



## 18.1 Definitions

18.1.1 Eye Ellipses - The eye ellipses shall be the 95th percentile eye ellipses defined and positioned in the Society of Automotive Engineers Recommended Practice J941b - Motor Vehicle Driver's Eye Range, suitably handed for right hand steering.

18.1.2 Visual Indicator - That part of an instrument or device intended to display information for the driver and includes any specified label. \*

## 18.2 Visual Indicators

The display of information presented by the following visual indicators, if fitted, shall be subject to control under this Design Rule.

Group I

- (a) Speedometer
- (b) Turn Signal lamp indicators
- (c) High beam indicator

Group II

- (d) Tachometer
- (e) Odometer
- (f) Stop lamp failure indicator
- (g) Service brake failure indicator lamp
- (h) Oil temperature and pressure indicators
- (i) Water temperature indicator
- (j) Battery charge failure indicator
- (k) Fuel level indicator

In cases where more than one visual indicator is provided for any one of the functions covered by (a) to (k) above, one only need be considered as a Group II visual indicator for the purpose of the Design Rule.

## 18.3 Location of Visual Indicators

18.3.1 All visual indicators specified as Group I in clause 18.2 shall be totally located between two vertical planes inclined at 20 degrees left and 20 degrees right of the longitudinal axis of the vehicle and passing through the most forward points of the left and right 95th percentile eye ellipses respectively. Such indicators shall be totally located above a plane inclined downwards at 35 degrees from the horizontal and including a horizontal transverse line through the most forward points of each of the 95th percentile eye ellipses and below a plane tangential to the bottom of the eye ellipse which includes a line at ground level transverse to the longitudinal axis of the vehicle 11m forward of the rearmost eye ellipse point.

18.3.2 All visual indicators specified as Group II in clause 18.2 shall be totally located between two vertical planes inclined at 40 degrees left and 25 degrees right of the longitudinal axis of the vehicle and passing through the most forward points of the left and right 95th percentile eye ellipses respectively. Such indicators shall be totally located above a plane inclined downwards at 35 degrees from the horizontal and including a horizontal transverse line through the most forward points of each of the 95th percentile eye ellipses and below a plane tangential to the bottom of the eye ellipses which includes a line at ground level transverse to the longitudinal axis of the vehicle 11m forward of the rearmost eye ellipse point.

\* Amended July 1980

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18.4 Visibility of Visual Indicators

18.4.1 The requirements of clauses 18.4.1.1 and 18.4.1.2 shall be met when:

- (a) the steering wheel is in the straight ahead position;
- (b) the turn signal lever is in the neutral position;
- (c) in the case of column change automatic transmission vehicles the gear selector is in the 'Drive' position;
- (d) in the case of column change manual transmission vehicles, with 2 or 3 speed gear boxes, the gear selector is in 'Top' gear position;
- (e) in the case of column manual transmission vehicles with more than 3 forward gear ratios the gear selector is in 'Top' gear position or the next lower gear position whichever is the more critical in terms of obscuration of visual indicators.

18.4.1.1 All visual indicators other than indicating lamps shall be totally visible when viewed from each pair of eye positions in the 95th percentile eye ellipses except that:

- (a) in the case of Group I visual indicators, the portion of the steering wheel rim including its supporting arms that is below a plane tangential to the top of the eye ellipse and the underside of the highest rim cross section cut normal to the rim, shall not constitute an obstruction; and
- (b) in the case of Group II visual indicators the steering wheel rim and its supporting arms and attachments thereto shall not constitute obstructions.

For the purposes of this clause 'totally visible' shall mean that the sum of the views from each of the two eyes includes all the visual indicators.

18.4.1.2 Any object which represents an obstruction to any single eye position within the terms of clause 18.4.1.1 shall have no surfaces, in the line of sight to the visual indicator, which present a metal finish with a specular gloss exceeding 40 units when measured by the 20<sup>0</sup> method of ASTM Standard D523-62T June 1962.

18.4.1.3 All indicating lamp visual indicators shall either be totally visible or an area of not less than 18mm<sup>2</sup> with dimensions such that a 2mm diameter circle is totally enclosed within the area, shall be totally visible when viewed from each single eye position in the 95th percentile eye ellipse. The obstruction exemptions provided for in clause 18.4.1.1 shall also be applicable to this clause.

18.4.2 The vehicle speed indicating element shall be of such colour or contrast as to differentiate it from the viewed background.

18.4.3 All visual indicators other than indicating lamps shall be provided with variable intensity when illuminated.