

VOLVO'S 1973 news is all safety and interiors with some' detail dress-up gear on the outside. Rob Luck tried out the 164E flagship over 1200 miles, and crash-tested it as well...

T WAS just on 7pm as I hauled the Volvo off Captain Cook Crescent into Manuka Circle and picked up the through-lane for Canberra Avenue. We crossed the National Circuit and slid onto the State Circle, cruising two-thirds way around the big ring before edging across the traffic lanes and pointing the Volvo through the cats eyes marking the off-ramp onto Commonwealth Avenue. A minute later we were through Vernon Circle, cutting across the edge of the City Centre, shutting out the tension of the Sunday evening traffic with the muted sounds of a radio jazz program. We eased down Northbourne Avenue and out through the well-established suburbs of Braddon, Dickson and Downer as the darkness began to shut down this pleasant July evening and a sprinkling of stars appeared in the shadowy sky. By the time we had reached Watson and the outskirts of Canberra, car lights were flickering and the street lamps were on. Dusk was fading when I edged the Volvo to a halt in the left lane as cars ahead turned from both lanes into the Starlight drive-in theatre across the oncoming traffic at the start of the



COLOR PAGE: Bill Nolan is heading-up the bright new team at Volvo's Car And Truck Centre at Mascot, so we borrowed him and his car for this fine action spread. ABOVE: Revised interior lifts the Volvo into the price category it sells in, However smart new padded wheel obscures instruments.

BELOW RIGHT: Scuderia Veloce's Ged Oakley found this neat 164E for a photographic session — here it's shown with gaping bonnet revealing the crowded engine compartment.

were just lying there on our backs...staring in wonderment at each other...

Possible pending litigation precludes me from analysing the full circumstances of the incident, but an expert witness estimated the impact speed between the nose of the Celica and the rear of the Volvo at something better than 30mph.

In any case, some indication of the force of the collision may be gained from the fact that although I had both





feet firmly planted on the big brake pedal, the car left definite tyre scuff marks on the roadway for a distance of about 12ft.

l cannot assess whether the driver of the vehicle in front of mine was in any way aware of the approaching missile to the rear of me. It may well have been that he had some warning, for the skid marks left by the vehicle in question totalled more than 90ft leading up to the rear of the Volvo – a distance which indicates the sound of protesting rubber was audible for a period of probably two to three . Certainly, even if he were anxious to remove himself from the impending battle zone, he would have had to exercise due caution in completing his diagonal turn into the drive-in because of oncoming traffic. But in any case, he fortunately selected for his moment of departure, the precise instant when the Celica was trying to find an express route through my boot compartment – my last memory of the crash scene before I was relegated to the horizontal position was of his disappearing tail-lights as I tried vainly to arrest forward progress with the footbrake.

Perhaps in those few flashing, desperate moments before the impact, the said driver of the older vehicle in front had time to reflect on his position. Perhaps he considered that he was not wearing seat belts...that his car was not fitted with head restraints...that his seat was not orthopaedically tailored to his spine...that his seatback had no friction-clutch mechanism to lower him gently and progressively into a horizontal position as the impact occurred...perhaps, he was just thinking about darkness, the comfort qualities of the back seat, and the

ACCELERATION CHART	ROAD TEST BO V V V V V V V V V V V V V V V V V V
	they're fitted to maintain pressure.
ROAD TEST DATA – SPECIFICATIONS Manufacturer: AB VOLVO Gotenburg, Sweden. Make/Model: Volvo 164 E Automatic Body type: 4-door Sedan Priceing: a tested: \$2,23 basic: Automatic Trans: \$475, Pusbuttors reading \$48, Air Context of the State of the St	STEERING   Type: Recirculating ball & nut with safety column of telescopic type power assisted.   Turms lock to lock: 15.7 to 1   Turms lock to lock: 3.7   Wheel diameter: 15.625 in. (39.7 cm)   Turning circle, between kerbs: 36ft (10.39 m)   BRAKES 36ft (10.98 m)   Type: Power assisted, dual circuit, discs all round Dimensions:   Swept area: . Power 10.7 in (27.1 cm) Rear 11.6 in (29.46 cm)
ENGINE Six in-line   Gviinders: Six in-line   Correstation: 3.56in (88.9mm) x 3.16in (60mm)   Compression: 181 CID (2916c)   Aspiration: Fuel injection   Fuel pump: Fuel injection   Fuel recommended: Super   Valve gea; 0HV   Max, borque: 175 lbs.ft. (29kg.m) @ 2500rpm	DIMENSIONS   4380,111.     DIMENSIONS   107 in (271,8 cm)     Track, front:   53,1 in (134,9 cm)     overall length:   15ft 6in (464,3 cm)     width:   67,1 in (170,4 cm)     height:   56,5 in (143,5 cm)     Ground clearance:   7,1 in (18cm)     overhang, front:   30,8 in (78,23 cm)
TRANSMISSION	EQUIPMENT
Type [locations:   3-speed automatic, floor shift, Clutch type:   stp     Gear   Direct Ratio   overall Ratio   mph/1000   (km/h)     1st   2.39   8.46   8.6   (13.8)     2nd   1.45   5.13   14.3   (23.0)     3rd   1.00   3.54   20.7   (33.3)     Final drive:   .3.54   .5.4	Battery:
Final drive: 3.54	Fuel tank:
CHASSIS AND BODY Type: Unitary Weight as tested incl. fuel, oil, water (no occupants):	Fuel tank: 12.8 gall (55.3 litres)   Engine sump: 10.5 pints (6 litres)   Final drive: 2.8 pints (1.6 litres)   Gearbox: 10.9 pints (6.2 litres)   Water system: 17.5 pints (10 litres)   WARRANTY, INSURANCE, MAINTENANCE.
SUSPENSION	RUNNING COSTS
Front: Independent with rubber mounted control arms and stabilizer. Rear: Live, carried by longitudinal rubber mounted control arms transverse location by rubber mounted track rod. Shock absorbers:	Registration:

Quoted rates are for drivers over 25 with 60percent no-claim bonus and where the car is under hire purchase. This is the minimum premium level — decreasing rates of experience and lower age groups may have varying excesses and possible premium leadings. young lady nestled securely under his left arm. Perhaps I even do him an injustice ... he may well have been thinking about the movie he was about to pay to see . . .

I do not know and quite frankly I do not really care. If I was asked for an opinion at all, I would say he had no right to be in those circumstances making a right-hand turn from the left lane. But he didn't bother to leave his name and address and he certainly didn't stop, so I doubt I will ever take issue with him.

What concerns me more, is that, after supplying the relevant details to the

good gentleman of the constabulary, my passenger and I were able to re-enter the aforementioned carriage, replace the seat-backs in their former position and drive undisturbed and substantially unruffled back to Sydney. I suffered no pain ... my neck and back did not ache ... I had no injuries ... and my car was still completely driveable. All lights were functional, and though the bootlid could not be locked, the strong spring-loading enabled it to be closed shut without even the addition of a piece of wire or string . . .

"HE incident just described occured only last year while road testing a 1972 Volvo 164E in preparation for the comprehensive six-car comparison featured in MODERN MOTOR November. Since there are no major mechanical variations in the just-announced 1973 model, I consider the incident highly relevant to this test. Particularly since Volvo Australia based their entire 1973 model launch on safety.

A major first for Volvo in Australia is the inclusion of side-intrusion barriers. Volvo employs heavy tubular bars proved in their Experimental Safety Car to minimise lateral impact.



Warranty:



SAFETY is a prime sales feature – facing the wrong direction may not please every toddler, but Volvo guarantees it's safe. Rear tail-lamp treatment (below) increases visibility, looks better too.





Other safety features include safety-padded steering wheel (which unfortunately cuts down on instrument visibility), more powerful halogen headlamps on sports models, flame resistant upholstery, revised safety dash treatment, child proof door locks, lighter steering through revised geometry, and an optional child safety seat.

Almost simultaneously with the announcement of the new models, Volvo released details of the Breda Investigation conducted over 12 months in Sweden. The report established a 32percent reduction in injury rate through wearing seat belts and showed that 55percent of people killed would certainly have lived if they had been wearing a seatbelt.

Dr. Michael Henderson of the NSW Traffic Accident Research Unit in commenting on the report stated that "seat belt wearers who want all the other safety refinements being researched, would get only a relatively small amount of extra protection at a cost that would be high compared with that of a seat belt."

Henderson said it was "downright scandalous" that far too many seat belt systems in modern cars were uncomfortable and inconvenient.

"Volvo sets a notably good example in the degree of social conscience they demonstrate — particularly as this affects car safety," said Dr. Henderson.

Rightly or wrongly, Volvos are taking over as the respected safety kings of the road. This was a leading factor in their 1972 sales performance — the company increased sales 38.8percent on 1971 to register a clear leadership in the luxury car class with 3082 vehicles over Mercedes on 1771. In three years, the company claims it has leaped from 8percent market share to 23percent.

One of Volvo's major reasons for scoring well, is its wide model range. The 1973 cars encompass a broad price structure from \$4650 (142 DeLuxe Manual) to \$7550 (164E Automatic).

Since the 164E is becoming increasingly popular and is the model flagship, we selected it for our first test.

Optioned-up with air-conditioning and other equipment, it totalled \$8253 which is a lot of money. However, the car still doesn't have a lot of competition at that figure.

A Mercedes with comparable performance is around \$3000 more (although it is certainly more luxurious), a Peugeot 504 injection is close to \$3000 less, although it doesn't have the looks and luxury appeal yet in this country.

And other cars like the Jaguar XJ6, Rover and Triumph are variously more expensive, smaller, or dated in their styling.

hiked the big Volvo out of Sydney for an extended 1000-mile test to establish just what makes the car tick-over.

I didn't have to go very far to approve the car's new integrated air-conditioning system. I rate it as the best I've ever tried in a production car, regardless of price, and certainly worth its stiff \$595 price tag.

The unit is beautifully stowed out-of-sight for a completely integrated appearance — yet it has also been designed for rapid after-sales installation as well.

The centre console carries the control system — a rocker switch for on/off operation, two arrowed refrigerator-style knobs to adjust temperature and fan speed, and square two-phase switches to vary the direction from floor to defrost and switch-over to recirculation.

The evaporator unit is stowed completely out of sight, the condenser radiator uses a new tube-system for ultimate efficiency and employs a heavy duty Bosch fan that runs permanently when the air is on, and a big York compressor is employed. There are outlets everywhere — four huge aircraft-style tube nozzles scattered along the dash, floor-level outlets in the footwells and further floor-level outlets for rear seat passengers via special subdued ducts at the rear of the front seat.

A major reason for the unit's supreme efficiency is the local integration and adaptation of the working components. The work was carried out by Air International, the thriving specialist Melbourne firm directed by Owen Johns.

I consider the air-conditioning a must for this car — anyone willing to fork-out over seven-and-a-half would be foolish to ignore the "air".

It's particularly necessary in the 164. Although the car has good ventilation from big windows, opening quarter vents (thank God Volvo had the sense to retain them), and a reasonable through-flow system, people driving this sort of car don't usually want to put up with having their heads blown off with drafts through open windows in the interests of staying cool.

The cockpit is naturally very hot. It has big glass areas, and the front seat passengers sit with their legs enclosed in little cubby houses, buried deep into the engine compartment. The seats get hot and sweaty — and slippery. "Air" is obviously the answer.

The entire cockpit area is a great improvement. The big padded quad-spoke wheel looks and feels pleasant, and has been reduced in size to give more legroom (proportionate adjustment of the steering geometry has ensured wheel movements aren't increased in the process).

However only a six-footer can see the instrumentation clearly, and shorter drivers get a reducing view ranging down to nearly nothing. This is a pity in view of Volvo's detailed and excellent attention to instrumentation.

The old strip-speedo and dinky gauges have been hurled out, and replaced with boldface squareline instruments. The speedometer is a big square dial with circular lettering pattern (unfortunately the instrument' is still located in its left-hand-drive position to the left off centre). It is calibrated to 140mph and the car is capable of achieving most of that.

The dial also includes that subtle Volvo trademark — the million-mile odometer — plus a trip guage (reset simply by depressing the reset button once).

In the centre of the panel is a smaller gauge for the tachometer which is neatly and clearly marked. Above it, are big square red segments for parking brake and brake failure warning, plus direction indicators and high-beam warning light. On the right are two vertical strip gauges for engine temperature and fuel level, plus the rest of the warning lights.

The whole dashboard and console arrangement is completely reworked and divided up into sections of crash-absorbent material, with the circular cut-outs for the through-flow outlets dominating the treatment.

Most controls and switchgear are located on the shrouded centre console arrangement where they would be easy to reach even if inertia reel seat belts weren't standard equipment.

A disappointing omission is some storage space for those odd items people insist on collecting in cars. There is no provision of a little tray for cigarettes or tapes, either, in the dashboard area or between the seats where a small upholstered bin could be accommodated. The lockable glovebox is also very small.

The cockpit is obviously set-up for safety and convenience, but there's just a hint of the concept of "Big Brother Is Watching You." You drop into the leather lounge and smell and feel the luxury of real leather right off.

Plunge the key into the ignition switch/steering lock (perhaps the best installation on a production car yet) turn it, and the engine whirrs into life. Reach-out and select any forward gear and a big red dashboard light immediately glares at you. If you want to turn it out, you have to reach-up. pull the inertia-reel belt down, and plug it in its socket. You're mad if you don't anyway, but you have to be an auto-electrician to beat it - there's a sensor in the seat cushion, another one on the gearshift and one in the seat-belt mount. Congratulations to Volvo for having the courage to make

such an excellent system standard equipment.

The Volvo is a smooth, easy car to drive. One of the immediately outstanding points is the high, commanding driving position and the excellent visibility. Admittedly some drivers initially feel as if they're top heavy and rush to lower the seat with the adjustable-height control. But since hood clearance is good, this is unnecessary — you get a far better view of what's going on in all directions from the uppermost position.

All-round visibility is excellent probably the best of any sedan on the road. And Volvo has ensured that it stays that way in all conditions. The rear screen is heated, (the warning light needs brightening for day-time use — perhaps a rheostat control would do the trick), and demisting of the front screen is practically instantaneous.

Despite protracted rain during the test, the side windows never misted-up, and the subtle tint on the side windows and rear screen reduces glare noticeably.

The interior rear vision mirror is the best I can remember using, and the exterior mirror also provides first-class vision. The quarter vents don't present a severe obstruction to vision (the interiors of the pillar is cleverly covered with a light-colored buffed-alloy dress strip that means you tend to look straight through the post, instead of having to look around it.

Driving comfort is generally set-up for sedate motoring, which belies some of the car's actual mechanical specifications.

For example, the leather seats in the 164E are flat with little lateral support to resist cornering forces. The leather material makes them alternatively hot and slippery, especially when you develop a sweat, and since the inertia-reel belts don't provide constant location, there's no lateral support during even moderately fast cornering.

Volvo personnel insist that the sort of man who buys the 164E isn't likely to generate the cornering forces that will shift him in his seat. I strongly disagree – particularly as many Volvo enthusiasts move up to the larger car as the result of growing families, but still want to us the performance of their machine.

And if, as Volvo claim, cornering performance isn't important to this sector of Volvo's clientele, I am bound to ask them why they haven't adjusted the suspension for greater ride comfort, rather than for rigid cornering.

Basically, the Volvo's ride is over-firm for a luxury car, and I believe unnecessarily so. In conjunction with this, the seats are not up to the general specifications of the car despite vertical seat cushion adjustment, lumbar adjustment et al.

(Continued on page 105)



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## *VOLVO 164E*

(Continued from page 77)

It is difficult not to be impressed by the Volvo's appetite for consuming miles with speed, safety and sure-footedness. The injection allows the six to work willingly right up to 125mph and the car will constantly realise 115mph on flat straight sections.

Averages in excess of 100mph are possible on sweeping open roads, and the car will put down much higher averages than most competitive machinery in tighter sections as well.

Acceleration is also responsive and smooth at all speeds. The automatic shift leaves a little to be desired in speed, but is smooth enough. However, passing speeds in drive range are still most impressive.

I tried three cars for this test — the major road test vehicle prepared by Volvo Australia, a photographic car from Scuderia Veloce on Sydney's Northside, and a third car from the Volvo Car and Truck Centre at Mascot, which was also used for color photography.

The test car was equipped with the new Olympic radials, which gave excellent road-holding, and good wet-weather performance. But they were both noisy and harsh. The other two cars were equipped with Dunlop SP Sport tyres which gave a much softer, quieter ride.

I had few major complaints with the 164E, and without exception my criticisms are directed at driving comfort. The throttle loadings on the test car were far, far too high – after four hours behind the wheel, my right leg was aching from the pressure of holding the gas in.

The high beam light was distractingly bright, and the high beam equipment was inadequate at the top of the speed range. However, the wide-spread fog-lights were excellent, and I believe should be re-wired so they can be pulled-in in conjunction with the high beam lights and long range spots (at present they can only be used on low beam).

VISIBILITY is the best in the business – and Volvo maintains that boast for all weathers, Cabin space is really set-up for four in a "leather lounge,"



77) noise, and an improvement in engine-to-cockpit soundproofing is desirable. The wheel wells are another source of unpleasant noise and require additional protection against stones. On the test car, an annoying source of noise was the electronic fuel injection which whined and peeped constantly. The compartments at either end of source ar are well-corranised. The pool is

the car are well-organised. The boot is excellent — deep and clean with the spare stowed in the side well to avoid unloading too much luggage for a wheel change.

The car generally requires better sealing for protection against wind

For the test trip, I loaded in three large (28in.) alloy cases of test equipment, two suitcases, a big toolbox, spare five-gallon fuel container, various soft luggage and some small cases. You couldn't ask for more.

The boot is set-up with a high load lip, but that's one of the prime reasons for the extreme crash-resistance of the rear end design. The high-speed rear-end crash in the earlier car produced a total repair bill of little over \$300 - very modest under the circumstances.

The bonnet compartment is opened by a pull-thong under the dash. The compartment is well packed with air-conditioning and injection equipment, but neatly and clearly laid out. Access to some of the functions is naturally awkward but the plugs, distributor, coil and water pump are pretty accessible.

The car swallowed a quart of oil in 1000 miles of hard going. But the engine also suffered a malfunction during the test. On the final of four performance runs with the computerised fifth wheel attached, the engine started to break down, the temperature gauge began rocketing up the dial, and was off the clock by the time I had stopped 15 seconds later.

When the engine had cooled enough to accept some boiling water, we analysed the problem as a water seal blown out where the water pump makes contact with the cylinder head. Unfortunate — but one of those things that can happen on test. Volvo maintains they have never previously experienced a failure in this area.

Fuel consumption ranged between a low of 13mpg (achieved at 100mph average) and a high of 24mph established in a 200-mile open road section covered at an average of 50mph with little or no traffic.

Around 18mpg is a fair high-speed cruising average, and will yield in excess of 220mile cruising range – barely adequate. However the fuel injection is designed to get fuel into the engine for performance, and using wide throttle openings sends the economy plummeting.

Basically the car is well designed, thoughtfully engineered and well assembled. Finish is above average for an Australian car. And I can personally attest to its safety engineering ...

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