Automatic choice

The writing is on the wall for manual transmissions, as automatics take control – but fluid couplings are fighting back. Ian Norwell reports from Allison in Hungary

Truck, bus and heavy commercial gearboxes used to be a straight choice between the manual stick-stirrer or the sophisticated and smooth-shifting torque converter automatic. Not so today, with the automated manual transmission (AMT) having decisively stepped in between the two.

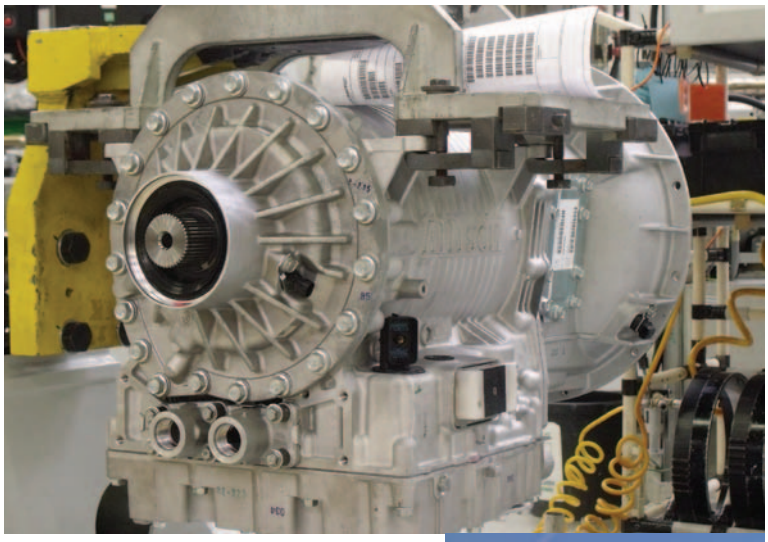
Automatic boxes go back further than most people may realise, with the first claim to automation made in the USA way back in 1904. But two forward speeds and ratio change by flyweights were not supported by the metallurgy of the time, so failure without warning was expected and routine.

After the semi-autos of the 1980s and beyond, it is surprising to think that it has only been during the last decade that we have arrived at a serious AMT for trucks. The arrival of affordable electronics that allow engines, clutches and gearboxes to talk has been the key. The issues that remain are cost of manufacture and operation – and driveability.

That said, the torque converter has always had sections of the commercial vehicle industry to itself – notably applications that defy the use of a manual gearbox and its friction surfaces. You wouldn't put a manual box in an articulated dump truck or in most refuse vehicles. So, while it's true that they have had to serve markets outside the mainstream haulage sector, nevertheless construction, buses, waste management and military collectively provide enough to keep a number of specialists well occupied.

Amongst them, Allison Transmission is the largest and probably best known. When challenged with the competitive march of today's AMTs, Michael Headley, Allison's vice president of marketing, sales and service, counters with confidence. "The AMT will always fundamentally be a manual transmission, with a wearing clutch and pauses in its shift regime that compromise its efficiency," he states.

Headley concedes that AMTs have stolen some of their clothes as far as ease of operation goes, but he points to Allison's upcoming TC10 transmission, due for market introduction in late 2012, as meeting this challenge head-on. We'll be looking at a 10-speed torque converter, with twin countershafts,



instead of the usual planetary gear construction used in Allison's heavy-duty autos. If this style of gearbox can get established in the long-haul sector, it could open up the potential of previously undreamt-of volumes for Allison.

And it might well do. It has taken the adoption of electronic controls to create the AMT and Allison says it will be utilising the same technology to perfect the TC10. "It is our objective ultimately to develop the TC10 as a serious alternative for long haul," confirms Headley.

Allison's plant in Hungary will produce a range of transmissions, including the TC10

New gearbox, new plant

With software that can control the fuel efficiency, and productivity gains from not wasting time and fuel between shifts, he has great expectations. However, the crunch for Allison's TC10 will be in changing not just gears, but perceptions. When it comes to fuel consumption, most transport engineers perceive anything with a torque converter as thirsty.

Meanwhile, Allison's new Hungarian plant is ramping up production. Over the next few months, it will be taking work currently with sub-suppliers into the plant, where a customisation centre is being established. This adds the bespoke peripherals and software set-ups required by individual OEMs. Customers will also be able to experience its product first-hand on the new 15-acre test track on site.

Watch this space: rather than being run out of town by the AMT, Allison looks to be getting itself prepared for an old-fashioned shoot-out. TE