

Urgent care

Ambulances have been quietly migrating from box bodies to a lighter panel van conversion. Meanwhile, a review published in September suggests that all UK ambulances should follow the same specification. Dan Gilkes reports

Demand for ambulance services continues to grow rapidly across the UK. Between 2009-10 and 2015-16, the number of ambulance calls and NHS 111 transfers in England alone increased from 7.9 million to 10.7 million, according to the National Audit Office. This is in part due to an increased number of elderly patients with multiple conditions, but is also said to be affected by an increase in alcohol consumption as well as mental health-driven issues and the reduced availability of primary care services in the community.

A recent review of ambulance productivity, by Lord Carter, engaged all 10 English ambulance trusts. The review found that operating the service's fleet of 5,000 vehicles costs around

£1.8bn a year. It identified potential savings of £500m that could be made in efficiencies by 2020-21.

One of the main findings was that those 10 ambulance trusts use a wide variety of vehicles. Indeed, there are currently 32 types of double-crewed ambulance in operation in England alone, and no standard list of what is carried on board. That's before you add on patient transfer vehicles and other healthcare models. There are also substantial differences in the age of the fleet between trusts, and different fuel delivery methods. (Regardless of those variations, VCA conducts roadworthiness approvals according to BS EN 1789:2000 + A2:2014.)

The Carter report stated: "To drive efficiencies in this area, a standard specification for an ambulance should



be developed. Trusts should work together to leverage combined purchasing power through centralised procurement."

Whether one duty cycle can apply to all ambulance operations around the UK remains uncertain. Regardless, some factors will be common to all service providers. First, as with any commercial vehicle user, weight – or more specifically payload – will be somewhere near the top of the list. Chassis are getting heavier, as Euro 6 emissions levels drive manufacturers to incorporate AdBlue systems and exhaust aftertreatment, so the demands on carrying capacity also increase.

This has led some fleets to move away from the traditional box body ambulance, which sits on a heavy-duty, often rear-wheel drive chassis, such as the Mercedes-Benz Sprinter, to a more integrated panel van conversion. The big winners in this move have been Fiat Professional with the Ducato (pictured above) and both Renault and Renault Trucks, with the front-wheel-driven Master van.

Panel van conversions tend to run at a lower gross weight, of 4.25 tonnes, while many of the box body ambulances run up to 5.0 tonnes. However, the lower floor of a front-driven van means that there is often no requirement for a heavy tail-lift at the rear, saving weight and increasing payload. The lower overall weight also helps to reduce fuel consumption and cut operating costs.

That's not to say that there is no





longer demand for a box body. Bradford-based Vehicle Conversion Specialists (VCS) has been combining the move to the lighter Fiat Ducato chassis and the continued demand for a box body with the development of a low-floor Fiat Modular Ambulance (pictured, left). The Low Floor Modular is equipped with VB air suspension and an integrated rear SG ramp, for ease of loading. The lightweight composite body structure features sacrificial low drag side skirts and sits on an AL-KO chassis that has been produced to a VCS design. Available options include slimline front and rear emergency lighting, Eberspacher climate control, an Intellitec task management system, under-bonnet fire suppression and Redtronic emergency LED lighting.

One of the UK's biggest ambulance

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Paul Croom, speaking about a full-electric ambulance conversion

converters, O&H Vehicle Conversions, has also recently launched a box body A&E ambulance, alongside its current van conversion ranges, though using the traditional rear-drive chassis. Constructed of lightweight aluminium, the boxy body has a new electrical control system that can be applied to any interior specification, and is flexible enough to work with different manufacturers' base vehicles.

While the box body looks set to be a popular addition to the line-up, O&H has also just delivered a number of Fiat Ducato-based ambulances to the Yorkshire Ambulance Service. Around 130 vehicles will join the Yorkshire fleet in 2018-19, with a further 120 A&E ambulances due the following year.

Richard Moyes, head of fleet services at YAS, says: "They are part of supporting the delivery of the new national standards for responding to emergency calls, and our wider vehicle replacement plan."

While Euro 6 is making ambulance chassis heavier, a possible future move to electric drive will make the bodybuilder's task even harder. However, ambulances and other blue light vehicles will be subject to many of the clean air zones that will be

introduced over the coming years, which means that a move to some form of electric or hybrid drive is inevitable.

"We've been looking to create a vehicle that's practical, but it's just not viable yet, especially for rural use," says VCS sales director Paul Croom.

Blue Light Services is another converter looking at the possibility of an electric driveline, claiming that every builder is trying to be the first to market with an electric ambulance. Blue Light's current relationship with the Renault Master may well put it ahead of the game, as the recently introduced Master ZE electric van and chassis cab take to the roads over the coming months.

While most bodybuilders will admit to looking at the possibility of an electric ambulance, German specialist WAS (Wietmarscher Ambulanz und Sondarfahrzeug) has already produced a concept vehicle, shown at the ESS show in Birmingham in 2018 (pictured, below). Based on a 5.0-tonne Mercedes-Benz Sprinter chassis, the concept had a WAS box body similar to the company's diesel-powered models. With an 87kWh battery output, the concept offers a predicted range of 75-120 miles, plus a top speed of 75mph. It is not intended as a prototype yet, but more as a way to get ideas into the market and gauge response.

An electric ambulance may look like a futuristic ambition at present, but with a growing number of electric chassis and vans coming to the market over the coming years, it is certainly not a pipe dream. Whether that will help to drive efficiencies, or create a common specification among NHS Trusts, remains to be seen. [TE](#)

FURTHER INFORMATION

The Carter review – <https://is.gd/uxehom>

New ambulance services specification – <https://is.gd/jjdodi>

New ambulance standards – <https://is.gd/elinod>

