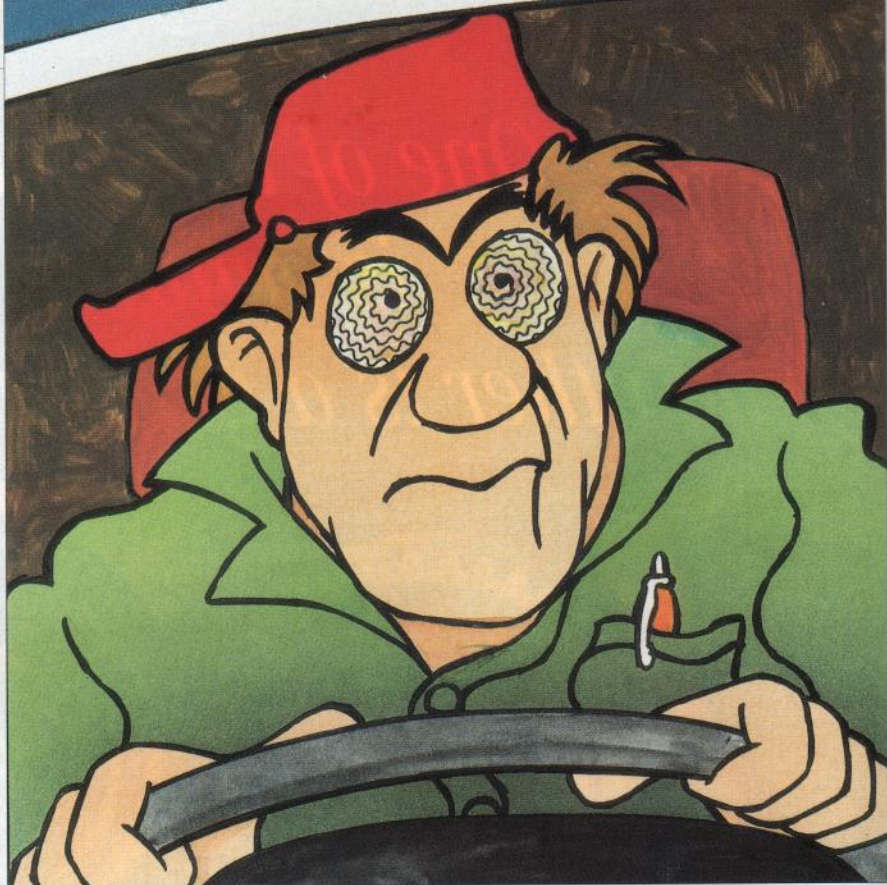


DRIVER WATCH

Everybody has heard of driver fatigue. However, what is getting increased attention both locally and in the United States is a phenomenon called DWA - Driving Without Awareness.

You've probably experienced it - you are awake and rested but realise when you reach your destination that sections of the journey have gone by without you even noticing them. *FleetWatch* **correspondent**

Dave Scott examines the issue.



HIGHWAY HYPNOSIS

Alcohol-induced DWA is couched in the legal term of sane automatism. It happens after a heavy night on the town when the sorry creature staggers to the mirror in the morning and asks his reflection: "Where were we last night?"

However, don't confuse sane automatism with DWA which can occur in the mind of a relaxed, fit and sober-minded driver.

Clinically known as the principle of entrainment, where the mind follows outside patterns, DWA has to be recognised as a serious pitfall to someone behind the wheel of a rig hauling 55 tons at 100km/h - very few travel at the legal 80 km/h. This type of driving demands quick reaction and decision making.

Bigger than fatigue?

Doug Condra, editorial director of the authoritative USA magazine, *Heavy Duty Trucking*, posed the question in a leader article in the Feb '95 issue. 'Could DWA be a bigger factor than fatigue?'

According to *Heavy Duty Trucking*, the USA National

Transportation Safety Board (NTSB) regards truck driver fatigue as a major culprit in accidents, based on recent studies. The facts drawn from the USA are worth noting as a mirror image to the southern Africa road transport industry, and for operators to benchmark themselves against. The significant findings from the NTSB research and listed in *Heavy Duty Trucking* were:

- Of 107 drivers who had survived single truck accidents, 62 of them - or 58 percent - were fatigue related.
- Drivers in fatigue related accidents had slept an average of only 5.5 hours in the 8-hour rest period before the accident, and an average of 6.9 hours in the 24-hour prior to the accident.
- Many truck drivers get their sleep in small segments - average four hours at a time - which hampers driving abilities.
- Sleeper berths actually promote fragmented rest and do not provide quality sleep. However, a more recent survey of 754 USA long-haul truckers revealed that 62 percent obtained their best sleep in the vehicle sleeper - only 31 percent said they slept best in a motel.

- The 8-hour off-duty period in the USA does not consider the time needed for eating, personal hygiene, recreation or the inability to fall asleep immediately.

Now add to all this the concept of DWA and you find the picture is not a pretty one.

Highway hypnosis

DWA is experienced by all drivers as 'highway hypnosis' and follows a condition in which the driver becomes mesmerized and fails to anticipate the need to respond to an unexpected situation.

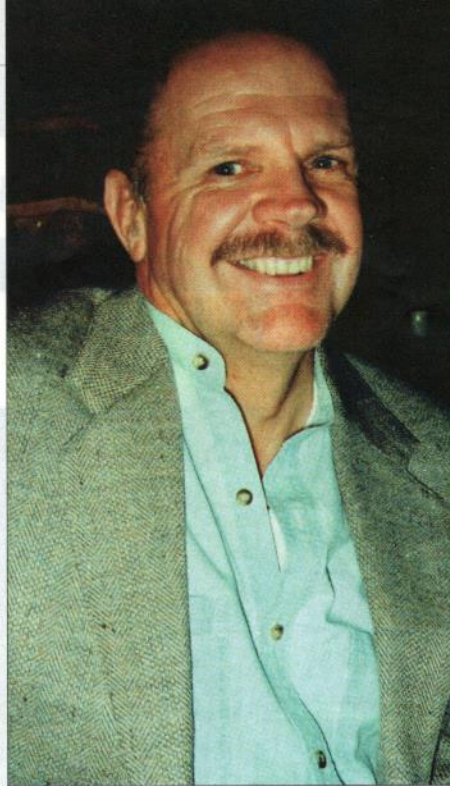
In addition to conscious perception, the brain is also capable of perceiving things without being consciously aware of them. *FleetWatch* spoke to clinical psychologist, Armand Kruger, who put it clearly: "It is not what you see or hear - it is what your brain does with it. The brain sees the outside world as its code. It is a closed system that will readily pick up patterns in light and sound format which it comes across".

He cites as an example a vehicle travelling down a tree-lined road. "In this situation, the strobe light effect inside the vehicle caused by the intermittent flashes of the sun can bring on a minor form of epilepsy - petit mal, or absence seizure. For a brief period of three to five seconds, there is a total loss of consciousness and concentration. No-one is home, and the brain has responded to outside stimuli to shut down of its own accord," says Kruger.

Brain waves

Let's go into a few of the technicalities here. Brain waves are measured in Herz units and have been identified to occur within four coded levels:

- **Beta:** Occurring at 13 plus Herz, beta waves have small close peaks and are often charted when a person is awake and alert. This is where there are high levels of concentration and is the ideal state for driving a vehicle.
- **Alpha:** This is a state of deep relaxation. The 8 to 12 Herz alpha wave signifies the alert, relaxed mood in which a person



□ **Armand Kruger - "It is not what you see or hear - it is what your brain does with it. The brain sees the outside world as its code. It is a closed system that will readily pick up patterns in light and sound format which it comes across. People are more in a trance than out of a trance".**

is highly receptive to outside signals. This state can be induced through hypnosis, meditation, listening to music, and even by watching television. Kruger tells us that this is a very natural and creative state of mind but not ideal for driving a vehicle. "The alpha condition has a narrow span of attention with a slow tempo, and the focus is on the inside - not the outside," he says.

- **Theta:** At 4 to 7 Hertz, this is a state of sleep or deep trance.
- **Delta:** A condition of narcosis - or when the brain is endangered by injury of disease - may cause the brain to lapse into delta wave emission at 1 to 3 Herz.

In Kruger's opinion, the top end of the alpha code is a natural phenomenon. "People are more in a trance than out of one," he says. No doubt all management will agree with this!

Driving Without Awareness - DWA - occurs at the mid-to-bottom range of the alpha code. DWA or highway hypnosis takes precedence over fatigue. The potent additive of fatigue only promotes and hastens the progression of the driver's mind from alpha into theta. It is then that the driver will nod off.

Constant battle

The act of driving is a constant battle of demand to stay in the beta not alpha condition. Says Kruger:

"The brain is the traffic co-ordinator and a neurological retard from beta to alpha means a slow body as the physical condition adjusts to the mental condition. This can slow reaction times by between three to five-seconds. In fact, a five second reaction delay is easily achieved in a state of fatigue and that's more than enough for a disaster to occur."

In South Africa, the possibility of a driver experiencing a combination of fatigue and DWA is very real. Consider the following:

- There is no recognition or enforcement of driving hours in South Africa.
- Many of the vehicles on long hauls have inadequate or no sleeper cabs.
- There are very few roadside facilities for rest in a secure environment. This encourages the driver to push on against the onset of fatigue.
- Incentive programmes are in place which are structured on a base income plus additional cents per kilometer over certain target distances - or a straight percentage of turnover. Such programmes promote prolonged driving.
- There is widespread use of dagga in the belief that this counteracts the effects of fatigue.
- The SA Road Ordinance is stretched to the limit of 22 metres and 56 tons plus the unwritten extra allowances of 15 percent on an axle and a 5 percent on GVM. This demands even greater driving concentration.

Minds and bodies under siege

In all, the minds and bodies of South African drivers are under siege. In fact, the low accident figures for heavy-duty trucks compared to other national accident statistics are remarkable when one considers the circumstances of the road transport industry.

Responsible operators such as Sentinel Transport have instituted an enforced rest period from 23h00

to 04h00 when their drivers may not be on the road.

"We've established secure sites on major routes which our drivers can easily reach by 22h00 and where they use up the enforced rest period," says Gideon Booysen, Sentinel's Boksburg branch manager.

Taking into account that very few South African trucks are fitted with air-conditioning, and that there are long distances to be covered in monotonous circumstances, even the rested healthy driver working for a responsible employer can fall prey to the problem of DWA. This goes for light and heavy vehicle users in the challenge to remain in the beta state of concentration behind the wheel.

Given the current set of circumstances, one must then ask what practical tips can be given to drivers to help them avoid DWA and fatigue. Armand Kruger puts forward a few suggestions:

- If driving all night, beware the critical hours of the early morning before sunrise. It is then that you will easily slip into the relaxed alpha state followed by the next pattern of theta and sleep.
- Sun visors must be adequate and working. There are times in the early morning or evening when the sun shines into the eyes with a strobe effect and the brain will, on its own accord, react to this stimuli.
- The focus and reach of headlights is critical in night driving. A beam that is too short can result in a similar strobe effect which the brain will pick up on and react to.

DRIVER WATCH

- In-cab music must be upbeat. Low, slow romantic music or music with a slow heavy base drumbeat are translated by the brain into alpha waves, and the body reacts accordingly.
- Slight movement raises the levels of concentration - chew gum, move your shoulders and, while smoking is not to be encouraged, the action of moving with a cigarette, not the nicotine injection, is a wakeful action. Wind the window up and down at irregular intervals - feel the rush of air on the face and hands.
- Check that you are sitting upright. Don't slouch. The reason for this is because breathing and posture go hand in hand. Do not slide down and slump behind the wheel. Do not get into deep slow breathing in the area of your diaphragm.
- In these days of modern communication, arrange irregular calls from base. The talker must be trained to be excited, fast and the agenda varied from a standardised list of items to which the driver must respond. Keep the brain in the beta level.
- Avoid big meals and alcohol. Small frequent meals are preferable.
- Find out what your drivers are doing among themselves to stay

awake that can be added to this list.

- Run an internal dialogue which centres on the expectancy of achievement, the reaching of the destination, the satisfaction of the customers, the delivery of the load and pride in a job well done.

Driver training has to be taken beyond the realms of manipulating the vehicle controls. The development of attitude and self-knowledge are vital to combating the combined effect of fatigue and DWA. These subjects have to be explored with drivers.

The response of the brain to visual stimuli and its own interpretation of the stimuli places even more importance on visual acuity and vehicle technical features that support clear pictures at speed. Fleet audits reveal an alarming lack of testing for eyes and trends in eye health. Poor eyesight can only accelerate highway hypnosis and fatigue.

Heavy Duty Trucking points to the fact that DWA has been under study for some time in Europe. It appears that inattention and the failure to perceive are the biggest single causes of crashes.

There is much more than just fatigue to address among our drivers - the training of the past has to be overhauled as well. In addition, incentive schemes must be examined from the point of view of not only how much a driver earns, but also to what limits he pushes himself in the process.

Perhaps it would be wise to remember that we are dealing with sociable human beings, not manipulators of controls.

Edan Traders (Pty) Ltd

Tel: (011) 795-1944
Fax: (011) 795-1005

EDAN TRADERS (PTY) LTD
for
USED TRUCKS

Also buyers of
used commercial
vehicles.

- We stock a large selection of used truck tractors, fixed bodied trucks and trailers.
- All vehicles are very competitively priced and come with roadworthy and fitness certificates (COF).

Contact: Mike, Eddie or De Waal