

COMMERCIAL MOTOR

ROAD TEST

How will Scania's popular **Euro-5 EGR** perform?

Thanks to some high-profile deals, Scania is the only truck manufacturer doing better this year than last. Under the spotlight is its bread and butter, mass-market tractor, the R440, the first Euro-5 EGR to be tested by CM

Words: Kevin Swallow / Images: Tom Lee



Scania R440 Topline





At the start of the year, Cumbrian-based businesses Stobart Group and AW Jenkinson Forest Products ordered 1,000 Scania trucks in a joint-procurement deal. And since March, the new arrivals have been trickling into service (800 for Stobart and the rest for Jenkinson).

Year-to-date figures published by the Society of Motor Manufacturers and Traders up to and including September 2010 show the market is down 19.8% to 18,843 registrations, compared with 23,503 last year. The only manufacturer in the 6.0-tonnes-plus truck sector to make a gain this year is Scania, which has registered 2,549 units – up 5%.

The Euro-5 driveline that powers the vehicles in the Stobart/Jenkinson deal is the 12.7-litre exhaust gas recirculation (EGR), turbocharged, inter-cooled, direct injection with XPI six-cylinder engine, in both 400hp and 440hp versions.

Launched in 2004, the Scania R-Series won the International Truck of the Year Award in 2005. Revamped in 2009, Scania's new R-Series duly repeated the trick for 2010.

Key to the revamp was more driver-orientated devices, including Scania Driver Support, which executive VP and head of franchise and factory sales Marin Lundstedt claimed at its launch “will lower fuel consumption even further”.

Scania Driver Support is a real-time feedback system that offers tips and performance scores by assessing how the

accelerator, foot brake and engine brake are used.

In terms of tangible technical changes, Scania removed the start/stop clutch pedal to bring the truck into line with industry standards as a two-pedal truck. It revised Opticruise making it smoother, faster and more intelligent, and finally got to grips with the bottom bunk, so long an enigma to Swedish engineers.

It has revamped the cab exterior giving it a more aerodynamic profile with narrower slats on the grille, new side-skirts and rubber extensions on the air deflectors around the cab.

To improve fuel carrying capacity, the batteries can, if

In brief

Vehicle: Scania R440 LA6x2/2MNA Topline

Price as tested: £107,950 (plus VAT)

Engine: DC 13-10 Euro-5 exhaust gas recirculation, 12.7-litre six-cylinder with XPI

GVW: 23,800kg

Payload: 28,442kg



Test comparison data

Vehicle: RENAULT PREMIUM 450
Tested: 27/09/07

Vehicle: IVECO STRALIS AT 450
Tested: 27/08/09

Vehicle: MERCEDES-BENZ 2546
Tested: 08/07/10

SPECIFICATION

Importer: Scania (Great Britain), Tongwell, Milton Keynes MK15 8HB

Web address: www.scania.co.uk

Engine: Engine: DC 13-105 Euro-5 exhaust gas recirculation, turbocharged, intercooled, with Scania XPI direct injection

Cylinders: In-line six-cylinder

Bore x stroke: 130mm x 160mm

Capacity: 12.74 litres

Compression ratio: 17:1

Maximum power: 434hp (324kW) at 1,900rpm

Maximum torque: 2,300Nm (1,696lbf) at 1,000rpm-1,300rpm

Transmission: Scania Opticruise, 12-speed overdrive

Gear ratios: 9.16, 7.33, 5.82, 4.66, 3.75, 3.00, 2.44, 1.96, 1.55, 1.24, 1.00 and 0.80:1; reverse 11.95:1

Final drive ratio: 3.08:1

Clutch: Single dry plate, air assisted with clutch wear and protection

Brakes: Ventilated disc brakes, dual circuit, full air. EC brake system with Cat 1 ABS and traction control, pad wear indicator

Parking brake: Spring chambers on front and drive axle

Secondary brake: Air-actuated operated by brake pedal, and Scania hydraulic retarder

Brake dimensions: Front and rear, 430mm dia x 45mm

Chassis: Flat-top constant U-channel with riveted cross-members

Chassis dimensions: 270mm x 90mm x 9.5mm

Suspension: Front, semi-elliptic parabolic springs with swinging shackles and threaded shackle pins. Anti-roll bar; second axle, quarter-elliptic with air bellows, which can be activated from the cab to increase traction; drive axle, quarter-elliptic with air bellows, double acting telescopic shock absorbers are fitted to axles. Two-bag suspension on drive axle

Steering: Hydraulically-assisted recirculating ball

Wheels and tyres: Steel 8.25x22.5 10 stud wheels, tyres, front axle, 315/80R22.5; rear bogie, 295/80R22.5

Fuel/AdBlue tank: Twin alloy tanks, 860-litres/N/A

Electrical system: 24V CAN-bus

Battery/ Alternator: Twin 180Ah /100A



DASH DETAIL

There is plenty of storage in this Topline cab: lift the lid in front of the passenger seat to reveal a fold-out table for laptops; three lockers with trays beneath them are above the windscreen; further storage is found above the doors.

SCANIA R440 LA6X2/2MNA TOPLINE >>>

**Fact file: Plated weights**

GVW	23,100kg
GCW	44,000kg
Front axle	7,100kg
Middle axle	6,000kg
Rear axle	10,000kg
Unladen test trailer	7,000kg

Fact file: Test weights*

Kerb weight	8,558kg
Net payload	28,442kg

* With 75kg driver

required, be relocated to the back end of the chassis, and diesel tanks are deeper and wider. Quarter elliptic rear suspension is now two-bag, and a little lighter than previous designs, claims the manufacturer

CM's test truck, with the aforementioned DC 13-10 12.7-litre Euro-5 EGR engine, is rated at 434hp with 2,300Nm torque. Below it is the 394hp, which has 2,100Nm torque at its disposal, and above is the 473hp with 2,500Nm.

Transmission is either the optional automated 12-speed overdrive Opticruise, or standard manual 12-speed (plus two crawlers) GRS0905 with range change and splitter.

On top of the chassis is the CR19 Topline twin-bunk cab in standard specification.

Added extras include a battery master switch, extended side skirts, locking fuel caps, two luxury leather seats, leather steering wheel, exclusive interior lighting and metallic paint.

Recommended retail price for the R440 LA6x2/2MNA is £107,950, which includes the GRS0905R retarder, Hill Hold, and two years repair and maintenance.

An area of strength remains residual values: according to CAP, after three years the R440 is worth £30,800, which is £6,825 more than the Mercedes-Benz Actros 2546 Long Distance (CM 8 July), and after five years, at £20,100, the R440 is worth £5,400 more.

Productivity

On the scales this R440 weighs in at 8,558kg. That includes a generously proportioned 75kg driver, 860 litres of fuel, and 79kg for the Topline cab over a standard sleeper version. With a 70-tonne test trailer, that leaves a 28,442kg payload.

Fuel returns were hampered by ferocious cross winds on both days, and decent rainfall on the opening leg from the Midlands to Scotland.

According to the Met Office, gusts reached 25mph to 30mph on the opening day through the North-West, and ranged from 20mph to 25mph on the second through South Yorkshire and the East Midlands. Perhaps the final straw was the last section from Leicester to Hinckley down the M69 straight into a powerful headwind.

Fact file: Security

Engine immobiliser	✘
Alarm	✘
Central locking	✓
Deadlocking	✓
Secure bonnet	✘
Locking fuel cap	✓



Historically, this would have led to a retest, but with resources stretched in an age of austerity, it's a case of grin and bear it. That said, the figures stack up well enough: it returned 7.89mpg, a figure built from 8.7mpg on the opening day. Day two returned 7.31mpg. With no AdBlue, the running cost is £39.39p per 100km.

For the most recent perspective, the Mercedes-Benz Actros 2546 Long Distance returned 8.14mpg overall, with 8.85mpg on the opening day, and 7.62mpg on the leg home. It used 6% AdBlue, and the overall price worked out at £39.08p.

A wider, SCR-based database (all using between 4% and 5% AdBlue consumption) shows Scania's result is par for the course. Three other manufacturers have had two bites of the cherry: Iveco's Stralis 450 10.3-litre engine with 444hp produced first 7.76mpg (CM 20 December 2007) and then 8.11mpg (CM 27 August 2009); Volvo delivered 8.10mpg with its FH480 (CM 30 October 2007), while its FM11.430 returned 7.89mpg (CM 28 May 2009);





and Renault, first with its 12.8-litre Magnum 480 produced 792mpg (*CM* 25 October 2007), and then with its 10.8-litre Premium 450 scored 8.02mpg (*CM* 27 September 2009).

Still leading the way, with its only test, is the DAF CF85 12.9-litre 456hp truck, returning a leading 8.40mpg (*CM* 13 September 2007).

One of the four hill climbs (Castleside) was aborted due to roadworks. On the other three ascents, the R440 trailed the Actros 2546 by a few seconds, with the Swede conceding 22hp, but an extra 100Nm torque at its disposal.

On the road

These days driving a truck is more about trusting the ever-growing torque band, getting the best from it, and making sure you don't rev outside of its parameters, than harnessing its power. With 434hp, the old belief of having 10hp per tonne remains an adage whose sell-by date has come and gone. Here, with 2,300Nm available between 1,000rpm and 1,300rpm, guidance is offered by the transmission. If it's happy to change down to the grunt area, somewhere around 1,050rpm, it will, but if one thing has come out of this journey it's the belief that the driver must trust their own instincts too.

At 85km/h, the *CM* motorway test speed that stops the vehicle getting balked every mile or so, revs sit at 1,050rpm in its overdrive top gear. If an incline is detected by the truck, it will change down and, based on this test, three in 10 changes warrant it, while the other seven will require some sort of driver intervention.

The general rule of thumb with falling revs is on longer climbs take the change, if it's undulating and you can see the peak, hold the gear. With slower speeds on the A-roads, the driver has to play each situation as he sees it. The engine will lug below 1,000rpm, enough if the brow of the hill is within 200 yards or so, anything more than that change down.

What automation has done to the driving experience is allow the driver to concentrate more on hazard perception. Not so much errant car drivers determined to get past at any cost, but dealing with the unexpected.

At Castleside, just outside of Consett, is the notorious climb that has caught out many a test driver. After reining the truck back using the impressive five-stage Scania Hydraulic retarder as you drop down the 12% hill to the bridge, the plan is to select the right gear to hit the 12% going back up with some oomph.

Not this time. Roadworks stopped the truck in its tracks. With the incline wet we had to engage the load transfer device, which lifts the mid-axle and puts approximately 8.8 tonnes through the drive axle, to haul us out in bottom gear from a standing start.

Another welcome addition is Hill Hold, which holds the truck for three seconds after releasing the handbrake.

Throughout the test we used the Driver Support system

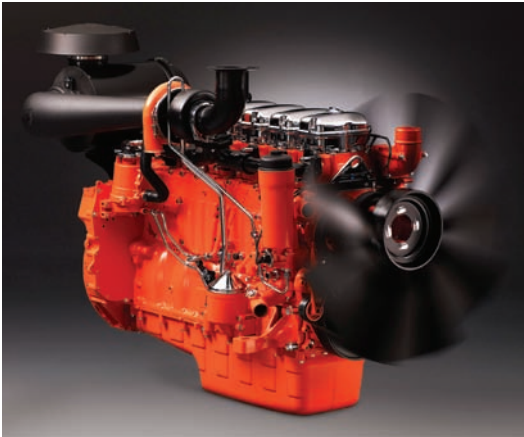


OPERATIONAL COSTS

Payload: As tested,kg	28,442
Servicing intervals: Months/miles	Variable
Servicing downtime: Annual hours	Variable
Contract hire: Per month	£1,863
Parts prices: Basket of spares	£660.83
Residual value: Three years	£30,800
Five years	£20,100
Dealers: UK/Europe	90/1,000
Warranty: Basic cover, months/miles	24/unlimited
List price: Basic price	£95,000

Service data

Servicing downtime: recommended standard servicing 120,000km/year UK trunking. **Contract maintenance:** One of a five-year contract, minimum of eight inspections, 120,000km/year UK trunking. **Parts prices:** Retail total of brake linings (full set); headlamp unit; door mirror; wiper blades; oil/air filters; clutch. **Residual values:** Trade value assuming 120,000km/year CAP Average Condition. Figures supplied by CAP Monitor.



assessing anticipation, braking and gear selection. Any real-time, in-cab tool to help the driver is positive. It is inconspicuous when trundling along the motorway or dual carriageway, but comes alive when negotiating A-roads, traffic lights, or roundabouts.

It delivers a five-star reward system that contributes to a percentage score for the trip. Any quick transfer from accelerator to brake or retarder scores badly.

Lift your foot off the accelerator early, allow gravity to slow progress to the roundabout/traffic lights/intersection before introducing the retarder for a *coup de grâce* as you arrive checking for traffic, the chances are you'll receive a full five stars.

Its mechanism for hill climbing isn't so assured: it docks points if you drive over the brow of the hill. It wants you to come off the accelerator before the summit and allow gravity to bring the truck up to speed. Still, it is early days and it's a good tool for the driver to have.

Cab comfort

This is the same cab that *CM* tested in our annual Cab Test (*CM* 15 April), and the biggest issue remained the bottom bunk. Scania's solution, after a much maligned mattress with add-ons, is a simple pull-out and retractable mattress. Its width is 710mm, which extends to 220mm. To accommodate the extra breadth both seats slide forward.

Under the bottom bunk is a slide-out drawer that can be a fridge if you tick the right options box. Separating this truck from the run-of-the-mill are a pair of optional luxury leather seats – just a bit too slippery on occasions when the truck is moving laterally, but very comfortable nonetheless.

On the back wall is a phone-like remote control for, among other things, the night heater, alarm, and radio, plus there is a switch for the roof-hatch and lights. The same

PERFORMANCE

Fuel consumption:

Overall	7.89mpg (35.8lit/100km)
Day one overall	8.70mpg (32.5lit/100km)
Day two overall	7.31mpg (38.6lit/100km)
Tough A roads	5.89mpg (47.9lit/100km)
Easy A-roads/motorways	8.46mpg (33.4lit/100km)
Tough motorways	7.82mpg (36.1lit/100km)

Average speed:

Overall:	71.1km/h
Tough A roads	52.3km/h
Easy A-roads/motorways	75.1km/h
Tough motorways	77.7km/h

Running costs: (diesel at £1.10/lit; AdBlue at 43p/lit)

AdBlue rate, % of diesel	0% of diesel
Fuel costs, £/100km	£39.39/100km
AdBlue cost, £/100km	£0.00/100km
Total cost £/100km	£39.39/100km

Hill performance: (minutes/seconds)

Miltonrigg Hill	1.28
Castleside	Aborted
M18	4.08
M1	5.36

ENGINE

Transmission is the optional automated 12-speed overdrive Opticruise; standard is the manual 12-speed (plus two crawlers) GRS0905 with range change and splitter.



“A welcome addition is Hill Hold, which holds the truck for three seconds after releasing the handbrake”

controls sit on the dash to the left of the steering wheel.

Lift the lid in front of the passenger seat and it reveals a foldout table designed primarily for laptops. There are 12V and 24V sockets and a connection for an iPlayer.

For storage, three lockers with trays beneath them are positioned above the windscreen. Additional storage is found above both the driver and passenger doors. There is storage behind the driver's seat on the sidewall, and a smoke alarm.

For drivers without vertigo, access to the top bunk is via a ladder that unclips, slides forward, and extends into place. Drivers who tramp might want a single bunk with additional storage on the back wall and space for a flat-screen TV and/or a microwave.

The curtains act as good blackout screens, but they aren't perfect. In this truck, the curtains stuttered around on runners, and the curtain that runs across the centre of the cab separating the bunks and seats doesn't take into account the bottom bunk's ability to slide forward. ■



VERDICT

Kevin Swallow



Fuel figures seal the fate of any roadtest, and Scania will be cursing the poor weather for hampering an excellent opportunity to set down an important marker.

This truck, the first Euro-5 tested with EGR, has an impressive bank of Euro-5 SCR tests to compete with and *CM* would suggest Scania returns in the New Year with another vehicle to show what it can really do.

While *CM* recommends you take the fuel figures with a pinch of salt, nevertheless they remain competitive compared with other tests in better conditions.

The added cost of AdBlue for the SCR trucks brings the overall running costs of the R440 and its competitors closer.

The plus points for Scania include resolving the bottom bunk issue, introducing a real-time support tool, tweaking the automated transmission and removing the third pedal.

Scania has long enjoyed driver and operator backing, which underpins very healthy residuals, and this truck helps justify that support.

As *CM* said at the Cab Test earlier this year, this vehicle is a decent stab at the perfect truck.

BEHIND THE WHEEL

Acceleration:	0-80km/h	32-64km/h	48-80km/h
(seconds)	51.38	21.0	26.2
Braking:	32km/h	48km/h	64km/h
(stopping distance, m)	Aborted - wet track		
In-cab noise:	48km/h	64km/h	80km/h
dB(A)	58.2	60.0	62.6
In-cab noise:	88km/h	Tickover	
dB(A)	64.0	51.5	

DIMENSIONS



Overall width	2,490mm	Internal height above bunk	
Overall length	2,265mm	(top/bottom)	617/1,938mm
Overall height	3,920mm	Bunk thickness	140/170mm
External cab height	3,930mm	Wheelbase (OAS)	4,000mm
Step heights	412/366/366mm	Front overhang	1,460mm
Cab floor height	1,511mm	Rear overhang	780mm
Internal cab length (max)	2,045mm	Fifth wheel height (laden)	970mm
Internal cab height (max)	2,295mm	Fifth wheel height (unladen)	1,000mm

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