

# Alcohol and driving – an unavoidable threat for road safety ?

presented by

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## Introduction

Alcohol is a substance used by human beings as a stimulating drug since thousands of years, it is part of the social life in many societies. This is acceptable and will not change drastically in the future. But the consumption of alcohol has negative effects in the complex modern world, it is for instance a threat for road safety. Alcohol and impairment must be excluded from these areas.

Traffic safety in general has been improved in the last 2 decades, when the statistics of fatal accidents are looked at. The quantity of these accidents decreased year by year. But in the last 2 to 3 years this trend stopped and was even reversed in some countries .

Unfortunately the society and the public seem to accept this situation, only spectacular accidents with air planes, ships and trains are coming to general attention via the media.

But the absolute size of the problems in road traffic safety is **unacceptable** .

For example in the European Union ( around 370 Million people) there are year by year around 40 000 deaths and 500 000 hospitalised casualties. The economical costs of these casualties are near to 70 billion EURO ( around 65 billion US \$).

Statistically in around 25 % of these accidents alcohol is involved as a reason. But more than 25 % of the economical costs are generated by alcohol related accidents, because these accidents are more severe than others.

Probably the picture is similar in the rest of the world.

Can this be avoided ?

To some extent – **yes** .

## **Measures to improve road safety –general aspects**

Any effective action to decrease these threats has to be supported by political decisions. Goals have to be set and programs have to be established to achieve these goals.

A vision has to be developed.

For instance in Sweden this vision is called :

„ **VISION ZERO - road traffic without casualties**“

The European council is promoting a road safety program demanding to decrease the road toll to until 2010 to 44% of the rate in 1995. ( The goal!)

The 5 main actions supported by the program are focussed on :

- intrinsic car safety
- promotion to improve acceptance of belt systems etc.
- improvements in road constructions
- reduction of alcohol related accidents
- promotion activities for road safety

Probably these 5 items would be selected in most areas of the world, with partly different priorities between these points as constituent elements .

## **Programs against drink driving- general aspects**

All programs against drink driving have to find a balance between the important issues related to drink driving problems, which are :

- medicolegal aspects of alcohol in the body
- the existing legislation and limits
- the jurisdiction for alcohol impairment
- the way the society is dealing with alcohol consumption in general and
- the optimal enforcement procedures

Therefor there is not a standard program / procedure available to be used all over the world. Each country – union has to find the optimum itself .

Especially for the enforcement procedures the (alcohol measuring) technology used and the organisation of operational tasks are of great importance for the success of the effectivity and success of actions against alcohol impairment on the roads.

## **Enforcement Procedures**

For the enforcement of drink driving legislation the technology the Police is using has a great impact on the effectiveness.

Very often the enforcement procedures are split / have to be split in

- screening tests (for detecting the alcohol impairment)
- evidentiary conformation of the result via breath or blood analysis

Actually there are very different configurations for this enforcement process used in the world. With some examples the general principles can be explained :

### **Austria**

8,0 Mio Inhab.      83000 km<sup>2</sup>

Evidential breath testing allowed - legal limit : 0,25 mg/l

Equipment used : 1500 Evidentiary instruments    Verification every 2 years  
( > 800 Alcotest 7110 MKIII fom Dräger )

**no** screening instruments

#### **Enforcement procedures**

The units are installed in the Police stations, the Dräger Alcotest 7110 MKIII is also used in the Police car .

Subjects detected are either breathalyzed at the site immediatly ( when the Alcotest 7110 is on board of the Police car ) or they are transported to the next Police Station or an operational Police car with an evidential unit on board is ordered to come to the site of detection to measure the breath alcohol concentration of the subject.

Estimated percentage of driving population tested each year : 2-3 %

Advantage:            Time to complete the evidential process is short  
Disadvantage :      Limited capabilities for random breath testing.

## France

58 Mio Inhabitants 543 000 km<sup>2</sup>

Evidential breath testing allowed - legal limit : 0,25 mg/l

Equipment used : > 6000 Evidentiary instruments, verification every 1 year  
only in Police stations, no mobile evid. breath testing

Screening : with tubes  
With handheld instruments  
( > 1000 Dräger Alcotest 7410 in use )

The number of screening tests done per year is quite high, more than 3 million tests are done. Mainly still the tubes are used (RBT – concept established)

The evidentiary tests are yet done with stationary instruments. Beginning with the year 2002 mobile evidentiary tests will be done.( New regulation)

Advantage : Relativ high deterrence effect  
Disadvantage : No mobile evidentiary testing up to now

Estimated percentage of driving population tested each year : 8 to 10 %

Nevertheless – the drink driving problem is still quite high in France.  
(Too good red wine ?)

## Victoria ( Australia )

4 Mil. Inhab. 227 000 km<sup>2</sup>

Equipment used: >200 evidentiary units ( DraegerAlcotest 7110 MKIV )  
screening with handheld units ( > 1000 units in place )

Evidential breath testing allowed - legal limit : 0,05 %

The evidentiary units are partly mounted on buses for mobile application in road blocks.

Road blocks are used as high profile actions to increase deterrence.

The impaired subjects, which are detected, get at once their evid. breath testing.  
Very fast and effective procedure.

The number of screening tests done per year is very high!!  
More than 2 millions tests are done per year.

Estimated percentage of driving population tested each year : around 50 %

The road toll has become one of the lowest in the world in the last years.  
The financing of these activities is partly done via an insurance, which normally covers the costs created by accidents.  
( Cost – benefit – driven program !!!!)

### **Managing of enforcement procedures.**

Road safety with an effective enforcement procedure against drink driving has to be managed in specific ways to be successful, like an industrial company.  
A controlling of the processes has to be installed, audits have to be done, quality has to be proven, budgeting process and cost control have to be included. The marketing of the activities has also to be optimized.

This requires a good basis of facts which have to be generated on the enforcement process. Data correlated to enforcement activities have to be collected, if necessary data have to be linked to other, related activities.

In Finland such a reporting system has been set up for the evidential units , allowing an independent supervising entity to make quality control continuously via the installed network. ( Instrument used – Alcotest 7110 MKIII)

Probably this trend will be followed in the future in all fields of road safety work.

Therefore any equipment used or chosen to be used in the future should have intelligence to be linked in a network, like for instance the Dräger Alcotest 7410 plus RS screening instrument, which can be linked to a PC, but which also has the capability to store any event during handling of the unit ( > 9000 events ) .

### **Conclusion – Recommendation**

There are possibilities to fight successfully against the problems of drink driving for road safety.

Appropriate programs have to be set up and managed efficiently.

These programs should be based on :

- appropriate legal basis for enforcement
- appropriate judicial practise
- political support.

These programs should include:

- clear definition of goals
- sufficient resources ( man power and money)
- appropriate public relation for supporting effectivity
- use of appropriate equipment for testing and controlling

For the technology used this should be mobile evidentiary instrumentation which is used for both ( stationary and on site evidentiary tests) and which complies at least to the OIML R 126 recommendation for evidential breath alcohol measuring instruments .

The detection of impaired drivers (screening) on the road should be done with a powerful, intelligent breath alcohol test unit, which can support statistics, analysys of data etc..

***To answer the title of this presentation:***

***No – drink driving as a threat for road safety can be avoided by dedicated actions in the fields of detection, prevention and deterrence.***