A pleasure for driver and passenger

VIC OLIVER gets behind the wheel of the Volvo FH 440 6x4 truck tractor and comes away impressed

Our **FOCUS** Volvo FH 440 6x4 truck tractor test unit was coupled to a set of flat-deck inter-link trailers complete with fully loaded 6 m and 12 m ISO containers, bringing the total gross mass of the rig to 53 740 kg.

Using our normal test route along the N12 highway to Witbank (new name: Emalahleni) and back, we recorded a total distance of 240 km and used 111,1 ℓ of fuel, which equated to a good consumption figure of 46,29 ℓ/100 km (2,16 km/ℓ). However, according to the trip information displayed by the on-board computer, the overall fuel consumption was a slightly higher 2,2 km/ℓ.

On the road, I found the Volvo to be extremely quiet and driver- and passenger-friendly. Being behind the wheel was a pleasure, with all controls easy to use and, as a driver, I immediately felt at ease and in complete control of the 54 t rig.

The Volvo D13 six-cylinder turbo intercooled engine, which produces

Trip simulation results

These tables have been generated using ***TransSolve*** Transport Solutions Software (for a free trial CD, visit www.htm.co.za).

Volvo FH440 6X4 TT and tridem semi												
	Jhb - Dbn				Jhb - Cape Town				Jhb - Pretoria			
Simulation Results	**Laden 2 ways**		**Laden 1 way**		**Laden 2 ways**		**Laden 1 way**		**Laden 2 ways**		**Laden 1 way**	
Payload (tons)	32.1		32.1		32.1		32.1		32.1		32.1	
Distance (km)	1,140		1,140		2,797		2,797		113		113	
Time taken (hrs:min)	17:12		16:10		38:42		37:54		1:52		1:45	
Ave Speed (km/h)	66		71		72		74		60		64	
Fuel Used (litres)	603.9		471.8		1,328.7		1,071.3		63.4		50.2	
Consumption (ℓ/100 km)	53.0		41.4		47.5		38.3		56.1		44.4	
Fuel Price (R/ℓ)	9.50		9.50		9.50		9.50		9.50		9.50	
Productivity Factor	40.7		22.9		49.1		26.0		38.4		25.5	
Ave Distance p.a. (km)	79,937		98,055		107,505		118,962		20,687		34,263	
Ave carried p.a. (tons)	4,507		2,764		2,467		1,365		11,814		9,783	
Purchase Price (Rands)												
Chassis/cab	1,283,190		1,283,190		1,283,190		1,283,190		1,283,190		1,283,190	
Dropside body	280,000		280,000		280,000		280,000		280,000		280,000	
Interest Rate (%)	9.0		9.0		9.0		9.0		9.0		9.0	
Fixed Costs	**Rands/annum**		**Rands/annum**		**Rands/annum**		**Rands/annum**		**Rands/annum**		**Rands/annum**	
Instalments	389,381		389,381		389,381		389,381		389,381		389,381	
Crew	90,480		90,480		90,480		90,480		90,480		90,480	
Insurance	131,308		131,308		131,308		131,308		131,308		131,308	
Licence	17,316		17,316		17,316		17,316		17,316		17,316	
Overheads	69,833		69,833		69,833		69,833		69,833		69,833	
Total fixed costs	698,318		698,318		698,318		698,318		698,318		698,318	
Final analysis	**R/km**	**R/Ton**	**R/km**	**R/Ton**	**R/km**	**R/Ton**	**R/km**	**R/Ton**	**R/km**	**R/Ton**	**R/km**	**R/Ton**
Total fixed costs	8.74	154.94	7.12	252.65	6.50	283.06	5.87	511.59	33.76	59.11	20.38	71.38
Variable Costs												
– Fuel	5.08	90.10	3.97	140.84	4.54	197.84	3.66	318.98	5.36	9.39	3.78	13.24
– Tyres	0.71	12.59	0.71	25.19	0.73	31.81	0.75	65.36	0.03	0.05	0.32	1.12
– Maintenance	1.11	19.69	1.11	39.38	1.11	48.37	1.11	96.74	1.11	1.94	1.11	3.89
– Toll Fees	1.07	18.98	1.07	37.96	0.37	16.12	0.37	32.25				
Total Costs	**16.71**	**296.30**	**3.96**	**496.01**	**3.63**	**577.21**	**3.52**	**1024.91**	**4.07**	**70.49**	**3.70**	**89.63**

* Productivity = payload (tons) x average speed / fuel consumption (ℓ/100km)

Volvo FH 440 6X4 Truck Tractor
Road test by Vic Oliver

324 kW (440 hp) and 2 200 Nm of torque at low engine revolutions, is well suited to South African road conditions when operating at the 56 000 kg permissible mass allowance. Indeed, the 324 kW output is exactly the power that many professional long-distance operators have found to be optimal for vehicle productivity and fuel consumption.

In my opinion, the 12-speed I-Shift automated manual transmission combines the best characteristics and benefits of both a manual and fully automatic transmission. The electronically controlled splitter and range-change gearbox is designed for automatic changing and this is one of the factors making this vehicle so driver-friendly.

Travelling at the permissible speed of 80 km/h in top gear, engine speed is exactly in the middle of the maximum engine torque band, proving that the gearing is well matched and correct.

Seeing as this modern truck transmission can be operated in either automatic or manual, a clutch is necessary, but can be automatically engaged and disengaged without the driver's intervention. To optimise fuel consumption, it is recommended that the Volvo be driven in automatic, with the manual gear change mode only being used in adverse road conditions.

Our test unit was not fitted with a retarder, which is available as an optional extra on this model. As a result, I was initially concerned about being able to slow the heavily-loaded vehicle on steep downhill gradients without overheating the foundation brakes of the truck and its trailers.

Surprisingly, however, I found that if driven correctly using the Volvo engine brake – which develops an amazing 300 kW of retardation – and by selecting the correct gear via the simple flick of a switch on the gear-change lever, I could slow the vehicle almost to a dead stop by using the truck brakes.

When cruise control is engaged on the downhill, the selected speed is kept constant by automatically engaging the engine brake and using the correct gear - another nice safety feature.

A three-spring bogie-type rear axle and suspension system is fitted, giving the rear axles good oscillation, which is an added advantage in tough operating conditions. Rear axle diff-locks are standard.

The FH 440 6x4 has automatically adjusted drum brakes incorporating an ABS anti-lock braking system. Spring brakes are fitted to the front and first rear axle, making the braking system as safe as possible.

A trailer brake hand control is standard and, when operated, engages the trailer brakes without engaging those of the truck. The driver can test that the trailer brakes are working while travelling, and has the option of applying the trailer brakes to reduce the risk of a jackknife.

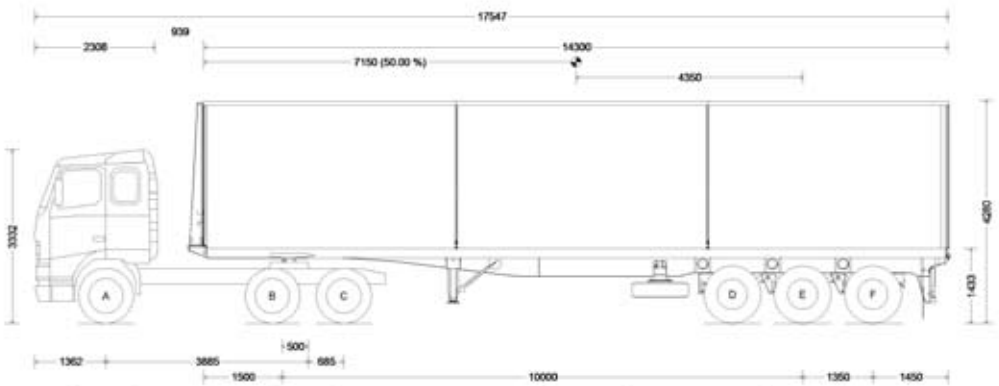
Cab comfort is supreme and well suited to long-distance haulage, with double sleeping bunks and adequate storage space. Air-suspended driver and passenger seats are fitted, while electronically adjustable and heated rear-view mirrors and an outside sun visor add to driver comfort and safety.

During the test drive it was difficult to find anything that I disliked about the vehicle. Indeed, the only negative comment I have is that the test trailers were old and the rear trailer had a bad air leak. This resulted in a marginal waste of fuel, as whenever the vehicle was stationary the air pressure dropped and we had to idle for a few minutes to build up sufficient pressure to release the spring brakes.

In summary, if I were a road transport operator looking for a long-distance vehicle capable of pulling a 35 ton load, the Volvo 440 would rank as one of the top contenders. ▮

TransSolve 2010

Loading (Side View - Summary)
Volvo FH 440 6x4 TT Sin-R I-Shift Retarder



Front	Rear		Total	Trailer
5,476 kg	3,982 kg	Unladen Veh.	9,458 kg	
260 kg	1,760 kg	Unladen Tr.	7,500 kg	5,480 kg
5,736 kg	5,742 kg	Unladen Tot.	16,958 kg	5,480 kg
1,796 kg	12,175 kg	Payload	32,122 kg	18,149 kg
7,534 kg	17,917 kg	Gross	49,080 kg	23,629 kg
7,700 kg	18,000 kg	Permissible	49,080 kg	24,000 kg
-2.16 %	-0.46 %	Overload	0.00 %	-1.55 %

Notes
- Trailer: Afrit 0204-33 14.3m Tridem Sliding Curtain Semi
- Legislation = South African Road Traffic Act

Warnings
- Left versus right mass distribution is not calculated
- Swing clearance not calculated for landing legs

Prepared By : Fritz Hellberg
Phone : 0317643150

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