

# Vision Testing for Drivers

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Late last year (1995) I reported to my regular doctor for my medical check to enable me to continue driving trams in a manner safe for my passengers and other road users.

There were tests for my colour recognition and of my peripheral vision. These tests seemed to be adequate and relevant.

But the main test of direct vision was:

1. to read letters on a wall chart
2. which was static
3. at a distance of about 4 metres
4. under artificial (fluorescent) light in the consulting room.

It would seem to me, as a fully qualified traffic engineer and as a tram driver, that the direct vision test is irrelevant in EVERY single aspect. Basically, if anyone gets to drive a tram through a doctor's consulting room then please let me know! But let us take those four aspects one by one.

1. What do I read as I drive my tram? In Bendigo the most exciting reading is the destinations on the buses (and the registration numbers of occasional car drivers who are intent on self destruction). In Ballarat the only thing to read is the notice on a caravan reading "Ballarat's Ice Cream Man". When driving trams we don't read. We SEE. We need cognitive (recognition) skills, not reading skills.
2. If there is anything static in front of my tram then it has broken down. A tram driver has to recognise and identify MOVING objects and to anticipate to where and how fast those objects are moving. We need to be aware of motorists who just don't see us, and of pedestrians who do see us and then panic. These are our real cognitive skills.
3. If I am driving my tram at a pleasant 25kph and I see a body lying on the road just 4 metres from my eyes then it's goodbye Freddie! You and I are normally looking 100m, 200m, 300m ahead trying to anticipate the movements of vehicles coming towards us. Here I am, stationary in the Lakeview Loop at Bendigo, looking at another tram a half-kilometre away at the Gold Memorial, trying to see and anticipate if he/she is going to enter the single track first or should I. But here is my good doctor asking me to read a wall chart at 4 metres! There are a lot of car (and some truck) drivers out there who can't see in focus beyond about 20 metres. No wonder we have so many collisions on the roads. And part of the blame lies in tests like this which just do not examine distance vision.
4. If I am driving my tram under fluorescent lights then I have just entered the depot! I was taught that there are 3 types of cell in the eye that record our vision. They are:
  - A. the daylight cells for direct daylight vision,
  - B. the peripheral cells for peripheral daylight vision,
  - C. the night cells for direct vision in darkness.

Notice that there are no real cells for peripheral night vision, which is one reason why drivers become focused in their headlight beams at night.

The reason that oncoming headlights on high beam can blind you at night is that your eyes are slow in switching from cells C to cells A. Then you see nothing for a moment after that car passes until your eyes change back to cells C. Opposing headlights on high beam in daylight do not blind you because your eyes are operating on cells A. Now, under fluorescent light the eyes are confused. It is neither daylight nor darkness. There is just NO way that an eye test under artificial light is an indicator of eye performance under natural light. I need glasses to read under artificial light. I do not need glasses to read under natural clear light.

Dr. John Ott in a *Readers Digest* states, "The elimination of certain wavelengths by fluorescent lights sets up a distortion of the natural light spectrum, which in turn confuses the brain".

So, where does all that leave us?

I know that the eyesight test which I did is the regular test for truck and bus drivers in Victoria. That does not make it right. The wall chart test is in every single way inappropriate.

I believe that COTMA should take a lead and devise a test that is far more appropriate and therefore would hold more relevant and positive defence for a tram driver in court. Let's face it. If you hit someone you can end up in the courtroom. You need to know that your eyesight test will really support you.

The test MUST be OUTDOORS and MUST involve IDENTIFICATION of MOVING objects (and their COLOURS) at distances of 5 TO 500 metres. Is that car green or blue? Is that tram coming towards us or going away from us? Is that car accelerating or decelerating? Are those pedestrians waiting to cross the road or are they just talking? Tests NEED to be done in SUNSHINE, in GLOOM, and by NIGHT.

I well remember my first car driving licence test at the ripe young age of 18 tender years (many decades ago). The examining constable (a pleasant chap) asked me to read the number plate on that yellow Hillman 50 metres over there in the car park. I answered that it was not a Hillman but a Vauxhall. To that he replied “Excellent” and proceeded to tick the square on his sheet before I had read the number plate. Although the Vauxhall was stationary it was one of many cars in the car park but the only yellow one. In one stroke of genius that constable had tested my eyes for daylight, distance, colour and cognitive ability. He had got it right.

### **Discussion to paper**

All motor vehicle drivers in Australia require medicals depending on age—a similar provision is applicable to New Zealand. Some organisations, eg PTC in Melbourne, are instituting their own tests additional to the standard eyesight chart test to help alleviate the problems suffered by some immigrant staff with inherited problems. Some railway organisations had eyesight testing vans that had coloured light testing equipment plus the Ishihara Test. PTC have contacted optometrists to try to help immigrant workers as well as devise a more suitable test for drivers which involves movement. It was felt that the current tests have some validity but may require review and that these alterations must be incorporated into law. It was felt that COTMA through Bill Kingsley should liaise with the PTU to keep abreast of developments, because of perceived inadequacies in the current tests.

It was interesting to note that all attendees wore glasses!