



LETTER

ENGINEERING AND LEGISLATION WITH JOHN VARETIMIDIS

INTERIOR MODIFICATIONS PART 2

AUDIO

Interior modifications such as sound systems and visual display units can be fitted to most vehicles without any major modifications. Sound systems, when fitted, may not directly affect any Australian Design Rules, though when modifications are carried out to install stereo components they may affect the structural integrity of the body.

When additional speakers are fitted to the rear parcel shelf of a vehicle, any additional cut-outs to the body will directly affect the integrity of the body, including seatbelt anchorages, child-restraint anchorages and, in extreme cases, affect the vehicle's resistance to impact in a collision.

Most late-model vehicles are designed to very stringent safety standards to meet compliance with ADR 69/00 Full Frontal Impact Occupant Protection, ADR 72/00 Dynamic Side Impact Occupant Protection and ADR 73/00 Offset Frontal Impact Occupant Protection. These Design Rules will be directly affected when any structural modifications are carried out to the vehicle.

Installing speakers in the side doors that require any structural modifications will affect the side-impact safety standards and ADR 29/00 Side Door Strength. Rear speakers in the parcel shelf may impose on access to ADR 34/00 Child Restraint Anchorages.

All vehicles manufactured since approximately 1977 are required to have provision for one child-restraint anchor point per adult rear seating position.

If you are considering fitting additional speakers, you should install speakers that do not require any structural modifications to the bodywork and do not obstruct access to the child-restraint anchor points.

VISUAL

Visual display units, when fitted to vehicles, must meet the requirements set by ADR 42 General Safety Requirements. ADR 42 specifies a few guidelines for the installation, location and visibility of any television and visual display units.

In general, the unit must be securely fixed to the vehicle to ensure it can withstand the forces of an impact. The unit must not obscure the driver's vision and not obstruct driver or passenger movement within the vehicle. The unit must also be located in a position that will not increase the risk of occupant injury.

Any visual display unit that is not used as a driver's aid (such as a navigation system) and is purely for entertainment must be installed so that no part of the screen or display is visible from the normal driver's seated position.

Any additional components fitted to a vehicle, including visual display units or replacement instruments and steering wheels, must have a dull surface finish.

ADR 12 Glare Reduction in the Field of View sets guidelines to minimise glare of surfaces that are within the driver's field of view. This basically restricts the use of chrome finish or any high-gloss surface finishes to original or additional interior components in vehicles.

Internal rear-vision mirrors and external side mirrors are designed and manufactured to meet the requirements set by ADR 14 Rear Vision Mirrors. This Design Rule specifies the minimum requirements for any rear-vision mirrors to provide a clear and reasonably uninterrupted view from the driver's seating position to the rear of the vehicle.

The mirrors are positioned to suit the correct field of view, and they must also satisfy the minimum surface area set by the ADR. Aftermarket or replacement mirrors must meet the minimum criteria and continue to comply with the ADR.

Internal sunvisors are rarely modified and generally not considered when a vehicle is modified. Internal sunvisors are used to shield the driver's eyes and other front passengers from direct solar glare.

Sunvisors have been a compulsory requirement for vehicles since 1972, though most manufacturers have been fitting them since the 1950s. Sunvisors are generally constructed using energy-absorbing materials to limit the possibility of injury in the event of an impact.

EXTRAS

ADR 42 General Safety Requirements covers transmission controls and gearshift controls. All automatic transmissions must have a selector fitted that indicates gear selection.

The transmission selector must also allow the use of an inhibitor switch or mechanism that prevents the engine starting in any of the drive gears and permits starting in the park or neutral gears. The indicator must also illuminate to indicate the selected gear and be clearly visible from the driver's seating position.

Manual gearshift controls or levers must indicate the location of the gears relative to each other. A label or indicator is embossed on the gear-selector knob or fitted adjacent to the gear selector on the centre console assembly.

The guidelines mentioned in this column are strictly for information only and under no circumstances certify any approval. It is your responsibility to ensure you seek advice from an approved engineering signatory to ensure your vehicle will continue to comply with all applicable rules and regulations.

Be sure to check out the latest Draft Vehicle Standards on the following link:

www.dotars.gov.au/transreg/vsb/vsb_ncop.aspx **SC**