

References (cont)

Turkington P.M et al 'Time course of changes in driving simulator performance with and without treatment in patients with sleep apnoea hypopnoea syndrome' Thorax 2004; **59**: 56-59

DASS Specification

DASS Steering Wheel: designed for desk mounting.

Size: 35cm (14")

Weight: 300 g

Powered: From Midi interface

Temperature Range: 0 - +40°C

Interconnecting Cable: between USB and steering wheel

Cable type/ length: USB/2m)1.5m

Computer requirements:

Microsoft Windows™ 98SE /NT-SP6/ 2000/ XP with midi port or USB adapter

Software is Stowood Scientific DI2001 on CD ROM

Version 2.6.1

E&OE

SSI

Stowood Scientific Instruments Ltd

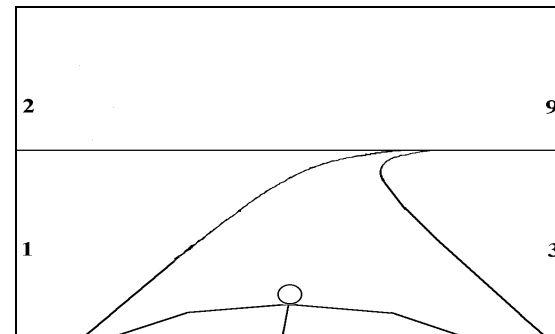
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DASS
Divided Attention Steering Simulator



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DASS

Divided Attention Steering Simulator

Two tests in one:

2D ('GEORGE') and 3D ('LANDSTRAD')

There are two types of divided attention steering test that can be performed with DASS - the 2D 'turbulence' test based on the work of George et. al. and the 3D 'road' test based on the work by Land and Stradling. Both types of test require the user to track within a specified area of the screen (using a steering wheel) whilst visually searching the periphery for a target number amongst a sequence of numbers being displayed in each of the four corners of the screen.

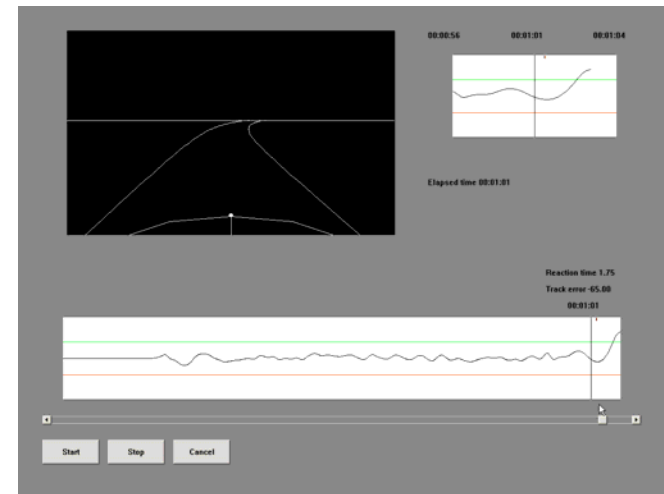
The 2D test is designed to emulate driving down a motorway while being buffeted by side winds. The subject is required to steer the car (keep a cursor within a central white box which represents the safe space for a car) while a forcing function (a sum of sinewaves) is applied to move the car sideways. The divided attention part of the test is that the subject has to respond with button presses to target numbers appearing in the four corners of the screen whilst steering the car.

The 3D Road test is designed to emulate driving down a winding road. The subject is required to steer the car (keep a car within the road outline). The test automatically stops if the car is off the road for 15 seconds. The divided attention part of the test is that the subject has to respond with button presses to target numbers appearing in the four corners of the screen whilst steering the car.

Analysis of both tests and visualisation of the 3D results are available.

The role of the DASS?

Primarily to investigate intra-subject variability as for example pre and post treatment a there is quite a large inter-subject variability in the test due to skill differences.. If an objective inter-subject test is required we suggest that the OSLER test be used.



Replay of the 3D test allowing the subject to see when he/she left the road.

References:

George C.F.P et al 'Simulated Driving Performance in Patients with Obstructive Sleep Apnea' *Am. J. Respir Crit Care Med* (1996)154 pp 175-181

George C.F.P et al 'Comparison of Simulated Driving Performance in Narcolepsy and Sleep Apnea Patients.' *Sleep* (1996) 19(9) 711-717

Land M.F. and Lee D.N. 'Where we look when we steer' *Nature* (1994) 369 742-744

Land M.F. and Horwood J. 'Which Parts of the road guide steering?' *Nature* (1995) 377 339-40

Juniper et al 'Steering simulation performance in patients with OSA and matched control subjects' *Eur Resp J* 2000 15 590-595 (Abs)

Hack et al 'Randomised prospective parallel trial...' *Thorax* 2000; **55**; 224-231

Philip P. et al 'Fatigue, 'Privation de sommeil et performance sur un simulateur de conduite chez des jeunes conducteurs automobiles' (Nov 2000) 7eme Journees du G. Sommeil, Montpellier

Philip P et al. 'Fatigue, Sleep Deprivation and Performance on a driving simulator in young car drivers' *J Sleep Res* (2000) 9 Supl 1 303 Abs

George C.F.P et al 'Reduction in motor vehicle collisions following treatment of sleep apnoea with nasal CPAP' *Thorax* 2001 Jul; **56**(7) 508-12