

# FIREWATCH

Fire and Emergency Medical Services Intelligence Briefing

November 11th, 2008



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# Home Made Hydrogen Generators for Passenger Vehicles

- Information for responders regarding consumers' efforts to make their dollars go farther



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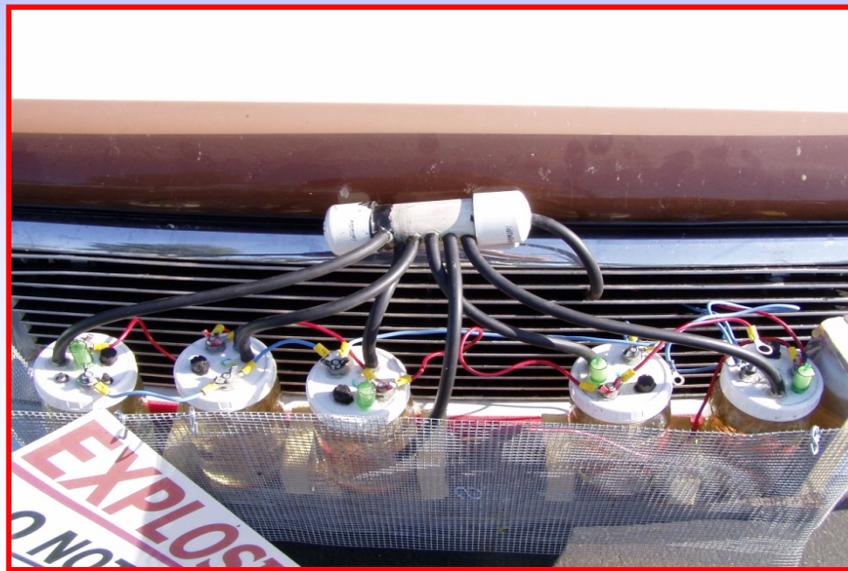
# ONTARIO, CALIFORNIA

- On Sept 6, 2008 at 15:57, a concerned citizen dialed 911 to report a suspicious pick-up truck with a camper. The truck was in the parking lot of a Marriott Hotel, across the street from the Convention Center.
- The report stated, there were 5 bottles secured to the front with wires extending into the engine compartment. A sign attached stated: “**EXPLOSIVES**, DO NOT TOUCH”
- No threats had been made, and both the Convention Center and the Hotel had events in progress.



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- The owner of the vehicle was determined to be a guest of the Hotel.
- An EOD Tech interviewed the owner (an elderly male, traveling with his wife) and was informed the device secured to his truck was used to produce Hydrogen gas to increase the fuel efficiency of his vehicle.
- The owner stated the system worked by sending an electric current through the coil inside the fluid. The fluid was 1 tsp of Bi-Carb, mixed with a quart of water.
- He stated the “**EXPLOSIVE**” sign was attached to prevent theft.



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# The Woodlands, Texas

- Units dispatched to an MVA
- Upon arrival first responders find one vehicle with significant damage
- While assessing the vehicle, responders note a rust-colored spill and glass containers inside the hood



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As patient care and removal are started,



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first responders noted a wooden box visible beneath hood with glass jars filled with rust-colored fluid.



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- At this point first responders suspected a homemade hydrogen generator.
- Hydrogen generators are meant to use electrical energy conducted through water to release and capture hydrogen, sending it through the vehicle's air intake.
- Design is meant to increase the efficiency of the combustion process, resulting in lower emissions and better fuel economy.
- Kits and how-to guides are available online.



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- You can identify the cathode and anode terminals on the jars, as well as the coil of electrolysis wires above the broken jar. This process results in the oxidation of the materials
- Wiring distributing power to the electrolysis cells. Also note the flexible tubing for vapor transmission



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At the front of the grill and near the firewall you can see the manifold (red) that consolidates hydrogen vapor from the six cells into one single tube.



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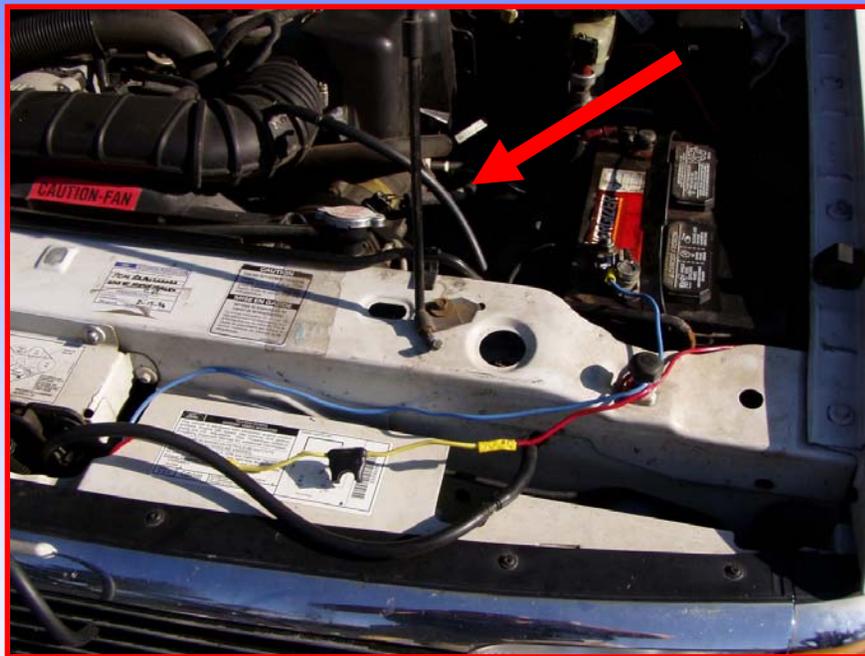
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The consolidated vapor tube discharges directly into the air intake behind the air filter.



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In some designs there may be a cutoff switch located near the dashboard to prevent power generation when vehicle is not running. Many systems also have wires into the ignition switch to prevent power drain and excessive production

The systems power source may be a wire which passes through the fire wall and is connected to the fuse panel.



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# Precautions

- In The Woodlands, Texas incident, it was undetermined if the generator had anything at all to do with the accident.
- Concerns about system being powered up for an extended period, could the generator could have permeated the air in the engine's intake with hydrogen sufficiently to burn in an explosive nature upon startup. At The Woodlands, Texas accident occurred in a parking lot and witnesses stated the vehicle was "revved up" near full throttle before, during, and after the crash.
- **Keep in mind that hydrogen is a flammable gas, so prevent sources of ignition in the area of these generators just as if dealing with gasoline or other flammable hazards.**
- **Secure / remove power to the vehicle as early as possible to power down any active chemical process.**
- Request Special Operations B.F.C. and consider HazMat Task Force if there is any damage to the system



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