



Karlin sees space, weight and balance as the greatest challenges of building a best-in-class crash tender. "Axles are rated as safe at a particular weight. For instance, on the Striker vehicle the front axle is rated as being able to carry up to 31,000 pounds safely. That means that the component will last over time and that the shock loads that it is involved with will not overstress the components. One of the most critical issues with safety however, is that the rating is limited to the weakest part of the axle. If the vehicle is overloaded, axle life will be shortened or it can suffer a sudden break. Likewise, if brake capacity is exceeded stopping distances are affected."

Oshkosh therefore has a comprehensive sales process consisting of much consultation and deliberation. "It is extremely important to us that the Fire Chief, and all others involved in the purchase decision process, understand that operator safety is a primary mission for Oshkosh. We help the department prioritise their needs and requirements. They are the ones that are going to fight the fire, and we have to give them the best vehicle possible."

The air crash tender business is extremely small compared to the conventional trucking industry, so it cannot easily support component and system development on its own, explains Karlin. "The number of fire tenders built in a year is very small compared to – for instance – the haulage industry. And because of this, development funds are very limited unless the price of vehicles is raised sky high. We are very fortunate in that through various sister companies we are able to share advanced technologies between the different product groups."

One of the most important safety features on the Striker vehicle is its proprietary TAK-4 independent suspension. Crash tenders are expected to respond off the runway, and if a driver is bouncing around the cab and cannot keep hold of the steering wheel, this poses a tremendous safety challenge. Karlin explains that the TAK-4 independent suspension gives the driver a high amount of control, especially in a stressful response situation. Oshkosh originally developed the TAK-4 system for its military range of vehicles, because these trucks work off road most of the time. He adds that the TAK-4 suspension prolongs the lifetime of the vehicle as it absorbs much of the stress that is experienced by the chassis. "Most aircraft don't crash neatly on the runway, instead they usually end up next to it. The Striker vehicle's TAK-4 suspension is therefore a tremendous benefit to reaching the scene of an emergency in the shortest amount of time possible," he comments.

At the other end of the spectrum Oshkosh recently invested in Pulse Delivery dry chemical technology that increases the distance at which dry chemical powder can be discharged. The distance at which a firefighter has to be positioned from the fire to be effective is called the stand-off. "In order to be effective with a typical fire extinguisher in the home while your oven is on fire, you have to stand right next to it. To date, dry chemical systems – even the 230 kg units onboard crash tenders, have to be discharged from approximately that same range unless mixed with the water/foam system. This can be very dangerous in any fire, as the firefighters have to stand extremely close to the fire or fuel to be effective."

The new Pulse Delivery system enables firefighters to work from a stand off of up to 27 metres from the fire. The system achieves this because of the way in which the agent is mixed with the propelling gas. The dry chemical is condensed, and the gas becomes a propellant instead of a carrier. "Recently introduced on our new Stinger Q4 Rapid Intervention Vehicle (RIV), we have been experiencing fantastic response to the Pulse Delivery dry chemical system." ■

Strike it in safety

The crash tender sector may be smaller than the haulage truck market, but that hasn't stopped Oshkosh from developing some innovative health and safety features, including the new Pulse Delivery system.

The Oshkosh Striker has gained almost iconic status in airport emergency response history, but apart from its famous angular appearance and its sheer firefighting power, a lot of thinking has gone into firefighter safety.

Steve Karlin, Director of Sales and Marketing for the Airport Products Group for Oshkosh Corporation, explains that there is a long list of chassis, body and fire fighting systems options for clients that wish to tailor the Striker to their own requirements. "One of the limits, however, is that contradictions may exist between what customers believe they need and what industry and government regulation requirements demand. We have to make sure that the client's needs fit within the standards that we all have to meet."

NFPA performance standards are geared towards vehicle acceleration and meeting the response times required by international aviation agencies, while also keeping the vehicle safe – and this includes side slope stability.

The Striker Aircraft Rescue and Fire Fighting (ARFF) vehicle is a custom built product and in order to produce the best performing vehicle tailored to the fire departments needs, it requires intense manufacturer-customer interaction. That is why the engineering staff at Oshkosh review all specifications to verify that the vehicle as specified will meet and exceed safety regulations.



The Stinger Q4 rapid intervention vehicle delivers strong knock-down power with a combination of QuadAgent and Pulse technology. Top: The TAK-4 independent suspension gives the driver a high amount of control during stressful situations.