

TRAINING WHEELS

Oklahoma fire department develops one-of-a-kind driver training simulator

By Bob Vaccaro

When it comes to driver training, most of us in the fire service use actual fire apparatus; some also use computerized driver training simulators. The Edmond (Okla.) Fire Department (EFD) decided to do something entirely different and, with the help of a seasoned manufacturer, developed a specialized “skid truck” that allows firefighters to actually drive the apparatus while training on vehicle stability and control.

RESEARCH & DEVELOPMENT

“The idea of the skid training began in the 1970s and came from a company called SkidCar Systems,” says Major Mike Fitzgerald of the EFD. “The company came to Norman, Okla., and demonstrated the concept on an International conventional cab truck. At the time, most of the SkidCar vehicles were police vehicles. [The concept] was never tried on heavier vehicles. So our training officer brought the idea back to Edmond.”

The EFD liked the idea so much, it began researching ways to apply the system to their apparatus. At first, they ran into a roadblock. “We discovered that the weight of our ladder trucks and pumpers exceeded the weight limit of the original SkidCar System,” Fitzgerald says. “So we decided to use a 10-year-old reserve rescue vehicle with low mileage because it was one of the few apparatus we had that did meet the weight requirement.” ▶



PHOTOS COURTESY EDMOND FIRE DEPARTMENT

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Right: The SkidTruck system consists of a steel ladder frame with separate hydraulic dollies fitted to the front and rear axles. These hydraulic dollies carry hydraulic rams connected to free-castering wheels at each of its four corners. Each dolly is attached to the suspension of the vehicle's front and rear axles.

Below: During in-vehicle training, the SkidTruck instructor, who's provided through SkidCar Systems, operates a control box that can raise or lower the skid frame at the front or rear of the vehicle.



Hands-On Training

The Skid Truck Program teaches the following fundamentals:

- Vehicle inspection
- Vehicle dynamics
- Contact patch
- Vehicle platform/stable platform
- Weight transfer
- Cornering techniques
- Steering techniques
- Eye movements
- Braking and acceleration
- Physical and mental experience and training
- Legal aspects

With this plan in mind, the EFD contacted Skid-Car Systems. Engineers took exact measurements and photos on site, then sent the information back to Sweden for manufacture.

Fortunately, funding the system wasn't a problem. "The system was paid for by our public safety sales tax," Fitzgerald explains. "The tax also paid for a new fire training center, which includes a 300' x 600' driver training pad."

WHAT IS IT?

The SkidCar System is an all-in-one driver training package that fits vehicles ranging from cars (Type A) to fire apparatus (Type D, business class trucks) and even buses (Type E).

The system consists of a steel ladder frame with separate hydraulic dollies fitted to the front and rear axles. These hydraulic dollies carry hydraulic rams connected to free-castering wheels at each of its four corners. Each dolly is attached to the suspension of the vehicle's front and rear axles.

The technology that drives the system allows the user to duplicate challenging driving conditions, such as slippery surfaces. A proprietary controller allows for adjustments to multiple traction settings with memory so control of grip is possible for each vehicle axle.

SKIDTRUCK IN ACTION

Primarily, the EFD uses the SkidTruck System to demonstrate the importance of driver accountability when making decisions that affect vehicle stability. It also focuses on avoiding skids rather than recovering from skids.

During in-vehicle training, the SkidTruck instructor, who's provided through SkidCar Systems, operates a control box that can raise or lower the skid frame at the front or rear of the vehicle. Doing this increases or decreases the tires' degree of contact with the road, which in turn affects the amount of vehicle traction. If a driver commits a critical error, causing the vehicle to skid, the instructor can lower the vehicle and stop the skid.

The overall objective of using the SkidTruck is to provide hands-on training to drivers so they can acquire a better understanding of how a heavy apparatus will operate in real life, while also providing optimal safety to both students and instructors.

It's important to note that the instructors don't try to trick the drivers by manipulating the vehicle. As long as the driver operates the vehicle correctly, they'll be able to properly manage the vehicle with little or no skids.

But EFD driver training doesn't stop there. "Our drivers take a 170-question written exam," Fitzgerald says. "They also must have hands-on training on pumping, aerial operation, heavy-rescue vehicles and actual driving."



Raising or lowering the skid frame can increase or decrease the apparatus tires' degree of contact with the road, which in turn affects the amount of vehicle traction. If a driver commits a critical error, causing the vehicle to skid, the instructor can lower the vehicle and stop the skid.

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SHARING THE WEALTH

Presently, the EFD is training mutual-aid companies at its training center, which is also used as a regional fire training center. According to Fitzgerald, the EFD has received calls from departments in other states that want to schedule SkidTruck training. The EFD has tried to accommodate everyone. "About 2 months ago, we purchased a double-decker trailer to transport the unit around," Fitzgerald says. "We're developing a fee schedule for mileage and instructors so we can transport the unit as requested."

CONCLUSION

The EFD needed skid training with their current apparatus, but they didn't want to settle for the more traditional ways of performing driver training. As a result, they assisted in developing the first-ever SkidTruck, a highly functional training tool that promotes driver safety in a controlled, yet real-life environment.

If you're in need of this type of training for your members, visit the SkidCar Systems Web site (www.skidcar.com) to see if it can fit into your training budget. 🌐

Bob Vaccaro has more than 30 years of fire-service experience. He is a former chief of the Deer Park (N.Y.) Fire Department. Vaccaro has also worked for the Insurance Services Office, The New York Fire Patrol and several major commercial insurance companies as a senior loss-control consultant. Vaccaro is a life member of the International Association of Fire Chiefs.