



Ad Hoc Technical Group on the Influence
of Alcohol and Drugs on Driving

Monaco, 30 October - 2 November 1978

ICP/ADR 009/6
(ICP/HSD 050)
12 September 1978

ORIGINAL: ENGLISH

INDEXED

DRINKING AND DRIVING IN THE NORDIC COUNTRIES

by

Mr M. Mäki
Director, Research Department
Central Organization for Traffic Safety, Helsinki



1. The Nordic system of cooperation

A special system has been developed for Nordic cooperation. The highest body is the Nordic Council, with members from each Nordic country. Under it there are a number of councils entrusted with questions in special fields, for instance the council on traffic safety (NTR) and the council on traffic safety research (NKT). The Council concentrates on the main problems common to the Nordic countries. It makes recommendations to governments of member countries for dealing with questions considered important by the Nordic Council of Ministers. Traffic safety has long been one aspect of Nordic cooperation, as evidenced by the establishment of NTR and NKT.

Along with other traffic safety measures implemented in the Nordic countries, e.g. mandatory use of seat belts, speed limits, use of warning lights, recommendations on the use of reflectors, mandatory use of helmets, etc., regulating the consumption of alcohol among drivers has gained importance.

2. Legislation on drinking and driving

Statistical studies show that drinking and driving are on the increase in the Nordic countries. Even though the Council has twice recommended to member countries that the legislation on drinking and driving be made uniform (recommendations No. 16/1956 and No. 24/1965) the legal provisions still differ.

The legislation in Iceland, Norway and Sweden sets the lower limit of blood alcohol concentration (BAC) at 0.05%; driving with concentrations in excess of this level means drunken driving. Iceland and Sweden also specify concentrations of 0.12% and 0.15%; and driving with a higher level means gross drunken driving.

Recommendations (committee report No. 4 1975/24) have been made in Norway on changing the BAC legislation. When the changes are made the police would be given the authority to carry out routine breath tests for alcohol on drivers in certain situations defined in the traffic legislation.

The issue of this document does not constitute formal publication. It should not be reviewed, abstracted or quoted without the agreement of the World Health Organization Regional Office for Europe. Authors alone are responsible for views expressed in signed articles.

Ce document ne constitue par une publication. Il ne doit faire l'objet d'aucun compte rendu ou résumé ni d'aucune citation sans l'autorisation du Bureau régional de l'Europe de l'Organisation Mondiale de la Santé. Les opinions exprimées dans les articles signés n'engagent que leurs auteurs.

Dieses Dokument erscheint nicht als formelle Veröffentlichung. Es darf nur mit Genehmigung des Regionalbüros für Europa der Weltgesundheitsorganisation besprochen, in Kurzfassung gebracht oder zitiert werden. Beiträge, die mit Namensunterschrift erscheinen, geben ausschließlich die Meinung des Autors wieder.

Настоящий документ не является официальной публикацией. Не разрешается рецензировать, аннотировать или цитировать этот документ без согласия Европейского регионального бюро Всемирной организации здравоохранения. Вся ответственность за взгляды, выраженные в подписанных авторами статьях, несут сами авторы.

In Denmark certain legislation on drinking and driving came into force on 1 May 1977. There are two BAC limits: a driver is guilty of drunken driving when the BAC is at least 0.08%, while the lower limit for gross drunken driving is 0.12%.

Previously Finland did not specify fixed BAC limits even though certain concentrations (0.08%-0.10%) were of considerable significance in court. In 1975 a recommendation was made for a new drinking and driving law which would specify BAC limits and such a law came into force on 1 April 1977. According to this law, a driver is punished for drunken driving if the BAC exceeds 0.05% and of gross drunken driving if it exceeds 0.15%. To facilitate surveillance the driver must, when so required, submit to tests for BAC and state of drunkenness.

Today the maximum sentences permitted by Finland's legislation on drinking and driving are 3 months' imprisonment for drunken driving and a fine of 60 days' pay or two years' imprisonment for gross drunken driving.

Routine alcohol tests of drivers have been tried out in Sweden since 1975 to support the legislation on BAC limits. A routine test is made on drivers who have had an accident or who have committed certain traffic violations. The advantage of these tests is that they make it possible to gauge the true extent of drunken driving with more accuracy.

3. The extent of drunken driving in Nordic countries

In evaluating the number of trips made by drivers under the influence of alcohol the basic assumption is that each vehicle is used 500 times a year (Traffic S akerhetsverk, TSV). Taking the present number of vehicles in Sweden, this would mean 165 milliard trips a year; and studies have shown that 3 million of these trips (0.2%) are made under the influence of alcohol.

In Norway, B  (1972) showed that out of 1286 drivers 35 (2.9%) who were stopped at random and given a breath test had consumed alcohol.

In the traffic surveillance implemented in Sweden in 1975 a total of 158 667 breath tests were done using routine methods. Out of those tested 418 (0.26%) were sent for a blood test. At first breath tests were performed on drivers chosen at random. During the final phase the time and place were chosen; 20 666 drivers who had had a traffic accident were tested and 775 (3.75%) were required to undergo a blood examination. A total of 16 190 drivers who had committed traffic violations were tested and 688 (4.25%) were sent for a blood examination. On average 10% of those who were sent for a blood examination had a BAC exceeding 0.05%.

In Finland Maki et al. (1976) studied drinking and driving in Helsinki. They found that about 1 % of the drivers stopped at random (3600) had been driving after drinking.

4. Alcohol as a Nordic traffic safety problem

What role does alcohol play in Nordic traffic safety?

The significance of alcohol in Nordic traffic safety will be assessed as follows, taking:

- the number of those sentenced for drunken driving,
- the number of those in accidents involving alcohol and those killed and injured in these accidents, and
- the number of cases of drunken driving studied by boards of inquiry in Finland.

Table 1 - Sentences for drunken driving in Nordic countries (Denmark, Finland, Norway, Sweden) in 1970-76

<u>Year</u>	<u>Denmark</u>	<u>Finland</u>	<u>Norway</u>	<u>Sweden</u>
1970	6795 ^{*)}	9289	4691	10544
1971	7180	10297	5536	9722
1972	8339	11681	5761	11504
1973	9557	13786	6329	11317
1974	9375	12529	6290	11758
1975	9685	17918	6611	12412
1976	9130	16781	7166	17750

Source: Yearbook of Nordic Statistics 1977

*) number of drivers' licences revoked

The table shows that the number of sentences for drunken driving rose in all the countries from 1970 to 1976. The smallest increase was in Denmark and Norway, and the largest in Finland.

Table 2 - Traffic accidents involving alcohol and resulting in personal injury in Denmark, Finland, Norway and Sweden in 1970-76

Total number of accidents

<u>Year</u>	<u>Denmark</u> ^{*)}	<u>Finland</u>	<u>Norway</u> ^{**)}	<u>Sweden</u>
1970	25 946	30 466	13 346	25 552
1971	25 999	30 005	12 406	24 795
1972	23 420	28 065	12 711	24 197
1973	21 751	29 071	12 366	25 601
1974	16 826	26 574	11 537	22 929
1975	17 961	27 608	12 452	23 692
1976	-	23 989	11 565	25 792

*) excl. mopeds

***) incl. mopeds

Cases involving alcohol

<u>Year</u>	<u>Denmark</u>	<u>Finland</u>	<u>Norway</u>	<u>Sweden</u>
1970	1734	2765	1396	1315
1971	2101	3017	1360	1453
1972	2109	3313	1574	1442
1973	2176	3705	1714	1507
1974	1982	3621	1491	1521
1975	2112	3552	1595	1556
1976	-	3158	1392	1519

Percentage of cases involving alcohol

<u>Year</u>	<u>Denmark</u>	<u>Finland</u>	<u>Norway</u>	<u>Sweden</u>
1970	7	9	10	5
1971	8	10	11	6
1972	9	12	12	6
1973	10	13	14	6
1974	12	14	13	7
1975	12	13	13	7
1976	-	13	12	6

Number of deaths in cases involving alcohol

<u>Year</u>	<u>Denmark</u>	<u>Finland</u>	<u>Norway</u>	<u>Sweden</u>
1970	176	159	*)	122
1971	191	218		134
1972	220	230		121
1973	217	224		112
1974	196	209		130
1975	203	215		131
1976	-	151		124

Sources: Official Nordic statistics (Denmark, Finland, Norway, Sweden)

*) no information

The table shows that:

- The percentage of cases involving alcohol is greatest in Norway and Finland, and smallest in Sweden.
- The percentage of cases involving alcohol was nearly stable in Sweden and Norway during the period studied.
- In Denmark and Finland the percentage of cases involving alcohol has risen slightly over the whole period studied.

The major role of alcohol as a serious risk factor is seen from the figures below, derived from studies of drunken driving conducted by insurance company boards of inquiry.

Cases of accidents involving alcohol and death, 1970-77

<u>Year</u>	<u>All accidents studied</u>	<u>Out of all accidents studied, cases involv. alcohol</u>	<u>Percentage of all accidents involving alcohol</u>	<u>Single accidents studied</u>	<u>Among single accidents studied, cases involv. alcohol</u>	<u>Percentage of single accidents involving alcohol</u>
1970	267	42	16	71	23	32
1971	367	85	23	143	58	41
1972	382	94	25	137	56	41
1973	387	100	26	152	72	47
1974	296	95	32	115	60	52
1975	339	128	38	148	83	56
1976	303	91	30	134	64	48
1977	234	61	26	85	44	52

Source: Studies conducted by insurance company boards of inquiry for traffic accidents, VALT.

The figures show that the percentage of cases involving alcohol during the period in question was on average 27% of all accidents, and 46% of single accidents.

The research results obtained in the other Nordic countries are similar. For instance, Hansson (1975) made 452 post mortem examinations of drivers involved in fatal traffic accidents in southern Sweden in 1972-75; 44 of them (21%) had consumed alcohol and alcohol was involved in 65 (35%) of 184 deaths in single accidents.

On the basis of these data alcohol can be said to be the greatest single factor endangering traffic safety in the Nordic countries.

5. Combating drunken driving

There is continual concern over the increase in drinking and driving in the Nordic countries, as evidenced by the counter-measures taken. Campaigns against drunken driving have been conducted in all the Nordic countries: in Sweden in 1975, and in Finland in 1976 and 1978. A follow-up study made in conjunction with the 1976 campaign in Finland (Mäki et Vakkuri, 1978) showed that the campaign involving television, the press and posters had clearly increased the public's knowledge about drinking and driving though attitudes and actual drunken driving behaviour did not change.

An effort is being made to improve legislation on drinking and driving especially through regulations facilitating surveillance. A proposal has been made in the Nordic Council that the Nordic Council of Ministers establish a joint programme to combat drunken driving in all the Nordic countries.

The proposal has resulted in a recommendation (10/1977) being made. It reads as follows:

The Nordic Council advises the Nordic Council of Ministers:

- (1) to prepare a joint Nordic programme to combat the use of alcohol in traffic which will incorporate the routine testing of drivers in all the Nordic countries and the preparation and implementation of a more effective information programme (e.g. information on increased risk);
- (2) to work to make the legislation on drinking and driving uniform in the Nordic countries;
- (3) to work to study the effects of alcohol on performance and to develop methods for determining alcohol concentration and intoxication.

The recommendation has already stimulated action by the authorities responsible for traffic safety to combat drunken driving.

At present the following can be said about the effects of the revised legislation in Finland; it has:

- made court practice uniform in Finland,
- encouraged the police to be on the alert for drunken driving,
- increased the compilation of statistics on drunken driving,
- considerably increased the imposition of an additional fine alongside a suspended prison sentence.

It is clear that in the Nordic countries the best way of combating drinking and driving is to increase the likelihood that a drunken driver will be caught (e.g. through routine tests). In this respect, too, efforts are being made to achieve uniform legislation (same BAC limits, consequences, punishment, and improved surveillance). It is also considered important to take action in informing and educating the public and thereby changing attitudes towards drunken driving.

There has been discussion in Finland recently on publication of the names of drunken drivers and confiscation of their cars by the Government as new forms of punishment for drunken driving. The discussion continues, but it seems that the suggestions are not likely to be implemented in the near future.

REFERENCES

- Bj, O. Screening av alkoholbelastningen bland bilförare i normal trafik. Transport-
ökonomisk Institut, Rapport, 1972
- Hansson, C. Alkohol och läkemedel vid dödsolyckor i trafiken i södra Sverige 1972.
Lund, State Forensic Medical Station, 1975
- Mäki, M., Linnoila, M., Alha, A. Drinking and driving in Helsinki. Accident Analysis
& Prevention, Vol.9, pp. 183-189, 1977
- Mäki, M., & Vakkuri, J. Liikenneraittiuskampanja. Liikennejuopumustietotaso ja -
asenteet ennen ja jälkeen kampanjan. Liikenneturvan tutkimusosaston monistuksia 23/1978
Statistics
- Faerdseluheld 1970-1976. Danmarks Statistik (Danmark)
- Tieliikennevahingot 1970-1976. Tilastokeskus (Finland)
- Vejtrafikkolycker 1970-1976. Statistik Sentral Byrå (Norge)
- Vägtrafikolyckor med personskada 1970-1976. Statistiska Centralbyrån (Sverige)
- Yearbook of Nordic Statistics 1977. The Nordic Council, Stockholm, 1978