mandatory. Passing this information on to other departments will be very helpful.

### Demographics

Department type: Volunteer

Job or rank: Fire Chief

Department shift: Respond from home

Age: 34 - 42

Years of fire service experience: 17 - 20

Region: FEMA Region IV

Service Area: Rural

### **Event Information**

Event type: Fire emergency event: structure fire, vehicle fire, wildland fire, etc.

Event date and time: 11/13/2012 0000

Hours into the shift: Volunteer

Event participation: Involved in the event

Weather at time of event: Clear with Wet Surfaces

Do you think this will happen again? Yes

What were the contributing factors?

- Other
- Situational Awareness

What do you believe is the loss potential?

- Lost time injury
- Life threatening injury