on their trucks, but if you go to a volunteer fire department in Pennsylvania, they end up with a lot of stuff. I think the trend is going to continue.

The other thing that I see going forward is that the population is being less mechanical. They didn't grow up working on cars, they didn't come off of a farm, so products are going to need to be very easily maintained and easy to operate. I think you're going to see that manufacturers are going to do that in one of two ways, in either [making] the method of troubleshooting more computer-oriented or by designing the product so the maintenance becomes almost obvious just by looking at it. I think those are some of the trends in the future.

We look at guys who are 25 to 30 years old; what they're accustomed to is a joystick or a laptop computer. They're not real comfortable with instruments or mechanical tools, so provide the electronics for the diagnostic side to troubleshoot, and keep the mechanical repairs as simple as possible. I think that's a very possible trend.

That's going to put a lot more responsibility on the manufacturers, isn't it?
It certainly is. The odd thing about fire trucks that I've encountered many times is that somebody will introduce a very sizzling type of feature that as you look at it, you probably think it's not the best thing to put on a truck, but the supplier of that component does such a great job of speccing it to the customer, you end up having to supply it as part of the bid, and then you end up stuck trying to implement it and make it work effectively. I think in the long term, it's probably a real difficult thing for a manufacturer to accommodate because, "Your truck's bad because you included a component that you didn't want to put in it in

MATCH YOUR GENSET TO YOUR APPLICATION

Portable, diesel, gas, LP and hydraulic generators need to perform under the most rigorous conditions. In an emergency, high-quality performance and the right tools can save property and lives.

Here are some common fire-rescue vehicles and typical genset types and sizes used to power them.

Aerials mostly use a small diesel genset to provide the power needed for lighting, but they also can use a hydraulic generator. Frequently a 6–8kw range is sufficient for the lighting and various other tools. More and more fire vehicles are required to provide multiple services and/or become involved in more types of emergency situations. Future equipment should be considered before making a final decision on which generator to use.

Rescue vehicles normally use power-take-off and hydraulic generators. The 15–40kw offering of the PTO can operate the bottle-filling compressors and large light towers. The ability to mount the generator under the chassis also saves compartment space.

The alternative to using a PTO generator is a hydraulic generator, which has equal reliability and a power range from 6–25kw. Hydraulic generators have no engine, fuel supply or exhaust system. They can be operated at any engine speed, creating power on the go or while pumping. This offers an advantage over a PTO generator, which must be run at a constant speed.

Pumpers can use a hydraulic or diesel generator and may have a portable genset to power lights, vent fans or small extraction pumps. Most portables are gasoline, meaning mixed fuel on the truck. The small portable gensets are heavy to move, require additional maintenance and can be noisy.

Hydraulic generators offer flexible installation and compact size, making them easy to mount in multiple locations, including under the vehicle and on top. Another advantage is that you don't have to give up valuable compartment space.

Brush trucks, or off-road emergency vehicles, most frequently use portable gensets. But more and more departments are installing small diesel gensets or hydraulic generators. A 5–8kw range provides sufficient power for this application.

ARFFs use diesel generators as standard, and 10kw usually provides enough power to meet the requirements for external lighting. But as companies become more aware of the maintenance and installation costs and weight of diesel gensets, hydraulic models are being considered more often.

Command centers often have complex power requirements, including roof-top air conditioning, light towers, communications equipment, interior lighting and plug-in loads. There are several generator solutions to meet the requirements for these vehicles, including hydraulic, PTO, diesel, LP and gas models.

A trend in this application is power in excess of 40kw. Engine-driven PTO generators, combinations of diesel and gasoline, or multiple gensets for backup can be used for these vehicles' high power

needs. An important issue when considering power for the command center vehicle is not just what kind of power requirements the vehicle itself might need, but what other power needs may have to plug into the vehicle.

Ambulances rely mostly on inverters and battery banks for their power needs. A pure sine wave is essential for many of the medical instruments used in the vehicles. While the genset power needs may not be greater than 6kw, space limitations keep gensets out of most vehicles. Some manufacturers offer small housed gensets, which are a good choice for a diesel-fueled vehicle used for high-risk transport such as a neonatal ambulance. Some ambulances use gas gensets on an otherwise diesel-fueled vehicle.

Hazmat and quick rescue vehicles are frequently customized. Often a hazmat vehicle is customized to handle a spill or emergency at a refinery, chemical plant or other local industry. These vehicles can use a 15–30kw PTO generator or a 10kw diesel. Hydraulic generators also are being installed.

To select the right genset for your vehicle, determine what equipment you will run individually and simultaneously. Check the wattage requirements on each item (volts × amps = watts). Total the wattages of all equipment to be run simultaneously. Electric motor starting may require up to three times the running power. Your dealer or distributor also will help you in determining the correct size genset for your vehicle.

Remember that regular service and maintenance is required to keep the genset in good working order. A typical and common, if not required, practice for departments is to clean, test and exercise equipment regularly to ensure availability in the event of an emergency. Your generator set should be tested and exercised at 50% load for a minimum of 90 minutes at least monthly, preferably weekly.

—Ann Gougebas, Onan Corp.