

Instructor Notes: As the popularity of electric powered cars increases, so will your chances of having to tow one ... they are cars after all. Use this opportunity to discuss some of the safety concerns your drivers should be aware of when asked to tow an electric car. The information presented may be shocking.

Safety Meeting 2015 #4 – Electric Vehicles – Watts the Big Deal?



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Electric vehicles are not a new concept. In fact, they were first developed back in the mid 1800s and originally outsold all other vehicles until the early 1900s when their fate was sealed as combustible gas engines became more powerful, easier to mass produce and the price of gasoline remained relatively cheap.

Electric vehicles are here to stay. In 2013, 2.3 million hybrid and electric passenger vehicles were on U.S. roads and over the next five years that number is expected to quadruple, leading some researchers to believe that electric vehicles will account for over five percent of total U.S. vehicle sales in 2017.

EV vs HEV?

With new technology comes new acronyms. The most common is the Hybrid Electric Vehicle (HEV) which combines battery power with a small gasoline engine that backs-up the electric or acts as a range extender. There are currently ten different models of HEV vehicles on the market today but they are giving way to the new breed of 100 percent Electric Vehicles (EV) such as the Chevy Spark (low end) to the 1,088 hp Rimac Concept One (high end). In 2015, there will be approximately 20 EVs produced by almost every vehicle manufacturer in the world. Most you've heard of, some you haven't ... yet.

What's the big deal?

While towing a disabled EV or HEV may not appear to be a big deal – after all, they have four tires and act like a regular car – the differences are huge.

Some electric cars don't have a "neutral," some have electronic parking brakes and one (Tesla Model S) may loosen its tie-down straps on your flatbed if you don't disable its self-leveling feature by placing it into "Jack Mode" while transporting it, *even with the ignition off*.

The first step to towing an electric car safely is to send the right truck. A Tesla requires a flatbed. Most Nissans can be transported on a flatbed or with the front drive wheels off the ground. A Ford Focus EV is good either way as long as you don't use a sling or they can be flat towed provided they are in neutral, moving forward, under 35 mph for less than 50 miles. The lesson to learn is to always confirm the proper way to transport a vehicle by checking the owner's manual, calling the dealer or using other online sources *before* you hook up.

Debunking a few electric car myths

Most people – including first responders and towing operators – are generally fearful of anything "electric" especially after it has been in a crash. With that in mind, electric vehicles are usually very safe. Their batteries are well protected and can be disconnected through a wide variety of means, including cutting the low voltage electric cables (12 volt). When trying to determine if a cable can be cut there are a few guidelines.

1. Do not cut any "orange" cables. They are high-voltage and can contain around 360 volts.

2. Look for warning labels before touching a cable.

3. Refer to the owner's manual or online sources if you're not sure.

If the vehicle is on fire, electric vehicles share as many concerns as a regular car. When exposed to fire the large battery in an electric car will not explode. If battery cells reach a high enough temperature, they vent and release "electrolyte," but keep in mind, electrolyte is flammable. Most manufacturers recommend using copious amounts of water to cool the battery and extinguish the fire. If the fire is large, back away and call 9-1-1 as your ABC dry chemical extinguisher on your tow truck will most likely not extinguish a large battery fire.

As mentioned, water poses little risk even if the car is partially submerged in water because there is no ground reference and no additional hazard even if an electric vehicle is completely submerged. The high-voltage battery is sealed and isolated from the vehicle chassis. If the vehicle is immersed in water, you will not be electrocuted by touching the vehicle.

Wrap up

There is a lot to learn about towing an electric vehicle, and even more if it has been in a wreck. Work with the dealers in your area to learn about these vehicles, attend towing safety seminars, or use online resources such as www.avsafetytraining.org or the electric vehicle manufacturer's website. Stay informed. Stay safe.

If you need any ideas on how to prepare and present this information to your drivers, please call me at 847-894-0042 or email me at pgratz548@comcast.net.