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THE DRINKING ROAD USER IN GREAT BRITAIN

by

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ABSTRACT

The magnitude and nature of the problem of alcohol and road accidents in Great Britain has been monitored through special returns of Blood Alcohol Concentration (BAC) in fatalities, through routine reporting of positive screening (breath) tests recorded by the Police for drivers involved in injury accidents, and through records of offences related to motor vehicles. The involvement of different road users is considered.

Recent epidemiological studies are outlined, which give a new insight (albeit limited) into drinking habits and characteristics of offenders, and report on the role of drinking pedestrians in accidents.

Although there is some evidence that the acceleration of the drink/driving problem has been checked, alcohol remains a major factor in the occurrence of road accidents. The data presented reinforce the need to strengthen legislation to deal with drinking and driving, including publicity to all road users, and to continue with supporting research activities to identify more effective countermeasures.

1. BACKGROUND

The role alcohol plays in accident occurrence in Great Britain continues to be a matter of major concern. Drinking and driving is regarded as one of the most serious problems, the alleviation of which has been receiving increasing consideration in recent years. It is worth recalling the main events since the introduction of legislation in 1967 which first imposed a legal limit of 80mg/100ml alcohol in the blood of drivers. The initial impact which produced an 11 per cent reduction in the national casualty toll appeared to decline, although over a period of seven years at least 5000 deaths and 200,000 casualties were judged to have been saved as a result[1,2,3]. Concern about the situation led to the setting up of a Government Committee of Inquiry into Drinking and Driving in 1974 (the Blennerhassett Committee), which reported in 1976[4] making recommendations to restore the effectiveness of the 1967 legislation.

The main recommendations of the Committee were:

(a) as at present, there should be an offence defined in terms of a blood alcohol limit of 80mg/100ml of blood;
(b) a police officer at his discretion should have power to require a breath test of a person who is or has been driving or attempting to drive or in charge of a motor vehicle;
(c) a breath sample should normally be used to determine a driver's blood alcohol concentration, as well as for roadside screening tests, but with a fall-back option of providing blood if the breath analysis is over the limit;
(d) proof of an offence should not be unreasonably dependent on compliance with procedural requirements;
(e) an order of disqualification for a year (or longer at the court's discretion) should continue to be the main penalty, in conjunction with fines, but that in 'high-risk' cases (ie those with very high BACs and repeat offenders) licences should not be restored until the court is satisfied that the offender does not present undue risks as a driver;
(f) there should be a continuing programme of publicity having particular regard to the education of young drivers, to develop informed and responsible attitudes to drinking and enlist public support for the law.

Subsequently there have been renewed drink/driving campaigns both nationally and locally, and an extensive programme of laboratory and operational trials to test equipment for breath analysis has been carried out by the Home Office Central Research Establishment and the Police, as described in two other papers to this Conference[5,6]. Following the successful outcome of these trials, at the end of 1979 the Government issued a consultation paper[7], with a view to new legislation, to a wide range of interested organisations.

The purpose of the Consultative Document is, first, to invite comments on the Government's proposals on the issues where they have reached provisional conclusions (which differ in some important respects from the Blennerhassett Committee recommendations); secondly to seek an up-to-date expression of view on certain issues where the Government have yet to reach conclusions, notably that of the proposed unrestricted power to test; and thirdly, to provide the further information on the trials of the evidential breath testing machines[5,6], which needs to be made available before decisions can be taken on their use.

The responses to the Consultative Document are now being considered prior to setting out legislative requirements.

Meantime the magnitude and nature of the problem of drinking and driving has continued to be monitored through special returns of Blood Alcohol Concentrations (BACs) in fatalities, through routine reporting of positive screening tests recorded by the Police for drivers involved in injury accidents, and through records of offences related to motor vehicles[8,9]. Following an in-depth study of the role of alcohol in accidents in 1970 to 1974[10], further epidemiological studies have been undertaken to give some new insight into the drinking habits and characteristics of offenders[11], and to examine the role of the drinking pedestrian in accidents[12]. Nevertheless little gain in the basic understanding of the interrelation between alcohol consumption and accident causation has been derived. An essential need to this end, which it has not been possible to fulfil, is to carry out roadside surveys of drivers in Britain to establish the circumstances surrounding drink/driving in the general population.

2. THE MAGNITUDE OF THE DRINK/DRIVING PROBLEM

2.1 *Offences*

In 1978 over 69,000 persons were found guilty of offences of driving after consuming alcohol or taking drugs[8,9], the breakdown for the different offences being shown in Table 1. In the first year of the present legislation (1968) the total number of offences was 27,500. The number then increased steadily up to a peak of over 77,000 in 1975, but has subsequently declined. The higher level of convictions for offences of drink/driving clearly did not prevent the accident situation deteriorating during the 1970s. This may not altogether be surprising when set against the background of the increasing consumption of alcohol in the country. Between 1968 and 1973 the increase per head of population was 13 per cent: thereafter there was a much steeper rise of 29 per cent in the following five years.

TABLE 1

Findings of guilt for offences of driving etc after consuming alcohol or taking drugs; 1978

	England and Wales	Scotland	Great Britain
1. Driving or in charge of a motor vehicle when unfit to drive through drink or drugs	3318	1553	4871
2. Driving or in charge of a motor vehicle when the proportion of alcohol in the blood exceeds the prescribed limit	44249	9407	52656
3. Refusing to take a breath test or provide a specimen of blood or urine for analysis	10253	1298	11551
Total	57820	12258	69078

Distributions of BACs recorded in analyses are given in Table 2 and Figure 1.

TABLE 2

Distributions of blood alcohol concentration (BAC); 1978

BAC (mg/100ml)	England and Wales		Scotland	
	No.	%	No.	%
81–100	4745	10.7	838	6.9
101–120	5628	12.7	1147	9.5
121–150	8178	18.5	2017	16.6
> 150	25698	58.1	8113	67.0
Total	44249	100	12115*	100

* These include all specimens analysed, whether or not followed by a finding of guilt

2.2 *Blood alcohol levels in fatalities*

The returns of BACs recorded on adult fatalities who die within 12 hours of the accident provide the only source of data for monitoring the drink/driving problem in relation to accidents on a quantitative basis. These returns, which have been made in England and Wales since January 1966, and in Scotland since January 1978, represent about a 45 per cent sample.

The distributions of BAC for drivers and riders killed in accidents in 1978 are given in Table 3, together with similar distributions for other road users.

TABLE 3

Distributions of blood alcohol concentration (BAC) for different road users in Great Britain in 1978

	Per cent with BAC exceeding: (mg/100ml)						Number in sample	All fatalities aged 16 or over*
	9	50	80	100	150	200		
Motor vehicle drivers (ex 2-wheelers)	44	37	33	31	20	11	647	1732
Motorcycle riders	42	35	29	25	14	6	396	1002
Vehicle passengers	49	37	32	29	14	8	352	1230
Pedestrians	34	28	25	23	19	13	571	1940
Pedal cyclists	21	19	16	16	16	7	58	202
Total	41	34	29	27	17	10	2024	6106

* Approximately 75 per cent of these died within 12 hours of the accident.

It is interesting to note the similarity in distributions between vehicle passengers and drivers/riders. Comparison of data for England/Wales and Scotland (Table 4) confirm the higher levels of BAC noticed for Scotland in the offences (although the numbers are very much smaller than for England/Wales). The regional differences are especially noticeable for pedestrians.

TABLE 4

Proportions of persons killed with BAC in excess of 80mg/100ml: 1978

	Per cent with BAC exceeding 80mg/100ml					Number in sample
	Drivers	Riders	Passengers	Pedestrians	All	
England and Wales	31	29	30	21	27	1848
Scotland	49	41	47	67	53	176

The data also permit an examination of the effects of age and time of day.

TABLE 5

Drivers and riders killed with BAC in excess of 80mg/100ml and age: 1978

	Per cent with BAC exceeding 80mg/100ml for age groups:							
	16–19	20–24	25–29	30–39	40–49	50–59	60–64	65+
Drivers	41	52	44	36	20	22	16	8
Riders	22	44	32	31	25	14	0	0

In terms of the legal limit the most vulnerable age group is 20–24; relatively fewer of the over 40s have excess alcohol in the blood, as do the youngest age group of motorcycle riders.

TABLE 6

Drivers and riders killed with BAC in excess of 80mg/100ml and time of day: 1978

	Per cent with BAC exceeding 80mg/100ml between 10 pm and 4 am	
	Friday/Saturday and Saturday/Sunday nights	All nights
Drivers	68	64
Riders	62	55

In the peak drinking hours very high proportions of drivers killed are in excess of the limit, especially on Friday and Saturday nights. Trends in BACs over the years (necessarily restricted to England and Wales) are shown in Table 7 and Figure 2. The impact of the 1967 legislation is clearly seen, followed by the decline in the impact of the law.

TABLE 7

Trends in proportions of drivers and riders killed with BACs in excess of 80mg/100ml; England and Wales

	Per cent with BAC exceeding 80mg/100ml											
	1967 to Sept	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Drivers	32	20	25	23	27	30	33	36	38	38	32	31
Riders	13	8	12	18	24	19	26	28	29	24	25	29
All	27	17	22	21	26	26	30	33	35	33	29	30

For motor vehicle drivers killed (mostly car drivers) the level reached a peak in 1975/76 and has subsequently decreased, although it remains at pre-legislation level. Comparison with earlier data[3] shows that the decrease is most marked for the over 40s (from 25 per cent in 1976 to 14 per cent in 1978), while the per cent is virtually unchanged for the 16–19 age group (39 per cent to 40 per cent). The period from 1976 onwards coincides with a marked increase in publicity through regular TV commercials. Although this decrease appears encouraging its implication should not be exaggerated. The decrease between 1975/6 and 1977/8 represents a saving of only about 60 deaths per year, and there is no evidence that it is paralleled in non-fatal accidents.

For motorcycle riders a decrease in 1976 has been followed by an increase up to a level almost as high as for drivers. The decrease coincides with the substantial increase in new riders on the road, who through their inexperience are likely to have had relatively more non-alcohol related accidents. The subsequent increase suggests the need to reinforce publicity with specific aims at motorcycle riders. Previous campaigns have been related exclusively to car drivers.

2.3 *Casualties in alcohol related accidents*

Analysis of the national injury accident data provides an insight into which road users are injured in accidents involving drinking drivers and riders. The recording system does not allow for analysis of BACs in relation to the accident circumstances but a record is included of those drivers who had a positive roadside screening test. In 1978 10 per cent of the total of 438,000 drivers involved in accidents were required to take a screening test, and one-third of these (nearly 13,000) had a positive test (or failed to provide a specimen). As Table 8 shows over 60 per cent of the drivers/riders with positive screening tests were apprehended between 10 pm and 4 am, more than half of them on Friday/Saturday and Saturday/Sunday nights.

TABLE 8

Drivers and riders involved in accidents with positive screening test
(or failed to provide a specimen)

	Number with positive breath test	Total number	Per cent with positive breath test
Drink hours: 10 pm–4 am	8,150	65,553	12.4
All hours	12,996	438,087	3.0
Per cent in drink hours	62.7	15.0	

Table 9 gives the numbers of casualties of different severities in the accidents in which at least one driver had a positive breath test. These data take no account of the majority of the driver and rider fatalities reported in the previous section since very few with a recorded BAC in excess of 80mg/100ml had been subjected to a screening test. It is estimated that in addition to the 516 fatalities recorded in Table 9, a further 600 drivers or riders killed had BACs in excess of the legal limit: for the accidents in which these were involved there is no knowledge of the associated passenger and pedestrian casualties in the same accidents, but these are not likely to total more than 400 and 70 respectively (from estimates based on the relative proportions in Table 9). The records of BAC in fatalities also suggest that about 360 pedestrian fatalities (who died within 12 hours of the accident) had a BAC in excess of 80mg/100ml. These figures for drivers, riders and pedestrians are certainly underestimates of the road user fatalities associated with excess drinking, since they take no account of the quarter of fatalities who die more than 12 hours after the accident, nor of the injured drivers/riders who escape the application of a breath test because of their injuries. A conservative estimate of deaths associated with drinking in excess of the legal limit in 1978 (including pedestrians who have been shown to bear as large if not larger responsibility than drivers for accidents in which they are involved) is 1500: this is more than one in five of the total persons killed (6831) in accidents in the same year.

TABLE 9

Casualties in accidents in which at least one driver had a positive breath test
(or failed to provide specimen)

	Type of accident (and number)				
	1 vehicle (5106)	1 vehicle + pedestrian (981)	2 vehicles (5407)	> 2 vehicles (1254)	Total (12748)
Drivers or riders					
Fatal	17	0	105	27	149
Serious	1202	13	1431	306	2952
Slight	3006	39	3629	936	7610
Passengers					
Fatal	114	0	63	24	201
Serious	1100	4	956	235	2295
Slight	2240	27	2829	693	5789
Pedestrians					
Fatal	–	143	21	2	166
Serious	–	435	78	18	531
Slight	–	578	85	30	693
All road users					
Fatal	131	143	189	53	516
Serious	2302	452	2465	559	5778
Slight	5246	644	6543	1659	14092

3. EPIDEMIOLOGICAL STUDIES

The police statistics tend to underestimate the problem of drinking and driving. In-depth studies of accident causation[10] indicated that in 25 per cent of accidents in Great Britain at least one driver had been drinking, and in 9 per cent the driver's impairment was such that it played a major role in the accident. In the peak drinking hours between 10 pm and 4 am, two-thirds of accidents involved a drinking driver and in nearly one-third impairment by alcohol was the major factor. Overall, impaired drivers were twice as likely to be to blame for the accident, and the following characteristics were more likely to be associated with them (the multiplying factor indicates the greater likelihood of association with an impaired driver compared with other drivers):

- unfamiliar road x 2
- loss of control x 2½
- single vehicle accident x 2½
- travelling too fast x 2½
- distracted x 1½
- fatigued x 4
- other drugs taken x 2

Pedestrians also are not necessarily blameless as regards alcohol involvement in accidents. In a study of fatally injured pedestrians in the West Midlands[12], together with a matched control sample of non-accident involved pedestrians, it was found that risk of accident involvement increased with BAC, the increase being significant at 120mg/100ml, rising rapidly above that level. Twenty-two per cent of fatally injured pedestrians had BACs above the legal limit for drivers (80mg/100ml) and 18 per cent above the 120mg/100ml level. This is the kind of study which is necessary to advance the understanding of the drinking road user. It is encouraging that public participation amongst the non-accident involved control group of pedestrians was freely given, but as yet it has not been possible to pursue a similar approach for drivers.

A more recent study[11] has looked at the circumstances surrounding the committal of drink/driving offences within a large urban area (Birmingham), together with details of the social characteristics and drinking habits of a sample of offenders. By comparison with a control group of motorists who had not been convicted of such offences, the aim was to isolate any specific characteristics and provide a detailed profile of the drink/driving offender.

Data were collected on 1032 male drivers and riders charged with drink/driving offences during an 18 month period from January 1976. In 350 cases, the data were augmented by additional information obtained by attending the relevant court cases. A sub-sample of 102 motorists whose cases were attended subsequently volunteered to be interviewed to obtain data on their drinking and drink/driving habits. Control data were obtained by home interviews, on a voluntary basis, of 300 male licence-holders in Birmingham who had no previous convictions for drink/driving offences within the last ten years.

Four out of five offences involved driving or attempting to drive with a BAC above the prescribed limit. About one in seven offences involved failing to provide a laboratory specimen. Nearly half the offences occurred on Fridays or Saturdays. Three-quarters of them were committed during the period 10 pm to 4 am. In two out of five cases the offence was detected as a result of a traffic accident. Three out of five of these accidents were non-injury. A quarter of offences resulted from 'erratic driving' by the offender.

Two-thirds of offenders who provided a blood or urine sample had BACs in excess of 150mg/100ml. One-third had BACs in excess of 200mg/100ml. The median BAC was 178mg/100ml, 35mg/100ml above the national median. One in seven offenders had at least one previous conviction for a drink/driving offence. Nearly a quarter had previous convictions for non-motoring ('criminal') offences.

Comparisons of the offender and control groups suggested that offenders were more likely to be under 50; single, divorced or separated; in semi-skilled or unskilled manual socio-economic groups; unemployed; and to have previous motoring convictions. The offender group also tended to have a substantially higher weekly alcohol intake. The offence rate (the probability of a motorist within a particular group being convicted of an excess alcohol offence, relative to the probability of the total sample covering all groups) was significantly higher for those who consumed in excess of 180gm of alcohol (approximately 12 pints of beer) over a period of one week. What it has not been possible to identify is whether those who drink more heavily also exhibit other sociological characteristics which in themselves might lead to higher risk of accident involvement. The association with previous motoring convictions suggests there might be some possibility of this.

High risk offenders, defined in this study as those exceeding 200mg/100ml or convicted twice within ten years for any drink/driving offence, in comparison with other offenders, tended to be older, married, in socio-economic groups 2 and 6 (managers and unskilled workers), and were more likely to have previous convictions for alcohol-related non-motoring offences and 'criminal' offences.

4. FUTURE RESEARCH NEEDS

Future research requirements stem from the need for a better understanding of how to deal with the drinking driver and what countermeasures are likely to be most effective. The appropriateness of these depends on whether the problem is related to social drinkers, problem drinkers or alcoholics. To advance such research it is essential to relate drinking levels to drinking habits, and since this depends so much on national characteristics, it is essential for each country to conduct its own studies. Very little information of this kind has been obtained in Great Britain. In particular it is desirable to examine associated drinking levels and habits among fatally-injured drivers involved in accidents in comparison with similar studies of the general driving population on the road, that is through roadside surveys. Some small advance has been made through the study of convicted drivers reported here (Section 3), but a comprehensive study is still impeded by the inability to obtain blood alcohol levels for drivers involved in accidents (except for fatalities and convictions), and the uncertainty about public acceptability of roadside surveys. It is hoped to resolve this latter issue shortly when the results of the public consultation are known.

A further research area lies in developing a procedure for dealing with high risk offenders, and in particular establishing services specifically tailored to the needs of the drinking driver. For example: provision of information to the 'high-risk' driver setting out the basic facts about alcohol-related harm, the effect of alcohol on driving skills, and sources of counselling and treatment; experimental establishment of special counselling service for drinking drivers.

5. CONCLUSIONS

Although there is some evidence (from records of BACs in fatalities) that the acceleration of the drink/driving problem in Great Britain has been checked, alcohol remains a major factor in the occurrence of road accidents.

The data presented in this report reinforce the need to strengthen legislation to deal with drinking and driving, including publicity to all road users, and to continue with supporting research activities to identify more effective countermeasures.

6. ACKNOWLEDGEMENTS

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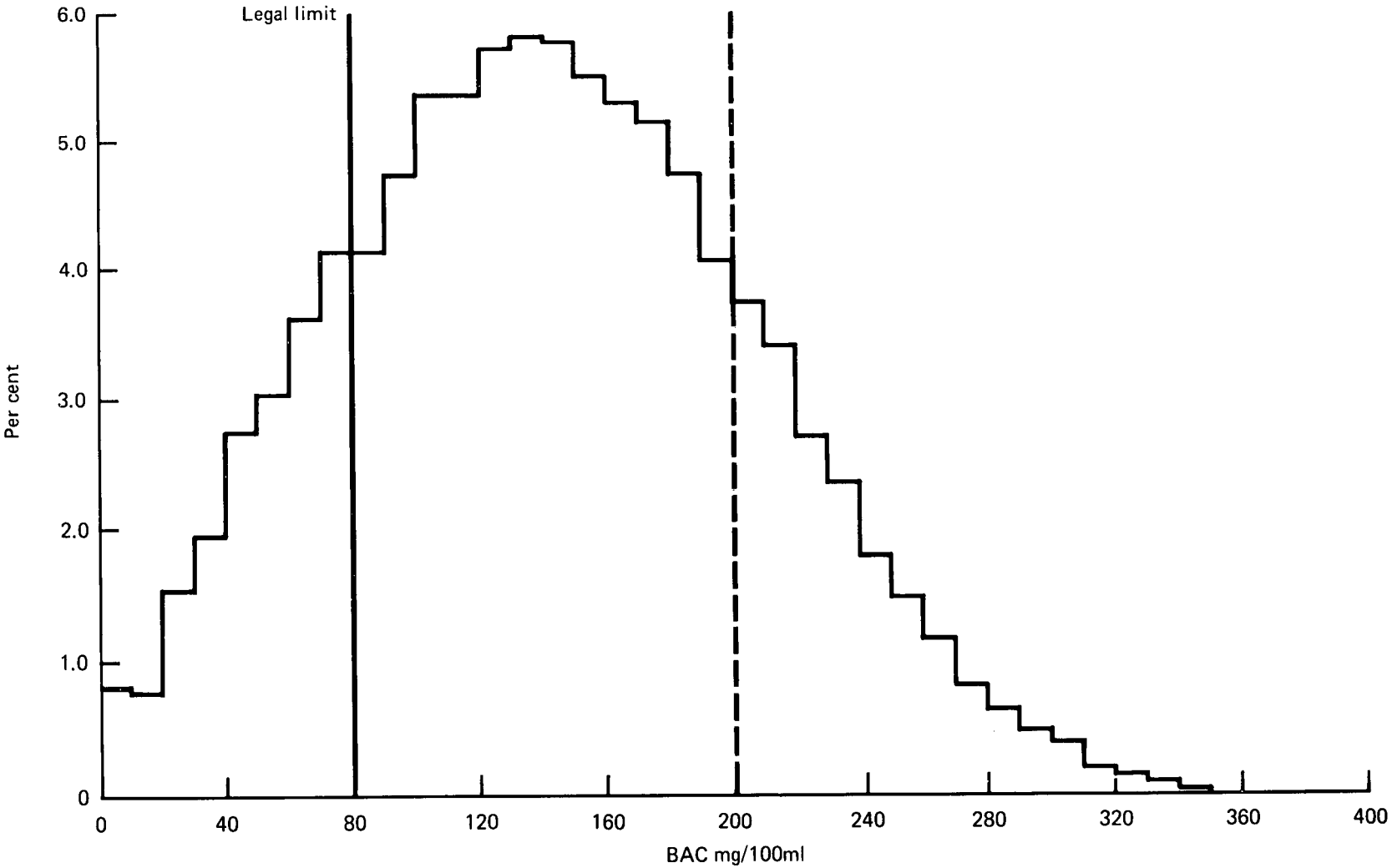

Fig.1 DISTRIBUTION OF BLOOD ALCOHOL LEVELS, ENGLAND AND WALES 1978

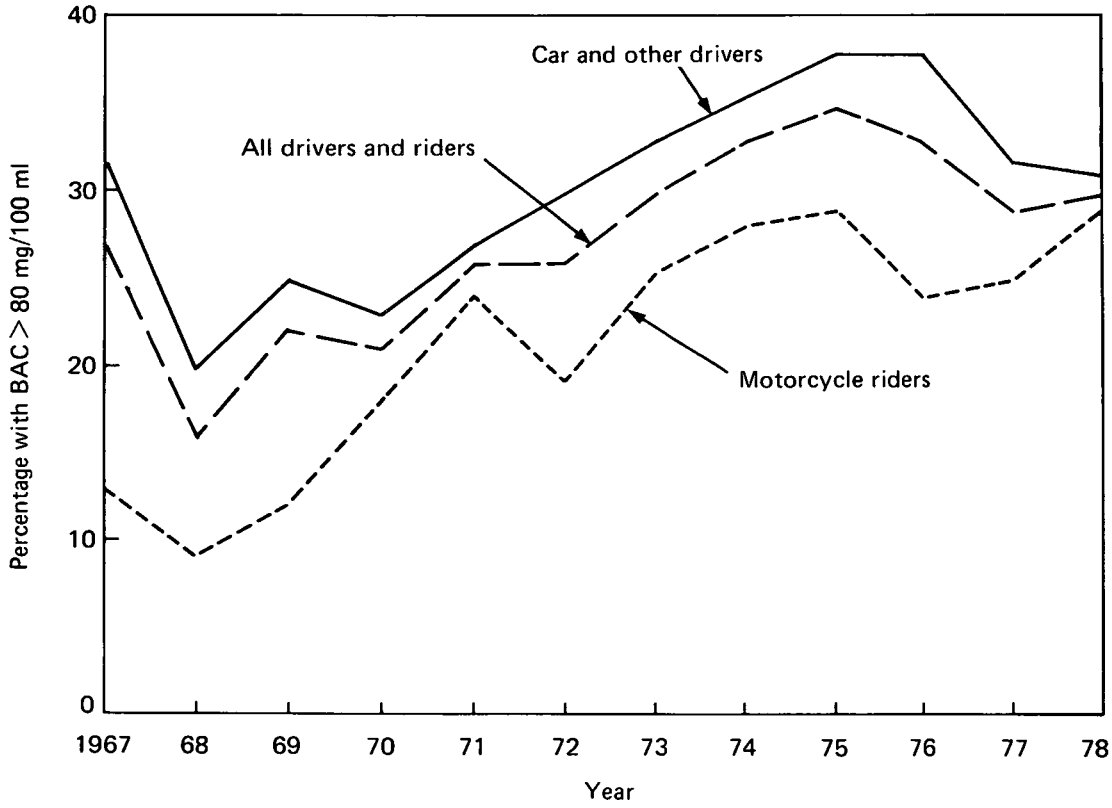

Fig.2 TRENDS IN BAC IN FATALITIES IN ENGLAND AND WALES

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