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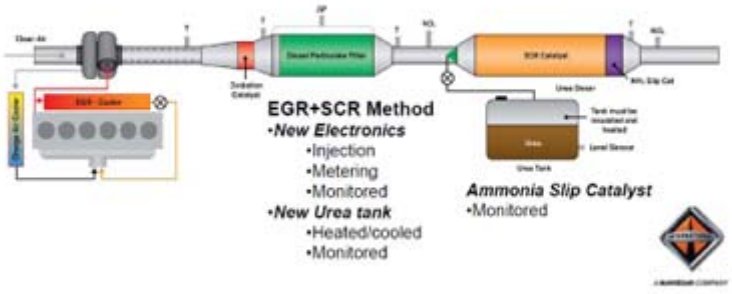

Source: International Trucks

Pinnacle Session Updates Agencies on Ambulance Chassis Delays and Changes

A.J. Heightman, MPA, EMT-P, JEMS Editor-in-Chief
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Terming it "a wake-up call for EMS," Mark Van Arnam, president/CEO of American Emergency Vehicles, told the audience of EMS managers attending a special ambulance chassis update session at the 2009 Pinnacle Conference in Florida last week that emergency service agencies will soon be affected by the massive changes that are happening in Detroit. He reported that the financial condition of the OEM chassis manufacturers has resulted in delays due to lack of orders, weak financial structure and the availability of parts. At present, Ford is running at about two-thirds production speed, and General Motors (GM) is at about half speed due to plant slowdowns and close downs. Dodge has just reopened production facilities after an extended shutdown following their bankruptcy filing.

Van Arnam said the GM C4500 Kodiak/Top Kick, a popular EMS medium-duty chassis, has now been discontinued, as has the complete Sterling chassis brand. The Dodge Sprinter (Mercedes) chassis have been extremely hard to get due to plant shutdowns. Ford is now discontinuing the diesel engine in their Econoline vans. This all means that agencies in need of new units must plan for delays and the use of new chassis or engine options. These changes could be significant to the individual EMS provider. For example, Van Arnam said that the second generation Dodge/Freightliner Sprinter by Mercedes is becoming increasingly popular. The bad news is that it could cost agencies $15,000 to $20,000 more than chassis they may have used in the past.

As an example of how chassis dynamics and economic conditions affect our industry, Van Arnam reported that, in 2005, 6,627 ambulances were sold, but in 2008, only 5,873 were sold (down 11.4%).

Impact of New Standards
The government has also released the next level of diesel emission standards for 2010, calling for a selective catalytic reduction (SCR) system or equivalent on all diesel truck

chassis. This system is intended to burn off nitrogen oxide gas and improve air quality. The new higher emission requirements for a diesel exhaust fluid (DEF) system and the use of a particulate matter (smoke) removal filter will affect ambulance operators.

The new diesel oxidation catalyst (DOC) which injects the DEF will be added by the chassis manufacturers to all diesel chassis. One exception stands out -- International Truck has developed an enhanced exhaust gas recirculation (EGR) system, which will replace the DOC component that the other manufacturers will be using.

All new diesel ambulances with engines built after Dec. 31, 2009, will be required to have engines that will burn off nitrogen oxide. To accomplish this, all new diesel ambulances (with the exception of International brand chassis) will have a six- to eight-gallon DEF (urea solution) tank on them, which will inject the urea into the exhaust system to burn off the nitrogen oxide.

However, Van Arnam reported that Ford does not currently have a compliant diesel engine for the Econoline van and cutaway chassis that have been extremely popular for ambulance applications. Ford will now be providing those chassis with a V-10 gasoline engine. This may seem odd to some, as the EMS industry was using large gasoline V-8 engines during the 70s and 80s, before Ford determined they were no longer suitable for ambulance operations and mandated the diesel engines for their ambulance chassis.

The DEF additive will require crews to be conscious of their DEF additive tank level. Here's a sample description of how one DEF system will work:

1. The driver will an initial warning indicator on their instrument panel when the DEF tank gets down to 1.5 gallons;
2. The driver will get a second warning (visual and audible) and a digital indication of the number of remaining "engine starts" they have (counting down from 20) when their tank hits 0.8 gallons;
3. If the operator ignores both warnings and continues to drive the unit until it runs out of the DEF (urea) additive, they'll experience a "final engine start" and *not be able to start their ambulance* the next time they attempt to do so. Because this can result in a delayed or failed response, this could result in a serious patient care delay/failure and present a liability to an ambulance agency.

Van Arman also noted that sulfur levels have been reduced in fuel (ultra-low sulphur fuel). Although this is good for the environment, it may be harmful to older diesel engines still in use that were not designed to use this fuel.

Van Arnam said there will likely be a $3,500 to $10,000 increase in the cost of a vehicle chassis passed along to the purchaser to adjust for the addition of these new 2010 emission requirements, as well as the tanks and heaters to heat up the urea (DEF) in cold environments.

Vehicle Chassis Options

Van Arnam said there are an average of 5,634 ambulances produced annually (10-year average) and that currently the chassis used by EMS manufacturers is split approximately 50/50 between Ford and all others. But Van Arnam predicts that within a year, GM and others could provide a greater share of the EMS chassis based on Ford's failure to provide a diesel engine in the Econoline.

Ford

- Ford decided to stop making the Ford Econoline (Type II) with a diesel after Dec. 31, 2009.
- The Econoline Gas Ambulance Package with 6.8L V-10 will not be in production until October 2009.
- The F Series chassis (with a new Ford 6.7 Liter diesel with SCR) will be available, but will cost significantly more than present, due to the new emission system.

GM

- G3500 Cargo Van is no longer useable as an ambulance chassis effective with the 2010 models due to inadequate UVW weight rating.
- The G series 3500 and 4500 cutaways will be available with an SCR diesel for Type III ambulances.

Future Ambulance Chassis Options

TYPE I

- The Ford F-350/F-450 Diesel cab/chassis will have the SCR system.
- The Dodge RAM 4500 Diesel cab/chassis will have the SCR system.
- The GM C-3500 has an inadequate GVW capacity for ambulance applications.

TYPE II

- Ford will offer the E350 cutaway chassis with a V-10 gas engine. (Cost for this chassis is in the low-mid $20s after price concessions, approximately $4,800 less cost than the current diesel engine.)
- Sprinter will offer the 2500 SRW diesel with SCR. (Cost for this chassis is in the low $40s; however, it appears to have a significant advantage in fuel and operating costs.)

TYPE III

- Ford will offer their E-350/E-450 Cutaway with a V-10 *gas engine*
- The GM G3500/G4500 Diesel Cutaway Chassis with a 6.6 Duramax diesel and SCR system will be available and is expected to be a popular model.
- Dodge will offer the D4500/5500 Cab Chassis (with SCR system), but no production is planned to start until mid 2010.
- The Sprinter 3500 (with SCR system) will be available. The future of the Sprinter as a Dodge product is unknown based on the new FIAT alliance and the fact that FIAT is a competitor to Daimler. However, Daimler/Mercedes has stated that they're committed to the Sprinter product in the U.S. market.

Medium Duty

- Ford F650/750 diesel with SCR will be available with an ambulance package.
- Navistar has made a decision to stay diesel (Models 4100/4300/4400) and will use only the advanced EGR. The cost for the emission compliance is estimated to be the same as SCR.

- Freightliner has made a decision to stay diesel and will use an SCR System (the Freightliner M2 Diesel). However, due to their engine size, there will be a large space requirement. This may cause normal cab mounted components to be body located.

Federal Vehicle Safety Issues
Van Arnam also updated attendees on the new Federal KKK Revision "F" Testing Criteria for Laboratories that has been released in 2009. In addition, the NFPA is in the process of developing an ambulance standard, which he believes will be adopted by the Feds, with a three- to five-year phase in period for creation and implementation.

Look for more information on these important new ambulance chassis and engine changes in JEMS, on JEMS.com and in a special section on EMSConnect.

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A.J. Heightman

Editor-in-chief of JEMS A.J. Heightman is a former EMS director and EMS operations director who has researched and specialized in MCI management training for 30 years. Contact him via e-mail at a.j.heightman@elsevier.com.

Learn more from A.J. Heightman at the EMS Today Conference & Expo, March 2–6 in Baltimore.

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