

Driven to Drink: Some Issues for the HCP in Evidential Police Station Procedures – Thursday 15 July 2021

Dr Paul Williams

BSc, MSc, PhD, C.Chem, FRSC, FCSFS



Paul was born in Portsmouth, England, in February 1950, and educated at Spring Grove Grammar School, Hounslow, West London: there he gained 'A' levels in chemistry, biology and physics. In 1968 he went up to the University of Wales Institute of Science and Technology, Cardiff, from where he graduated in 1971 with an Upper-Second in applied chemistry and applied biology.

From then, in late 1971, still at the University of Wales Institute of Science and Technology, Cardiff, he commenced a four and a half year research program on alcohol, under the direction of Dr TP Jones; and, initially, alongside [the now] Professor AW Jones. This full-time research work was heavily focused towards the development of alcohol sensing technology for breath analysis. However, it also involved many practical and detailed studies on the fundamental principles of alcohol physiology in the body; and its analysis in the breath, blood and urine. During this research period Paul personally carried out many hundreds of experiments on human subjects, who had been administered alcohol.

This alcohol research work resulted in Paul receiving the degrees of MSc and then PhD in chemistry, plus of course the development of the fuel cell alcohol sensor that is now used by Lion Laboratories Limited at the heart of their range of Lion Alcolmeter® breath alcohol analysers as used by the Police in the UK and worldwide for traffic law enforcement. He has continued his work on alcohol to the present day, full time, during his employment with Lion - as both International Marketing Director and Head of Forensic Support. He retired from Lion in February 2015, and, since then has operated on a part-time basis in his role as a self-employed forensic science consultant.

He is now frequently consulted by the Crown Prosecution Service and the Police to conduct various types of alcohol calculations in drink-drive prosecutions; as well as in cases of murder, manslaughter and rape. He also works for insurance companies or lawyers instructed by them in civil cases, in which the alcohol level of one or both parties is a key issue.

He is also now working with several Government committees on various drink-drive countermeasures.

Paul is married to Susan and lives in Cardiff. He has one daughter, Charlotte: she attended medical school in Manchester and is now an Intensive Care Consultant.

In his spare time, he enjoys good food and wine [cooking and eating it!], rugby, cricket and fly fishing.

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Learning Objectives

To Understand

- Excess alcohol: The basis of the legislation: Section 5 of the Road Traffic Act 1988
- The basic concepts of evidential breath analysis
- The issues of Home Office Type Approval
- The three Type Approved instruments: which Police Force uses what?
- Basis principles of the legislation: somewhat of a departure from PACE
- Deep lung breath sampling: the requirements of the subject
- Breath sampling requirements - FEV1, FVC, PEFR measurements
- Dealing with cases of 'Fail to Provide' specimens:
 - The role of the Police Officer
 - Was it '*would, but couldn't*' or '*could but wouldn't*' ... ?
 - Did the subject TRY to provide ... ?
 - The role of the HCP: how can he or she help? ... and hinder!?
 - Examination of the driver ...
 - The concept of 'Reasonable Excuse': what can be, and what can't be
 - Stress and anxiety
 - Fear and phobia
 - Too drunk to blow
- Excess alcohol: possible issues and defences:
 - Laced drinks
 - Post driving consumption [the Mellanby Effect]
 - Inhalers
 - Hand-sanitisers
 - Foods
 - Medication
 - Auto-Brewery Syndrome [versus **consumption**]
 - Oral sex
 - Interfering substances
 - Antabuse
 - Reflux
 - Ketoacidosis
- Blood case issues:
 - Just one specimen
 - Shaking the vial