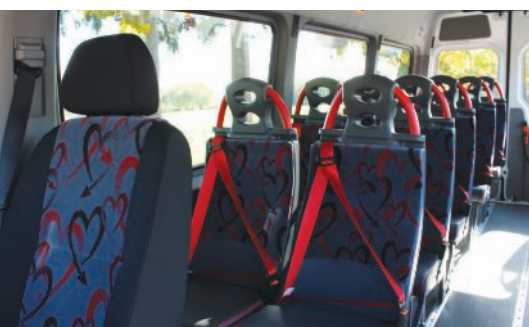


# WEIGHTING GAME

Building small buses on the backs of light commercial vehicle conversions is a juggling act. Steve Banner talks to body and coach builders seeking to enter the market

Small buses based on light commercial underpinnings are, on the face, of it an appealing option for subsidised services in rural areas. They are cheaper to acquire than conventional single-deckers, and they're more frugal, too. There remains, however, a question mark over their durability and reliability – and how well they stand up to seven days a week operations over severely potholed country roads or, for that matter, speed humps and stop-start suburban traffic.

This is a conundrum being addressed by KFS Special Vehicles, says sales and marketing director Steve Elwell. Currently merging with Advanced Minibus (of Clay Cross, Derbyshire), the Andover, Hampshire-based company



says this year will see a revised version of its 4.5-tonne gross 16-seater-plus-driver Freedom minibus.

"I think there's a market for it among bus fleets," muses Elwell. "However, the current model's side-access door has a single internal step and we need to design that out to make it wheelchair-accessible if Freedom is going to be used as a bus." Having said which, he adds that the firm already has a module for the destination display.

## CLEVER COMBINATION

Harnessing a cab from the front-wheel drive Fiat Ducato and marrying that to an AL-KO ladder-frame single-axle chassis with VB rear air suspension, Freedom is already in service. Users include government agencies and the voluntary sector, where it is used, for example, to transport senior citizens to day-care centres.

Wheelchair users can board and alight via a rear ramp or inboard cassette lift, but side access is required for bus work, too. Also, ferrying people to and from day centres is a far less arduous duty cycle than operating on a bus service for 12 to 14 hours a day.

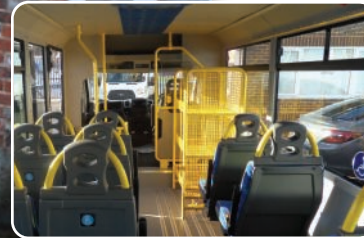
"Fleets that use Freedom in that way



will have to keep on top of maintenance," concedes Elwell. "And they may have to replace key components more frequently than if they were operating heavier vehicles. On the other hand, fuel economy will be far better with Freedom. Opt for the 150bhp 2.3-litre diesel and Fiat's Comfort-Matic AMT [automated manual transmission] and you should be able to achieve from 24/25 mpg to 28/29 mpg."

That means CO<sub>2</sub> emissions will be lower, too – an important consideration for operators wanting to attract council subsidies. "We could use the bigger 3.0-litre Fiat diesel but our customers tell us the 2.3-litre has sufficient power for their needs. Also, the 3.0-litre is 55kg heavier," says Elwell, emphasising that a challenge for any small bus bodybuilder is keeping the vehicle's unladen weight down and seat numbers up.

The point: while many features installed in light commercials over the past 20 years may be laudable, there is no denying they have also made them heavier. "Euro 6 adds another 50–60kg to Freedom," Elwell estimates. So, in a bid to keep down the kilos, Freedom employs an aluminium body frame clad with a single GRP skin and comes with



Rescroft CT Lite seats, which weighs in at 12.5kg each complete with two legs, a lap-and-diagonal belt and a headrest.

Such measures may not always be sufficient, say some converters. "Even with lighter materials, ultimately the only answer to keeping weight down may be to take a seat - certainly if you want to remain at 3.5 tonnes gross," asserts Mike Jones, production director at Kent-based light commercial and minibus converter Euromotive. So the days of the 16-passenger 3.5-tonne minibus have gone, he says. "The most we offer at 3.5 tonnes is 13 seats. If you want 16, you've got to go for something grossing at 4.2 or 4.5 tonnes."

Devon's GM Coachwork builds a 16-seater grossing at 3.9 tonnes but makes extensive use of composite materials to do so. Similarly, Renault - which has been busy promoting minibuses based on Trafic and Master for the past year - has a 16-seater Master that tips the scales at 3.96 tonnes.

Meanwhile, Antrim, Northern Ireland-based Nu-Track offers a similar product to KFS's Freedom under the City Dash banner. It, too, makes use of what Fiat's Ducato and AL-KO have to offer, with a Peugeot Boxer front end available as an

alternative.

Grossing at 4.5 tonnes and launched last year, like Freedom it can carry 16 passengers and comes with VB air suspension. As for the body, this employs an alloy frame but clad with alloy panels rather than a GRP skin. "We've already supplied four City Dashes to East Lothian Council," says business improvement manager Rob Shiels, who adds that, like KFS, Nu-Track has the bus service market in its sights.

**COMPOSITE BODY**

Yet another manufacturer offering a 16-seater with a Fiat front end is O&H Vehicle Conversions, of Goole, North Humberside. However, its construction is radically different to Freedom and City Dash. Its CM (Composite Mobility) Mission makes use of a chassis-less one-piece integral body made by Composite Mobility of the Netherlands, using high-strength vacuum-formed woven GRP foam sandwich panels.

Their advantages include lightness - 30% lighter than polypropylene - and an absence of corrosion. At the time of

writing, however, there is a question mark over the CM Mission, at least for the foreseeable future: Composite Mobility is part of the troubled Plastisol Group.

Moving on, concerns over ECWVTA (European Community Whole Vehicle Type Approval) seem to have abated now that converters have become more used to the processes. For example, all minibuses produced by Euromotive are subject to IVA (Individual Vehicle Approval).

"They're done at the DVSA's [Driver and Vehicle Standards Agency] own test station not far away from us, in Gillingham," says Jones.

"Occasionally there's a paperwork delay but in general we don't have a problem," he adds.

DVSA is, of course, steadily closing its own test stations. "If and when Gillingham shuts we'll look for a POTF [Privately Owned Test Facility] to handle our IVAs instead - or possibly become one ourselves," comments Jones.

Meanwhile, GM Coachwork has gone for full ECWVTA for some of its products, but uses IVAs for its bespoke builds. "With IVAs you have to book your slots in advance and there are times when it can be a bit of a juggling act," comments marketing manager Mathew Smith.

Getting this right is all about planning ahead, he adds. At the time of writing, planning looks all the more important, given that DVSA employees who are members of the Prospect trade union have voted for strike action every Friday for an indefinite period alongside an ongoing work to rule. Prospect has called for the DVSA to enter into talks over pay and Ts&Cs and has suggested that both sides should seek assistance from Acas, the conciliation service, to help resolve the dispute. [TE](#)