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Competing Ambulance Safety Standards Await State Adoption



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Richard Huff, NREMT-B

New ambulance safety and design standards are on the way by early next year. While a new system needs to be in place by 2016, a new set of guidelines ambulance manufacturers will follow have yet to be adopted.

Proposed standards the nation's ambulance builders will be required to adopt for 2016 and beyond hinge on an ongoing debate between standards created by the Commission on Accreditation of Ambulance Services (CAAS) and the National Fire Protection Association (NFPA), culminated by the adoption of a standard by the Office of EMS in each individual state. (See Table 1 download below.) If one or the other can become the standard that all ambulance manufacturers follow, those guidelines will impact the way ambulances are built for decades to come.

"Ambulance vehicle design standards are needed," Dia Gainor, executive director of the National Association of State EMS Officials, said. "Unlike passenger cars, unlike school busses, there are no universal safety-related design standards at a federal level. It ends up becoming the responsibility of the states."

How the industry gets to that point, however, is up for discussion, handwringing and a little bit of competition between the EMS-based CAAS and the fire service-oriented NFPA.

"First and foremost, it matters for the safety of the EMS crews, their patients and the travelling public," Gainor said. "Every possible resource that can contribute to their safety in an ambulance-involved collision is critical."

Why Now?

Ambulance vehicle standards have traditionally been handled by the government's General Services Administration (GSA) using the KKK-A-1822 (A-F) purchasing specification, originally published in 1974 and established as a guideline for federal agencies and federal grant recipients to buy ambulances.

Gainor said 42 states have rules referring to the design of ambulances, and 30 of them rely on KKK-A-1822F, which is commonly referred to as "Triple K" or "KKK" ambulance specifications.

Though in place, manufacturers and customers felt the specifications lacked the safety requirements to meet today's needs. Several years ago, federal officials decided to sunset the KKK standard, as part of a government mandate for implementation of consensus-based standards. The initial end date was October 2014, but it has since been extended—twice. It's now slated to end in October 2016. As a result, it's up to EMS industry consensus groups to create a suitable replacement.

"There has to be some standard. If there's not, you're going to have 20 different manufacturers building vehicles in different manners," Mark Van Arnem, co-chair of the CAAS Vehicle Standards Committee and president/CEO of American Emergency Vehicles, said.

At issue is the safety of those riding in ambulances today and in years to follow. Between 1992 and 2011, there has been an average of 4,500 motor vehicle crashes involving an ambulance, according to a study by the National Highway Traffic Safety Administration (NHTSA). An estimated 34% of those ambulance-related crashes resulted in an injury. During that same period, NHTSA's April 2014 report, "The National Highway Traffic Safety Administration and Ground Ambulance Crashes," noted there were an annual mean of 29 fatal crashes, involving either someone in the ambulances or those in other vehicles.

The challenge, however, is to get every state on board with one standard, which may be easier said than done given that a universal comprehensive standard doesn't really exist today.

After the GSA announced it would stop supporting the Triple K standards, the NFPA created a design standard known as "NFPA 1917." That initial package relied on the organization's 1901 "Standards for Automotive Fire Apparatus" as a model for the new design. The first draft was released and opened for comments in 2010; it was revised and published in 2012.

Many in the EMS industry took issue with the NFPA being the lead on the project. There were several items within the first NFPA 1917 plan that EMS officials found objectionable, among them an all-or-nothing requirement that limited modifications and a speed limit of 77 mph for an ambulance.

"They backed off on the speed limit. [They] backed off on the all-or-nothing clause, and the spec became a little more palatable," A.J. Heightman, JEMS editor-in-chief, said. "But it became

obvious. It wasn't just an objective problem, but a subjective problem. People in our multifaceted EMS industry didn't want one select provider group like the fire service dominating the ambulance design/standards process. It was akin to the fox guarding the henhouse, particularly when about 50% of all patients are transported in ambulances operated by non-fire, paid and volunteer services; third service EMS agencies; hospitals and private providers."

It became evident to industry observers early on that few groups outside of the fire service were interested in an NFPA-based ambulance standard. In an effort to develop a universal vehicle standard for the broad spectrum of EMS, CAAS—a not-for-profit organization that accredits ambulance services in North America—developed a ground ambulance vehicle standard called "CAAS-GVS-2015."

The GVS-2015 standard was developed by a committee of industry groups, associations and agencies, including the American Ambulance Association, National Association of EMTs, the International Association of Fire Chiefs and the National Volunteer Fire Council. In addition, the GVS committee wanted assurance that patient care and patient safety were integral in the design of EMS providers' workplace, and felt it important that some of the groups represented on the GVS committee were EMS physicians and nurses. Accordingly, representatives from the American College of Emergency Physicians, National Association of EMS Physicians and Emergency Nurses Association participated in development of the GVS standard.

The first draft of the NFPA document was released in 2014 and opened for public comment. A second round of comments is expected in early 2015, with adoption targeted by year's end. The NFPA expects to have its second edition of NFPA 1917 in mid-2015.

NFPA vs. CAAS

Since 2014, competition between the two sides has become the subject of much observation and speculation in the EMS industry.

From her position, Gainor said she wouldn't portray what's happening in the field as an NFPA versus CAAS battle. She also says she doesn't favor one over the other.

Chief Gary Morris of the Pine-Strawberry Fire District in Arizona—and a member of the NFPA 1917 committee—said that NFPA 1917 isn't a fire service standard, but one that incorporates the viewpoints of many. He also reports only 15% of the 30-member panel for the document has "fire department" attached to their titles. However, people close to the process note that several fire apparatus manufacturers who don't currently build ambulances were on the NFPA 1917 committee.

"A state EMS director said he would never accept any standard that has the word 'fire' in it," Morris said. "That represents the feeling of a lot of folks in the third service, the EMS side of things, when the intent was never to make it a fire standard."

Morris notes much of what's in the CAAS document is in NFPA 1917, and there are a lot of efforts going on to produce a similar standard.

"There's a lot of energy going on in a parallel direction," Morris said. "The NFPA has made repeated offers to [CAAS] to come and join. [The NFPA] welcomes any input into the standard and prefers a single high-quality standard with a lot of participation than two standards with duplicative effort."

Representatives from CAAS point out that after being invited and attending initial meetings of the CAAS standards committee, the fire service representatives stopped attending.

The proposed standards from either organization incorporate new Society of Automotive Engineers (SAE) requirements developed through an extensive body of National Institute for Occupational Safety and Health (NIOSH) and industry safety testing, which never existed before. As Van Arnam notes, these SAE standards are the best "real science" our industry has ever had. The new SAE standards were established utilizing actual ambulance rollover tests, sled tests and other dynamic test methods. Those tests led to the development of different specifications for litter retention, mounting and retention of equipment, occupant seating and restraint, and other associated ambulance safety criteria.

The CAAS mandate going into the GVS-2015 project was to create a specification that ensured the safety of the patient, provider and community; ensured the quality of ambulance design; supports and enhances the quality of patient care; establishes a performance-based design standard; supports efficient EMS operations; promotes fiscal efficiency and cost benefit analysis; and incorporates relevant emerging technologies.

"We wanted to make sure we had a standard that would cover all types of ambulances," Mike Hall, president of the American Ambulance Association, said. He added that providers who specialize in non-emergent BLS care would need different specifications than those delivering critical care ALS transports. "We needed something that fit across all spectrums."

At the heart of each program, of course, is a goal of improving safety.

"There's no question in my mind both organizations are interested in vehicle safety and the safety of the personnel in those vehicles," Morris said.

Because one unified plan hasn't emerged to take over for the Triple K program yet, observers say some challenges could arise. "Ambulance manufacturers can build to any standard," Fred Schimmel, president of the Ambulance Manufacturer's Division, said. "It's extremely difficult and expensive for a manufacturer to build and certify vehicles to multiple standards."

Schimmel added that it's "extremely important" to have an ambulance standard that will be universally acceptable to all of the various market segments. Getting the industry to agree on one standard is just one hurdle in a long race to get meaningful changes in place within the ambulance design and construction field.

Once the dust settles and either the CAAS or the NFPA plan gains acceptance, it's up to each state to sign on. Given that no universally accepted specification is in place now, it's unlikely states will immediately rollover and say yes to either program. Various constituencies would have to sign on, including the state legislature in many cases.

Morris said having two competing standards adds to the complexity of state EMS directors to sell a standard to their regulatory agencies. He also believes NFPA's international recognition and long history in the area of creating safety specifications will lead to it being the one adopted in the long run.

However, many industry insiders believe that CAAS appears to have the lead in national association and state EMS agency support. CAAS is hopeful that the GVS-2015 standard will be

embraced more than the KKK standards by the broader EMS industry and eventually achieve greater overall acceptance from state to state.

"I'm very comfortable with it," Hall said, who was part of the committee that created the GVS-2015 specifications. "It's a great standard. It raises the safety [specifications] and as an industry it makes us more aware of it."

Conclusion

In the end, the new specifications will be good for the men and women who spend their workdays and nights in an ambulance.

All involved also understand it will take upwards of a decade or longer after any specification is adopted to have an impact on all of the emergency vehicles on the road.

"The really big process, the hard work, the collaboration of all the agencies that participated was very remarkable. The product that was delivered was excellent and something that is going to help our industry move forward in every sense—standardization, safety and patient care—down the road," Hall said.

"You now have some science that's been funded, thoroughly researched and validated," Van Arnam said. "It's going to save people's lives. An ambulance is a dangerous place to be and needs to be as safe as possible for the providers and the patients."

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