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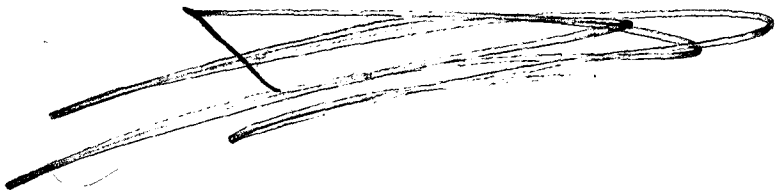

DOT HS-804 857

PROCEEDINGS OF THE 1979 NCA ALCOHOL AND TRAFFIC SAFETY SESSION

April 30 through May 2, 1979

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Washington, D.C. 20590

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the National Technical Information Service
Springfield, Virginia 22161

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT HS 804 857		

4. Title and Subtitle	5. Report Date
Proceedings of the 1979 NCA Alcohol and Traffic Safety Session	August 1979
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
	11. Contract or Grant No.
	13. Type of Report and Period Covered: Proceedings, April 30 - May 2, 1979
12. Sponsoring Agency Name and Address: National Highway Traffic Safety Administration, 400 7th Street S.W., Washington, D.C. 20590	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

Included are the most current research papers on the diagnosis, referral, rehabilitation and adjudication of persons convicted of driving while intoxicated. Research on the effectiveness of programs for youthful offenders, senior adults, and social and problem drinkers are reported.

17. Key Words	18. Distribution Statement
adjudication, diagnosis, referral, rehabilitation, DWI, evaluation of effectiveness	Document is available to the public through the National Technical Informatio Service, Springfield, Virginia 22161

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	450	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

METRIC CONVERSION FACTORS

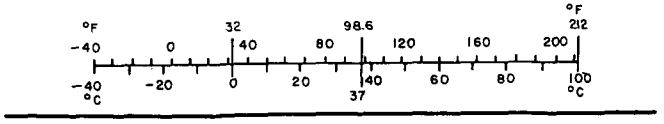
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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PROCEEDINGS OF THE 1979

ALCOHOL AND TRAFFIC SAFETY SESSION

CONDUCTED BY:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
AND THE NATIONAL COUNCIL ON ALCOHOLISM

APRIL 30 THROUGH MAY 2, 1979

Alcohol and Traffic Safety Session

Monday, April 30, 1979

9:30-10:00 a.m.	Welcome/Opening Remarks	James Nichols, Ph.D. National Highway Traffic Safety Administration
10:00-10:30 a.m.	Alcohol and Highway Safety: A Status Report *	Kent Joscelyn Ralph Jones, University of Michigan
10:30-11:00 a.m.	Characteristics of DWIs, Alcoholics, and Controls	Herbert Moskowitz, Ph.D. Julia Walker Christopher Gomberg, University of Calforina at Los Angeles
11:00-11:30	How Random Assignment Worked in the Short Term Rehabilitation Evaluation Project *	W. Burleigh Seaver, Ph.D. Elaine Weinstein James Nichols, Ph.D., National Highway Traffic Safety Administration
12:00 NOON	LUNCH	
2:00-2:30 p.m.	Drinking-Driver Probation Should Be Evaluated From a Probation Perspective	Randy Polisky, Amercian Probation and Parole Association
2:30-3:00 p.m.	Traffic Safety Impact of Mandated Licensing Actions Relative to Alcohol Abuse Treatment Programs or Fines and/or Jail Sanctions	Roger Hagen, Ph.D., Rickey Williams Edward McConnel, California Department of Motor Vehicles
3:00-4:00 p.m.	Implementation of a Large Scale Rehabilitation Program Evaluation	David Struckman-Johnson, Ph.D. Vernon Ellingstad, Ph.D., University of South Dakota
3:30-4:00 p.m.	The Application of State-of-the-Art Intervention and Evaluation Technology: Prospects for the Future of Alcohol and Traffic Safety Countermeasures Approach	Glenn Caddy, Ph.D., Old Dominion University

* No formal paper submitted

Tuesday, May 1, 1979

9:00-9:30 a.m.	Judicial Intervention: The Missing Element	George Crawford Joseph Cummings, Ph.D., Applied Personal Dynamics, Inc.
9:00-10:00 a.m.	The Addicted Driver: A Problem of Law or Medicine	Albert Logan, National Institute of Judicial Dynamics
10:00-10:30 a.m.	There is More to a DWI Case Than a BAC Reading: A Judge's Responsibility to the Drinking Driver	Nathan Kirsch, New Jersey Department of Health
10:30-11:00 a.m.	The Delphi Project on the Views of Criminal Justice Officials on Alcohol Safety Adjudication and Referral Counter-measures Effectiveness	George Brandt Rupert Doan, National Highway Traffic Safety Administration
11:00 -11:30 a.m.	Criminal Justice Standards for Drinking-Driving Cases *	Gary Scrimgeour, Professional Studies Associates
11:30 a.m.-12:00	An Honest Implied Consent Law	Richard Hall, Village of Park Forest, Illinois
12:00 NOON	LUNCH	
2:00-2:30 p.m.	Seminars on Alcohol and Highway Safety for State and Local Legislatives	Margaret Nesbitt, Applied Sciences Associates
2:30-3:00 p.m.	The Visual Detection of Driving While Intoxicated	Douglas Harris, Anacapa Sciences, Inc.
3:00-3:30 p.m.	R.I.D.E. A Prevention Programme for Drinking Driving	Evelyn Vingilis L. Salutin G. Chan, Addiction Research Foundation
3:30-4:00 p.m.	Effects of Alcohol and Diazepam, Singly and in Combination, on Some Driving Performance	Rudolph Mortimer, Ph.D. P. Howat P. Stubing, M.D., University of Illinois, Urbana-Champaign

Wednesday, May 2, 1979

9:30 - 10:00 a.m.	Development and Evaluation of a Traffic Safety and Alcohol Program for Senior Adults	Darlene Winter, Ph.D., Columbia University
10:00-10:30 a.m.	Prince George's County: A Local Health Department Confronts the Young Drinking Driver	Phyllis Baron Wendall Turner, Prince George's County Health Department
10:30-11:00 a.m.	Projects ADAPTS (Alcohol-Drivers and People-Teachings Safety)	Peter Shanelaris Timothy Mahurin, Newfound Memorial High School, Bristol, Vermont
11:00-11:30 a.m.	Chemical Dependency Program for Youth and Young Adults	George Bright, Cumberland Farm for Adolescents
	Drunk Driving Among Youth and Young Adults	David Saunders, Ph.D., Richmond, Virginia ASAP
11:30 a.m.-12:00	The Class that Was Designed to Teach-Each-One	Dan Faulkner Jim Johnson Gerald Wili Mike Painter, D.W.I. Counterattack, Tampa, Florida
12:00 NOON	LUNCH	
2:00-2:30 p.m.	Alcohol Countermeasures: Alive and Doing Well in New Jersey	Robert Green W. Patrick Scheffer, New Jersey Department of Motor Vehicles

CONTINUE

Wednesday, May 2, 1979

2:30 - 3:00 p.m.	A Team Approach to Traffic Safety and Alcohol Treatment	Catherine Walton, City Court Probation - Diversion Memphis, Tennessee
3:00 - 3:30 p.m.	The New York State Alcohol and Drug Rehabilitation Program	Robert Hogan James McGuirk, New York State Department of Motor Vehicles

ALCOHOL AND TRAFFIC SAFETY:

A STATUS REPORT

Kent B. Joscelyn and Ralph K. Jones
University of Michigan
Highway Safety Research Institute

* Alcohol and Highway Safety 1978: A Review of the State of Knowledge (DOT HS 803 714)

* Alcohol and Highway Safety 1978: A Review of the State of Knowledge, Summary Volume (DOT HS 803 764)

The presentation summarized the findings of the two subject reports.

Both reports are available to the public through the
National Technical Information Service
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Characteristics of DWIS, Alcoholics, And Controls

Herbert Moskowitz
Judy Walker
Christopher Gomberg
University of California
Los Angeles, California

CHARACTERISTICS OF DWIS, ALCOHOLICS, AND CONTROLS[1]

Herbert Moskowitz, Judy Walker, and Christopher Gomberg
University of California
Los Angeles, California

The California Department of Alcohol and Drug Abuse requested the UCLA Alcohol Research Center to assist them in clarifying some aspects of the drinking driver problem. This product is a review of the literature on the characteristics of the individuals arrested and convicted for driving while intoxicated, the DWI. An agency such as the California Department of Alcohol and Drug Abuse which wishes to develop a countermeasure program for a social problem needs information about the characteristics of the persons whose behavior lies at the root of the problem. Knowledge is required of the social and personal demographic characteristics of the drinking driver, especially knowledge of drinking practices such as quantity, frequencies, places, with whom, when, etc. Unfortunately, such information about the drinking driver population as a whole is lacking. While random roadside surveys have given us information about the relative frequency of drivers with different blood alcohol concentrations (BACs) on the road at a given time of day and week, only limited information has been collected to associate the BACs of drivers with informtion on when, where, why, and what they drink, for example.

The one group for whom it is possible to make a more definitive statement regarding characteristics is the convicted DWI driver. In fact, he is the only drinking driver at this time whom we can identify and interact with. However, before describing what has been learned about such individuals, it is of extreme importance to note that evidence suggests that the convicted DWI driver is not representative of the typical drinking driver, especially in important aspects such as BAC levels and arrest histories. Perrine (1975) presents evidence that the DWI driver reaches a BAC level which is higher than the typical driver reaches. In comparing the BAC distributions of drivers in a roadside survey with DWI drivers, Perrine found little overlap between the BAC distributions of the roadside survey drivers and of the DWIs. A study by Fridlund and Hagen (1977) comparing California DWI drivers with alcohol-related fatalities found that DWI drivers have a worse driving record with more prior traffic convictions, more prior DWI convictions, and more prior licensing actions. Zylman (1975 a,b) after reviewing several studies concluded that DWI drivers are not typical of the drivers involved in alcohol-related accidents. Zylman noted that DWI drivers were older and had more prior arrests and more prior collisions than the alcohol-related fatalities.

It should be noted that the DWI population is derived drom the drinking driver population through a series of filters which introduce a variety of biases. The degree of police concentration in various areas, the socio-economic and cultural status of the driver, and the skills which the drunk driver possesses in responding to court procedures produce a DWI population which differs from the overall drinking driver population. An example of the biased character of DWI populations can be seen in Pollack's 1969 study of DWI drivers in Los Angeles County, California. Comparison of DWI drivers

[1]This project was funded by the California Department of Alcohol and Drug Abuse.

with a random sample of licensed drivers from the same area showed that while Caucasians were 84.9% of the licensed drivers, they constituted only 37% of the DWI drivers. Blacks were 4% of the licensed drivers but 37.3% of the DWI drivers. Similarly, Mexican-Americans were 7.2% of the licensed drivers and 22.1% of the DWI drivers

Attention has been drawn to the distinction between the DWI drivers and the drinking driver population as a whole because neither the social needs of the two groups nor requirements for drinking driver countermeasures for the two groups are likely to be the same. Obviously the following description of the DWI driver does not apply to the drinking driver population as an overall group. If better techniques of apprehending the drinking driver are developed and the probabilities of being arrested change, at some time point in the future, the DWI may better reflect the overall drinking driver population.

To determine the characteristics of the DWI driver, this project conducted a literature search in libraries, through computer data banks, and through direct contacts with researchers in the field. Over 650 titles were identified and abstracts read for all these. Over 100 directly pertinent articles were read in entirety of which 30 have had material summarized for inclusion in our report. Data from many articles were rejected due to methodological problems whereby the articles dealt with a biased sample of DWI drivers, not necessarily typical of that community. Excluded from this review were any studies which reported a non-random sampling of DWI drivers such as those which were identified as dealing only with high-risk or problem drinkers. If a study implicitly or explicitly suggested that the court or treatment agency had selected a subgroup of DWI drivers from the total group of DWI drivers, the study was not included in this review since obviously it would not be based on an unbiased sample of the DWI population. All studies reviewed herein included a random sample of the DWI drivers at minimum. Several studies included comparison groups of drivers either randomly sampled from roadside surveys or from drivers applying at departments of motor vehicles for license renewal or random samples of alcoholics drawn from inpatient or outpatient alcoholism treatment programs. A description of each of the reports utilized can be found in Appendix A.

For the sake of simplicity, the term "control driver" refers to all drivers randomly selected to represent the total driving population. This includes drivers called "average drivers", "control drivers", "Department of Motor Vehicles drivers', among other names in teh studies. "Alcoholics" refers to individuals in an alcoholism treatment program, regardless of the treatment program type. Finally, "DWI drivers" refers to drivers convicted of driving while intoxicated. Each study of "DWI drivers" included a random sample of or the total DWI population.

WHO IS THE DWI DRIVER?

Our literature review indicates that the DWI driver is an individual who is an alcohol abuser and who differs from the control driver by a trend of characteristics that approach those found in individuals in treatment for alcoholism. Many of these characteristics are evidence of the personal

and social consequences of alcohol abuse. The following statements summarize the comparisons of DWIs with control drivers on the one hand and with alcoholics on the other hand.

One inherent limitation in this review of the literature is that the papers presented the data in the form of means for a group, e.g., "the DWIs had a mean age of X". These mean summaries are of course also used to describe the control driver and the alcoholic. Clearly not every DWI, control driver, or alcoholic will be an embodiment of the mean trends for each classification. Insofar as sociatal actions may result from group membership, it is always wise to suggest that programs have mechanisms for recognizing the atypical case.

Another problem in the comparisons between DWIs and others is that the DWI may have come from another geographical locality than the control driver or alcoholic. Since important social variables may differ from community to community, this is a serious problem. It has been mitigated by reporting information from a number of studies with the assumption that a comparison between two sets of studies will be likely to counterbalance any geographical biases inherent in comparing just two studies.

A limitation in the present review is that most studies have little information on the female DWI. This is due directly to the relatively few female DWIs (3% to 10% of the samples) or a decision by the investigators to exclude females from the studies because of such small percentages. Consequently, nearly all of the informatio in the present paper is based on the male DWI. However, it is likely that the female DWI driver is at least as much an alcohol abuser as the male DWI driver. Argeriou and Paulino (1976) have suggested that the female DWI driver exhibits even more serious evidence of social pathology than her male counterpart.

The following represents summaries and/or typical exapmles of the data found in the papers reviewed. The complete data can be found in Appendix B.

Marital Status

DWI drivers are more likely to be divorced, separated, or widowed than control drivers but less likely than alcoholics. Studies found between 22% and 41% of the DWIs were divorced, separated, or widowed in comparison with 5% to 7% of the control drivers. Roughly half of the alcoholics were reported divorced, separated, or widowed. (See Table 1.)

Employment

Unemployment ranges from 9% to 18.4% among DWI drivers. Argeriou and Paulino (1976) reported that 42% of their sample of female DWI drivers were unemployed. A nationwide survey of alcoholics' unemployment indicated 60% of alcoholics in treatment were unemployed. These figures are of course much greater than national percentages of 4% to 8% during the past decade. (See Table 2.)

Occupation

DWI drivers are more likely to have lower level occupations than control drivers but higher level than alcoholics. Between 49.1% and 79% of the DWI drivers hold blue collar jobs, compared to 42% to 60% of the control drivers. (See Table 3.)

Income

DWI drivers have lower annual incomes than control drivers but higher than alcoholics. For all studies reviewed, the mean annual income for DWIs was $9,409. The mean annual income for alcoholics was $9,367 adn for control drivers, $11,075. (See Table 4.)

Blood Alcohol Concentration (BAC) at the Time of Arrest

Mean BACs at the time of arrest for DWI drivers range between .18% and .28%. Some studies have found at least 70% of DWIs with BACs higher than .15%. None of the studies reviewed contrasted the BACs of control drivers or alcoholics with DWI drivers. However, an analysis of a national roadside breath-testing survey (Wolfe, 1973) indicated that 5.5% of the drivers in the roadside surveys had BACs of .10% or higher and only 1.4% had BACs of or in excess of .15%. Thus only 25% of the drivers above the legal limit are at or above .15%, in contrast to 70% or greater among the DWIs. (See Table 5.)

Drinking Behavior

DWI drivers report drinking more frequently and with greater quantities than control drivers but less often with smaller quantities than alcoholics. For example, Pollack (1969) reported that 18% of DWI drivers and 11.5% of control drivers reported daily drinking. Zelhart, Schurr, nad Brown (1978) reported that 13% of DWI drivers, 9% of control drivers, and 76% of alcoholics reported five or more drinking days per week. Bell, Warheit, Bell, and Sanders (1978) found that 38.3% of DWI drivers and 53.7% of alcoholics reported daily drinking. (See Table 6.)

Pollack (1969) found 5.7% of control drivers and 35.2% of DWI drivers reported drinking five or more drinks per sitting. Zelhart, et al. (1978) found that 41% of DWI drivers drink seven or more drinks per day as opposed to 17% of control drivers and 82% of alcoholics. Finally, Bell, et al. (1978) reported that 22.9% of DWI drivers and 75.6% of alcoholics reported having five drinks or more per day. (See Tables 7 and 8.)

Beer is the preferred beverage of DWI drivers while alcoholics appear to prefer liquor and control drivers appear to have no preference for one alcoholic beverage over another. Between 46% and 64.4% of the DWI drivers prefer beer. Among alcoholics, approximately 25% prefer beer with most indicating a preference for a combination of beverages. About 38% of the control drivers reported a preference for beer and roughly half indicated a preference for combinations of beverages. In all categories of drivers, wine appears to be the least preferred beverage. (See Table 9.)

Reasons for Drinking

Two studies by Selzer and associates (Selzer and Barton, 1977, Selzer, Vinokur, and Wilson, 1977) report that a higher ratio of DWI drivers drink for tension relief compared to social relaxation than do control drivers. Alcoholics use alcohol even more frequently to ease tension. Pollack (1969) reported that DWI drivers were more likely than control drivers to drink for the following reasons, "habit or routine, to relax after a busy day, to relieve frightened feelings, to cope with personal problems, to ease tension when worried, to go along with the group, and to overcome shyness". (See Table 10.)

Problems Due to Drinking

DWI drivers exhibit more problems due to drinking such as poor physical health, family and marital discord, financial difficulties, and difficulties related to employment than control drivers. Alcoholics are even worse.

Bell et al. (1978) found 34.6% of the alcoholics compared to 8.5% of the DWI drivers had been warned by their physicians about their drinking. The alcoholics reported more illness, accidents, and hospitalization due to drinking than DWI drivers. Warheit, Bell, Ubieta, and Melevin (1978) found that 5% of a DWI sample had been warned about their drinking within the past year and an additional 4.6% had received a warning previously. Pollack (1969) found 20% of a DWI sample reported only fair or poor health compared to 3.9% of the control drivers. (See Table 11.)

Sixteen percent to 30% of the DWIs report family problems or conflicts due to drinking as against 92% of the alcoholics and only 2% of the controls. Pollack (1969) found that 49% of the DWIs spouses had objected "often" or "sometimes" to their drinking compared to only 3% of the controls. (See Table 12.)

Thirty-four percent of the DWI drivers in Pollack's (1969) study indicated that spendings on alcohol cut into their budget, compared to 4% of the controls. Bell et al. (1978) found significantly more alcoholics (31.8%) than DWI drivers (6.8%) indicated that sometimes they could not pay bills because of money spent on alcohol. (See Table 13.)

Pollack (1969) reported that 17% of the DWI drivers compared to 5.7% of the controls indicated that they had job problems such as a decrease in efficiency due to drinking, problems with fellow employees, employer discussed drinking, quitting a job before being fired, or being fired. In Zelhart et al. (1975) far more alcoholics (36.7%) lost their jobs due to drinking than DWI drivers (7%) and control drivers (0%). Bell et al. (1978) found that alcoholics were more likely to be threatened

with loss of their jobs due to drinking (14%) and were more likely to quit or change their jobs (15.2%) than were DWI drivers (1.7% and 0.8%, respectively). Further, alcoholics were more likely to be fired from their jobs (13.5%) than DWI drivers (3.4%). (See Table 14.)

Prior Treatment Entry for Alcohol-Related Problems

Waller (1967) found that none of the control drivers had been hospitalized or seen at alcoholism clinics whereas 2.7% of the DWIs had been hospitalized and 6% had been to an alcoholism clinic. Most studies report 2% to 42.5% of DWI drivers had previously entered some form of treatment, while 49.8% to 71% of the alcoholics had some prior treatment for alcoholism. (See Table 15.)

Diagnosis of Problem Drinking

The most frequently used measurement for diagnosing problem drinking has been the Michigan Alcoholism Screening Test (MAST). It is suggested that scores greater than 5 on a scale ranging from 0 to 25 are indicative of problem or alcoholic drinking. The mean scores of DWI drivers sampled ranged from 4.22 to 4.77, while controls scored between 2.46 and 2.61 and alcoholics scored between 6.54 and 6.73. Between 54% and 74% of the DWI drivers scored higher than 5 on the MAST whereas 99% of the alcoholics scored higher than 5. (See Table 16a.)

The Mortimer-Filkins Test was administered to DWI drivers assigned to ASAP programs in studies by Ellingstad and Struckman-Johnson (1978) and Nichols, Ellingstad, and Struckman-Johnson (1978). Mean scores were reported to range from 12.7 to 19.4 in eleven groups of DWI drivers. Scores of less than 15 indicate the absence of problem drinking; scores between 16 and 23 indicate presumptive evidence of problem drinking; and scores greater than 24 indicate problem drinking. Unfortunately no studies reported scores for comparable groups of control drivers or alcoholics. (See Table 16b.)

Studies show that between 20% and 37% of the DWI drivers perceive that they have a drinking problem. About 81% of the alcoholics and only 3% of the control drivers defined themselves as problem drinkers or suspected that they might have a drinking problem. (See Table 16c.)

Drinking and Driving Behavior

In regard to drinking and driving, Pollack (1969) found that 49% of the DWI drivers and 12% of the control drivers drove at least once a week after drinking two or more drinks. In addition, 18% of the DWI drivers but only 1.8% of the control drivers reported driving at least once a week after drinking more than they could safely handle. Three studies (Selzer and Barton, 1977; Selzer and Vinokur, 1976; and Selzer, Vinokur, and Wilson, 1977) show that both DWI drivers and alcoholics report driving after drinking much more frequently than control drivers. Selzer and Barton (1977) found 97.4% of DWIs and 92.3% of the alcoholics reported driving at least once after more than four drinks as opposed to 61.5% of the controls. (See Table 17.)

Total Prior Arrests (Alcohol- and Non-Alcohol-Related Arrests)

For DWI drivers, the percentage of persons with no prior arrests at all ranges from 0% to 28%; for control drivers, the percentage varies from 85% to 98.5%. The DWI drivers report far more alcohol-related arrests than do control drivers but somewhat less alcohol-related arrests than alcoholics. (See Table 18.)

Driving History

While the alcoholic has a worse driving history than the control driver, most studies found that DWI drivers have a poorer driving record than either the alcoholic or the control driver. The DWI driver has more overall traffic offenses, more moving violations, more accidents or crashes, and more suspended or revoked licenses than either the alcoholic or control driver. For example, Filkins, Clark, Rosenblatt, Carlson, Kerlan, and Manson (1970) found that only 8% of the DWI drivers sampled had no traffic violations whereas 47% of the control drivers and 34% of the alcoholics had no such violations. Also 58% of the DWI drivers had four or more prior traffic violations while only 12% and 16% of the control drivers and the alcoholics respectively had four or more prior violations. While 71% of the control drivers and 60% of the alcoholics reported no prior automobile accidents, only 34% of the DWI drivers reported no prior accidents. Finally, 2% of the DWI drivers reported no prior DWI arrests, 96% of the control drivers reported no prior DWI arrests, and 56% of the alcoholics reported no prior DWI arrests. (Selzer, Vinokur, and Wilson, 1977). (See Table 19.)

Why the DWI has an even worse driving record than the alcoholic is not clear. One possibility is that the alcoholic comparison groups which are being used here are all in treatment and have had considerable hospitalization. Thus they would have less opportunity for driving. Moreover, their socio-economic status is lower than DWIs and they may thus be less likely to possess automobiles. Finally, there are socio-cultural factors which have made certain drinking drivers more likely to be apprehended by the police, so that the driving records of the DWIs and alcoholics may not reflect their relative frequency of driving under the influence of alcohol.

Personality

Studies investigating personality disturbances found that compared to control drivers, DWI drivers showed more neuroticism, experienced more depression, showed greater suicide proclivity, and were more paranoid. They also evidenced lower self-esteem, showed less feelings of responsibility, and felt more aggression than control drivers. When compared to alcoholics, the DWI drivers showed more positive and more socially appropriate tendencies in these areas and appear to be more socially integrated. On several personality scales administered, DWI drivers consistently scored between the control drivers and the alcoholics (Selzer and Barton, 1977; Selzer, Vinokur, and Wilson, 1977). (See Table 20.)

Stress

Several studies have investigated the extent to which stress, including family marital, and financial stress, have impact on the DWI driver. Selzer and Barton (1977) and Selzer, Vinokur, and Wilson (1977) found that on scales measuring stress, the mean scores of the DWI drivers consistently fell between the control drivers and the alcoholics on such variables as "frequency of family problems" or "frequency of job problems". (See Table 21.)

Education

The mean education of the DWI drivers is approximately eleven years of school. The percentages of high school graduates among DWI drivers ranges from 9.8% to 71%, with most falling between 41% and 58%. Pollack (1969) and Zagorski (1976) found 76% and 80% of control drivers respectively were high school graduates whereas 41% and 71% of DWI drivers were high school graduates. Bell, et al. (1978) reported that 46% of a group of alcoholics had graduated from high school in comparison with 54% of a group of DWI drivers from the same community. (See Table 22.)

Age

The highest proportion of DWI drivers were between 30 years and 45 years. Compared to control drivers, DWI drivers have slightly higher mean ages and DWI drivers under 25 years and over 50 years are underrepresented. Compared to alcoholics, DWI drivers have slightly lower ages. (See Table 23.)

Race

Most control drivers, DWI drivers, and alcoholics are Caucasian. However, the percentage of minority groups among DWI drivers is higher than the percentage of minority groups among control drivers. For studies with comparison groups, the percentage of Caucasians among control drivers ranged from 69.6% to 91.2%; the percentage among DWI drivers ranged from 35% to 92.8%; and the percentage among alcoholics ranged from 81% to 87.4%. (See Table 24.)

CONCLUSIONS

The above data clearly suggest that the current population of DWIs contains a high proportion of alcohol abusers. They are not likely to contain many individuals for whom the DWI arrest occurred on a single rare instance of alcohol overuse. Perhaps this is due to the extremely low probability of being arrested for DWI when one is driving above the legal limit. It has been estimated that the probability of being arrested is roughly 1 in 1000 to 2000. Therefore, it is most unlikely that a DWI arrest will represent the first time that an individual has driven under the influence of alcohol.

A composite profile of the DWI driver indicates that he is most often a male, aged 30 to 45 years. He is more likely to be separated, divorced, or widowed than the control driver. He has less education and less income and is employed in lower level jobs than the control driver. In addition, he has greater incidence of unemployment or difficulties on his job due to his drinking. He reports drinking more often and with larger quantities of alcohol than the control driver. There are indications of psychosocial disturbances in his life and his drinking behavior appears to reflect stress and difficulties. The driving history of the DWI driver is worse than the control driver and he drinks and drives much more often. On most of the variables discussed, the DWI driver appears to move away from the control driver and towards the alcoholic, especially in terms of the variables related to mental health and drinking and driving. On variables which indicate problem drinking behavior and life disturbances, DWI drivers resemble alcoholics.

The picture obtained from the review of the literature clearly suggests that in general, the DWI is an alcohol abuser with behavioral trends approaching that of the alcoholic. Although his drinking problems may not have reached the extremes found among the majority of those in treatment programs, clearly the DWI is in need of help for his drinking problems.

In some ways the DWI is a potentially good candidate for treatment. He is more socially integrated than the alcoholic. While his life contains many problems, he has not socially disintegrated. He has more resources such as family, job, income, and stability than the typical alcoholic in treatment.

Data from Pollack (1969) suggest that as the number of DWI convictions increases, the description of the DWI driver approaches more closely that of the alcoholic. If it is true that many DWIs are progressing towards more serious alcohol problems, then early treatment should provide a better prognosis than later treatment. Nichols, et al. (1978) reports greater success with rehabilitation programs for social-drinker DWIs than for problem-drinker DWIs. Presumably, first DWI offenders are more likely to contain drinkers defined as social drinkers. Current approaches of saving treatment programs for multiple offenders militates against successful treatment. Moreover, successful treatment of first offenders saves the necessity for more extensive and less successful treatment of multiple offenders.

It is not suggested that treatment programs be offered as the best measure for countering drinking driving behavior among the DWI population. Rather, they are suggested because these individuals are in need of help for their drinking, not merely for drinking and driving. If agencies interested in the problem of alcohol abuse and alcoholism are at all interested in prevention, the DWI represents an unparalleled means of identifying cases in need of help to prevent further deterioration.

Regardless of whatever treatment program is offered the DWI, there will remain the drinking driver problem. Numerically the DWI is but a portion of the drinking driver problem. There are hundreds of millions of episodes annually in the United States of driving while at a BAC of .10% or above, not to mention the many times greater number of episodes where driving occurs at or above .05%, a BAC level where accident probability is already doubled. Undue attention has been paid to the DWI perhaps because he is the most visible portion of the problem. The majority of the problem remains hidden in the greater multitude of unapprehended drinking drivers. If the DWI is not representative of the drinking driver population as a whole, programs aimed at the current DWI population are unlikely to be appropriate for dealing with the greater drinking driver population.

To repeat, the DWI is an alcohol abuser who needs a serious comprehensive program to counter his trends towards alcoholism. As such, positive outcomes require speedy and thorough intervention. Progress is unlikely to be rapid, based on experience with treating alcoholics. Countering the drinking driving problem requires some means of reversing the behavior of the majority of drinking drivers who are not apprehended as DWI and who appear to differ in characteristics from the DWI.

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APPENDIX A
ABSTRACTS

Argeriou, M. and Paulino, D. Women arrested for drunken driving in Boston. Social characteristics and circumstances of arrest. Journal of Studies on Alcohol, May 1976, 37, 648-658.

This study investigated 73 women arrested for driving while intoxicated and referred to the Boston Alcohol Safety Action Program. The sample of women referred to the Boston ASAP was compared with women who were arrested but not referred. The only significant difference between the two groups was the BAC at the time of arrest; the women referred to the ASAP had much higher BACs than the women not referred. It was assumed by this study that the findings can be generalized to women arrested for DWI in Boston. Demographic data, psychosocial information, prior arrests, alcohol involvement, and circumstances of arrest were discussed in this study.

Bell, R.A., Warheit, G.J., Bell, R.A., and Sanders, G. An analytic comparison of persons arrested for driving while intoxicated and alcohol detoxification. Alcoholism: Clinical and Experimental Research, 1978, 2(3), 241-248.

This study presents findings which compare 118 individuals arrested for driving while intoxicated and required to attend a drinking and driving school with 247 alcoholic patients currently in an outpatient alcoholism treatment program in Eustis, Florida. Comparisons included socio-demographic characteristics and drinking attitudes, drinking behavior, social consequences of drinking, functioning in relationship to jobs and finances, stressful life events, health, and self-perception.

Denberg, D. and Smart, R.G. Recidivism and collision involvement of impaired drivers: some implications for countermeasures. Proceedings of the 4th NIAAA Conference, 1975, 63-71.

This study investigated traffic records of a random sample of drivers with a conviction for driving while intoxicated in Ontario, Canada. This study was primarily designed to discuss the recidivism rates among DWI drivers. However, a few demographic characteristics and the driving histories and alcohol-related arrests were discussed in the present paper.

Ellingstad, V.S., and Struckman-Johnson, D.L. Short Term Rehabilitation Study (STR): Interim Analysis of STR Performance and Effectiveness. DOT-HS-803 285. Vermillion, South Dakota: Human Factors Laboratory, University of South Dakota, 1978.

This study was conducted at eleven Alcohol Safety Action Programs across the United States; the purpose was to evaluate the effectiveness of the programs. The study included 3,666 subjects who were referred by the courts after being arrested and/or convicted of driving-while-intoxicated. The information obtained at intake into the ASAP included demographic data, scores on the Mortimer-Filkins questionnaire, BAC at the time of arrest, and prior arrest history. The data from each of the eleven sites were pooled and the averages were presented. Although the study was designed to follow-up the ASAP clients, only the information provided at intake was considered in the present paper.

Filkins, L.D., Clark, C.D., Rosenblatt, C.A., Carlson, W.L., Kerlan, M.W., and Manson, H. Alcohol abuse and traffic safety: a study of fatalities, DWI offenders, alcoholics and court related treatment approaches. Ann Arbor, Michigan: Highway Safety Research Institute, University of Michigan, June, 1970.

This report is a compilation of three separate studies concerning the involvement of alcohol abuse and traffic safety. Project I involved case history investigation of 616 traffic fatalities from metropolitan Wayne County, Michigan during roughly a two year period. This project attempted to identify drinking involvement of the fatalities, investigate, compare and analyze alcohol related accidents and describe, via demographic,driving, criminal and social agency information, the population of drinking traffic fatalities. Project II investigated 1247 hospitalized patients diagnosed as alcoholics and/or referred to the Hurly (Michigan) hospital treatment program for alcoholism over an eleven year period. The study focused on the driving performance of these patients from 1961 to 1967 to describe those alcoholics who contribute disproportionatly to traffic death, injuries, property damage and determine the characteristics of such indiviudals to predict which are likly to be involved in future such traffic crashes. Project III investigated ten court-related treatment programs to assist in policy and treatment decisions for program planners considering using court related treatment programs. A final study was included comparing four populations, the alcoholic populations from projects I and II, a random sample of Michigan drivers and drivers convicted of DWI in Detroit, Michigan from 1967 to 1969. Demographic characteristics of these four populations and their 6.5 year driving histories were compared. The data used in the present literature review was selected from this last study involving the four comparison groups.

Filkins, L.D., Mortimer, R.G., Post, D.V., and Chapman, M.M. Operational evaluation of court procedures for identifying problem-drinkers. Proceedings of the American Association of Automotive Medicine, 1974, 18, 360-376.

Responses from 709 DWI defendants from 3 Alcohol Safety Action Programs (Fairfax County, Virginia, San Antonio, Texas, and New Orleans, Louisiana) were obtained for this study. All DWI defendants in these three locations were required to attend the ASAP for pre-sentence evaluations. Information collected included demographic characteristics, prior arrests, and BAC at the time of arrest. Unfortunately, the specific methods and criteria for data collection in each ASAP were not elaborated and not all variables were recorded at each ASAP.

Fine, E.W., and Scoles, P. Secondary prevention of alcoholism using a population of offenders arrested for driving while intoxicated. Annals of the New York Academy of Sciences, 1976, 273, 637-645.

Subjects in this study were 2,358 persons arrested for driving-while-intoxicated in Philadelphia, Pennsylvania, and required to participate in a presentence investigation. In addition to demographic data, information was obtained on quantity and frequency of alcohol intake, problems due to alcohol usage, and blood alcohol concentration at the time of arrest. The Neuroticism Scale of the Eysenck Personality Inventory was also administered. The data were combined to categorize the subjects into one of three levels of problem drinking: "social drinker", "problem drinker", and "severe problem drinker".

Fine, E.W., Scoles, P., and Mulligan, M.J. Alcohol abuse in first offenders arrested for driving while intoxicated. In S. Israelstam and S. Lambert (Eds.): Alcohol, Drugs, and Traffic Safety. Toronto: Addiction Research Foundation, 1975.

This study involved 2,647 persons who had been arrested for driving while intoxicated and referred to a safe-driving program in Philadelphia, Pennsylvania, for evaluation. This group represented about 28% of the total DWI arrests in that period and all arrestees were required to undergo the evaluation. The evaluation included questions regarding demographic data, past and present family drinking patterns, and a Drinking Behavior Interivew form which covered the individual's drinking pattern and how it affected social and economic functioning. Based on the obtained information, the study further identified three levels of alcohol impairment and assigned the subjects to one of the three levels.

Fine, E.W., Scoles, P., and Mulligan, M.J. Under the influence: characteristics and drinking practices of persons arrested the first time for drunk driving, with treatment implications. Public Health Reports, 1975, 90, 424-429.

This study investigated 1,500 persons convicted of DWI in Philadelphia, Pennsylvania. Each offender had been given the option of being prosecuted or completing a psychosocial evaluation and attending an alcohol safe-driving school. Those reported in the study chose the latter option.

Data collected was based on a Client Intake Form deriving demographic and socioeconomic information, alcohol impairment, past and present drinking patterns, and social, legal, and behavioral information. The second source of data was a House Interview Form administered to spouses to verify, when possible, the Client Intake Form information.

Eleven questions in the Client Intake Form determined the degree of physical and behavioral symptoms as a result of alcohol use. Six questions measured the rate and consumption of alcoholic beverages in the preceding month. The seventeen questions were combined to form an Alcohol Impairment Index which consisted of three levels, generally characterized as excessive drinkers, moderately-excessive drinkers, and social drinkers.

Foley, J.P., Glauz, W.D., and Sharp, M.C. Profile analysis of persons arrested for drunk driving. Human Factors, 1976, 18, 455-463.

These groups of drivers, drivers arrested for driving-while-intoxicated, culpable drivers involved in fatal accidents, and drunk drivers sampled from annual roadside surveys, were studied in Kansas City, Missouri. Police department records and official accident reports provided information on the arrested DWI drivers and the culpable drivers. This study explored the relationships between the DWI drivers demographic characteristics and BAC at the time of arrest, court disposition, crash or no-crash involvement, referral to treatment and probationary status. This study also performed several analyses of variance and developed profiles to determine similarities and differences among the three driver groups.

For the purposes of the present paper only information regarding the arrested DWI drivers was discussed.

Fridlund, G. and Hagen, R. Characteristics of DWI drivers. (Prepared for U.S. Department of Transportation). Menlo, California; Stanford Research Institute, 1977.

This study investigated drivers convicted of driving-while-intoxicated and drivers fatally injured in accidents in Los Angeles County, California. Information concerning the DWI drivers was obtained in presentence investigation, including interviews, questionnaires, and arrest reports. Information concerning the fatally-injured drivers was obtained from the coroner's office and accident reports. The two groups were compared on the following variables: demographic characteristics, driving history, prior arrests including DWI arrests, and BAC at the time of arrest.

For the purposes of this present paper, only information about the DWI drivers was discussed.

Hyman, M.M. The social characteristics of person arrested for driving while intoxicated. Quarterly Journal of Studies on Alcohol, March 1972, 33(1), 148-159.

This study investigated the social characteristics of drunk drivers convicted of DWI in Santa Clara,California and Columbus,Ohio during the first six months of 1962. Comparisons of these two regional populations were made on demographic variables including age, race, occupation, employment,status,census tract, etc. Further, an "arrest vulnerability ratio",defined as the percentage in a demographic category for the specific population devided by the percentage of the 1960 census population for the same category, was also used for comparison purposes. In the present study, only demographic information including BAC, age, race and sex were used.

Kelleher, E.M. A diagnostic evaluation of 400 drinking drivers. Journal of Safety Research, 1971, 3(2), 52-55.

The study collected data from 250 persons convicted of driving while intoxicated and required to participate in a court-ordered examination. All persons convicted of DWI were required as a condition of probation to undergo such an examination. In addition this study collected data from 100 persons who were arrested for driving while intoxicated and whose cases had been discharged by the court. Primarily the information reported in this study was about prior arrests and problem drinking. Comparisons were also made between arrested DWI drivers and convicted DWI drivers.

Maisto, S.A., Sobell, L.C., Zelhart, P.F., Connors, G.J., and Cooper, T. Driving record of persons convicted for driving under the influence of alcohol. Journal of Studies on Alcohol, 1979, 40, 70-77.

The driving records of a random sample of all licensed drivers in Tennessee and the driving records of an independent sample of all Tennessee drivers with at least one DWI conviction were compared. Demographic characteristics were studied for both groups. DWI offenders were differentiated on the basis of first and multiple offenses to determine the probability of additional DWI convictions. Finally, examination of driving histories (traffic violations, accidents, etc) was conducted for the control group, first offenders and multiple offenders.

Nichols, J.L., Ellingstad, V.S., and Struckman-Johnson, D.L. An experimental evaluation of the effectiveness of short term education and rehabilitation programs for convicted drinking drivers. Presented at the National Council of Alcoholism Annual Forum, St. Louis, Missouri, May 2, 1978.

This study reported on the same subjects as Ellingstad and Struckman-Johnson (1978) and the abstract of that study applies to this study. The data from each of the eleven ASAP sites were presented separately.

Perrine, M.W. Identification of personality, attitudinal, and biographical characteristics of drinking drivers. Behavioral Research in Highway Safety, 1970, 1, 207-226.

This study discussed the results from a larger study of six samples of drivers: fatal crashes, hospitalization crashes, drivers with at least one DWI citation, drivers with other citations (no DWIs), clear-record roadside survey drivers at the scenes of fatal crashes, and clear-record roadside survey drivers at the scenes of hospitalization crashes. Data was collected from accident reports, post-mortem interviews, and interview questionnaires. The respondent information consisted of demographic data, drinking patterns, driving history, several scales from the Driver Attitude Survey, and several scales from the Eysenck Personality Inventory. Although six groups of drivers were compared, only two groups were discussed in the present paper, the DWI citation group and a combination of clear-record roadside survey groups.

Perrine, M.W. The Vermont driver profile: a psychometric approach to early identification of potential high-risk drinking drivers. In S. Israelstam and S. Lambert (Eds.), Alcohol, Drugs, and Traffic Safety. Toronto: Addiction Research Foundation, 1975.

This study was designed to develop a Driver Profile questionnaire. Data was obtained for the following variables: biography, driving history, drinking history, and attitudes. Respondents in the study were sampled from applicants for license renewal. The groups of respondents were identified as follows: operators, applying for or renewing an operator's license; fleet safety, Vermont State employees applying for a license to drive state vehicles; and DWI drivers convicted of driving while intoxicated and required to complete the licensing procedure again. For the purposes of the present paper, only data on the operators and the DWI drivers were compared.

Pollack, S. Drinking driver and traffic safety project. Volumes I and II. Los Angeles, California: Public Systems Resear-h Institue, University of Southern California, July, 1969.

Three separate studies comprise this report and were conducted in California in 1969. The first is a descriptive report comparing a sample of convicted DWIs with the Department of Motor Vehicle sample of drivers seeking license renewal. The second study compared deceased drivers who had not been drinking prior to their accident with drivers who had been drinking prior to their accident. The third study reported on six different population samples; accident involved deceased non-drinking drivers, accident involved deceased drinking drivers, accident involved Department of Motor Vehicles sample, non-accident involved Department of Motor Vehicle sample, accident involved convicted drinking drivers, non-accident involved convicted drinking drivers. In the present review, only the convicted drinking driver data from the first study and the data from the non-accident convicted drinking driver from the third study were used and compared against the control counterparts.

Selzer, M.L. The Michigan Alcoholism Screening Test: the quest for a new diagnositic instrument. American Journal of Psychiatry, 1971, 127(12), 1653-8

In order to further validate the Michigan Alcoholism Screening Test (MAST) the test was administered to five groups of subjects: hospitalized alcoholics, persons arrested for driving-while-intoxicated, persons arrested for drunk and disorderly behavior, persons whose driver's license was under review, and persons randomly selected at a university allergy clinic and from university employees. The MAST was administered to all subjects. In addition, records of all medical facilities and social agencies in the location of the study (Washtenaw County, Michigan) were searched for the names of all the subjects and their family members. Also, complete arrest records and traffic records were obtained for all subjects. A validation score was derived from the MAST score, the medical-social records, and the driving-criminal records. For the purposes of the present paper, only the raw data for the hospitalized alcoholics, the DWI drivers, and the control groups were examined.

Selzer, M.L. and Barton, E. The drunken driver: a psychosocial study. Drug and Alcohol Dependence, July 1977, 2(4), 239-253.

This study is a replication of two earlier studies by Selzer and Vinokur (1976) and Selzer, Vinokur, and Wilson (1977). Self-administered questionnaires were given to 306 male drivers convicted of driving while intoxicated, 294 male alcoholics in treatment, and 253 male licensed drivers; all subjects were from the state of Michigan. The convicted DWI drivers had been required to participate in counseling programs and in the study. Demographic and drinking characteristics were collected and the Crowne-Marlowe Social Desirability Scale was administered. A major section of the study was devoted to psychosocial variables which included reasons for drinking, effects of drinking, stress, coping with tension, depression, neuroticism, self-esteem, self-control, responsibility, paranoid thinking, and aggression.

Selzer, M.L., and Vinokur, A. Driving and psychosocial characteristics of drunk drivers. Proceedings of the American Association of Automotive Medicine, 1976, 19, 244-252.

This study presents findings comparing convicted DWI drivers (N=306), alcoholics (N=289), and control drivers (N=269) from the state of Michigan. Measures were obtained for demographic characteristics, drinking and driving behavior, and psychosocial variables including stress, self-esteem, depression, paranoid thinking, and aggression.

Selzer, M.L., Vinokur, A., and Wilson, T.D. A psychosocial comparison of drunken drivers and alcoholics. Journal of Studies on Alcohol, 1978, 39, 922-925.

Three groups of male subjects from three Michigan counties were compared on several demographic drinking and psychosocial variables. The subjects selected were 306 convicted drunken drivers, 289 alcoholis in either in patient or out patient treatment and 269 controls i.e., men renewing their drivers licenses. The drinking variables studied included quanity and frequency of consumption,reasons for drinking, effects of drinking and the MAST. The social variables studied included family and job stress, and leisure time activity.

Several psychosocial variables were investigated and among them were responsibility, self control, self esteem, depression, paranoid drinking, suicidal proclivity and aggression.

Steer, R.A. and Fine, E.W. Mood differences of men arrested once and men arrested twice for driving while intoxicated. Journal of Studies on Alcohol, 1978, 39, 922-925.

This study included two samples of DWI drivers, first and repeat offenders, drawn from one month's consecutive admissions to the Evaluation Unit of Philadelphia's Alcohol Highway Safety Program. All persons convicted of driving while intoxicated were required to complete a diagnostic evaluation at the Evaluation Unit. Information was collected with a personal data questionnaire, the Quantity-Frequency Index and the Profile of Mood States.

For the purposes of the present review, the samples of first and repeat DWI offenders were combined to be comparable with other studies reviewed which did not specify first or repeat DWI offenders.

Warheit, G.J., Bell, R.A., Ubieta, R., and Melevin, P.T. A socio-psychiatric assessment of the driving while intoxicated offender. Unpublished paper, 1978.

This study collected data from 345 persons who were ordered to attend classes for drinking and driving safety at Lake-Sumter Community Mental Health Center in Eustis, Florida. All persons in the study had been convicted of driving while intoxicated and all those convicted of driving while intoxicated were required to attend the classes. An interview-questionnaire was administered to obtain demographic information, physical and mental health characteristics, drinking history and patterns, and measurements of self-concept and personal and social functioning. The questionnaire included items from the Health Opinion Survey and items previously checked for reliability and validity elsewhere (See Bell, et at., 1978).

Waller, J.A. Identification of problem drinking among drunken drivers. Journal of the American Medical Association, 1967, 200 (2), 114-120.

This study, conducted in Oakland, California, gathered information about previous contact with community agencies for six different samples. Particular attention was given to evidence of problem drinking. The six samples included drivers convicted for driving while intoxicated (N=150), accident-involved drivers who had been drinking but not arrested (N=33, sober drivers involved in accidents (N=131), drivers with citation and arrest warrants (N=19), and incident-free drivers (N=150). Results presented include distribution of ages of the various groups, prior arrest records and contact with community agencies. For the purposes of this literature review only the incident free and DWI groups were compared.

Yoder, R.D. Prearrest behavior of persons convicted of driving while intoxicated. Journal of Studies on Alcohol, 1975, 36, 1573-1577.

All first offenders and repeat offenders convicted of driving while intoxicated were ordered by the El Cajon, or Oceanside, California, courts to attend a drinking and driving education program. All participants in the study were required to complete a personal data questionnaire and a twelve-hour prearrest narrative. The narrative and questionnaire supplied information concerning the type of stress experienced at the time of arrest and the drinking and driving behavior.

For the purposes of the present review, the samples of first and repeat DWI offenders were combined to be comparable with other studies reviewed which did not specify first or repeat DWI offenders.

Yoder, R.D. and Moore, R.A. Characteristics of convicted drunken drivers. Quarterly Journal of Studies on Alcohol, September 1973, 34 (3), 927-936.

This study included first and repeat offenders convicted of driving while intoxicated. The samples included all drivers convicted in the El Cajon Court in California. The court required participation in a drinking and driving education program as a condition of probation.

Information on the drivers was obtained prior to participation in the education program and included demographic and psychosocial characteristics, drinking and driving behavior, and alcohol abuse patterns. The data was derived from personal data questionnaires, twelve-hour prearrest narratives, the Michigan Alcoholism Screening Test, and blood alcohol concentrations.

For the purposes of the present review, the samples of first and repeat DWI offenders were combined to be comparable with other studies reviewed which did not specify first or repeat DWI offenders.

Zagorski, R.P.H. A demographic study of the census tracts of residence of persons convicted of driving under the influence of alcohol in Los Angeles County, California. Master's Thesis, California State University, Los Angeles, California, June, 1976.

The study collected data on 779 persons convicted of driving while intoxicated in Los Angeles County. This random sample was 2.2% of the total number of DWI convictions for a six-month period. From the municipal court records demographic characteristics were recorded. For a comparison, a subject's residence was used to identify census tract data for the same demographic characteristics collected on the DWI drivers. This study does not compare DWI drivers specifically with average drivers and assumes that within an area of residence drivers are homogeneous.

Zelhart, P.F., Schurr, B.C., and Brown, P.A. Drinking driver: identification of high-risk alcoholics. In S. Israelstam and S. Lambert (Eds.). Alcohol, Drugs and Traffic Safety. Toronto: Addiction Research Foundation, 1975.

This study compared five groups of drivers in Alberta, Canada. Of particular interest to the present paper were the impaired drivers who had been convicted of driving-while-intoxicated, the alcoholics from in-patient and outpatient alcoholism treatment programs, and volunteers from the Royal Canadian Mounted Police who were social drinkers or non-drinkers. Two additional groups were observed by the study but not included in the present paper: volunteers from the Royal Canadian Mounted Police who were "regular and frequent" consumers of alcohol and high risk-drivers who had accumulated high numbers of demerit points but had not alcohol related incidents on their records. Information was obtained using a Personal Information Questionnaire for socio-demographic data, the Howarth Personality Questionnaire, the MAST and the Psychoticism, Extroversion and Neuroticism Scales of the Eysenck Personality Inventory.

Zung, B.J. Factor structure of the Michigan Alcoholism Screening Test. Journal of Studies on Alcohol, 1978, 39, 56-67.

Data was collected from 1000 drivers arrested for driving while intoxicated in Harris County, Texas. The offenders were referred by the court to Baylor College of Medicine for a pretrial evaluation. Demographic characteristics were recorded and the Michigan Alcoholism Screening Test was administered to all subjects.

Table 1.

MARITAL STATUS
(per cent)

AUTHORS	DATE	SINGLE			MARRIED			SEPARATED			DIVORCED			WIDOWED		
		C	D	A	C	D	A	C	D	A	C	D	A	C	D	A
Argeriou & Paulino	1976	--	18.0	--	--	41.0	--	--	33.0[a]	--	--	--	--	--	8.0	--
Bell et al.	1978	--	17.5	11.7	--	53.5	34.6	--	7.0	12.9	--	15.8	30.0	--	6.1	10.8
Ellingstad et al.	1978	--	30.1	--	--	44.2	--	--	25.7[a]	--	--	--	--	--	--	--
Filkins et al.	1974 VA	--	25.7	--	--	52.6	--	--	18.8	--	--	3.0	--	--	0.0	--
	LA	--	17.6	--	--	51.3	--	--	25.1	--	--	3.5	--	--	2.5	--
Fine & Scoles	1976	--	20.7	--	--	47.5	--	--	26.9[a]	--	--	--	--	--	--	--
Fine et al.	1975a	--	21.5	--	--	52.0	--	--	14.2	--	--	8.2	--	--	3.7	--
Fine et al.	1975b	--	20.9	--	--	53.5	--	--	--	--	--	--	--	--	--	--
Nichols et al.	1978	20.0	30.0[b] 27.0[c]	18.0	75.0	47.0[b] 48.0[c]	28.0	5.0[a]	23.0[a] 25.0[a]	54.0[a]	--	--	--	--	--	--
Pollack	1969	16.7	12.0	--	67.9	51.0	--	7.0[a]	23.0[a]	--	--	--	--	--	--	--
Warheit et al.	1978	--	17.0	--	--	40.6	--	--	9.1[d]	--	--	11.3	--	--	6.3	--
Yoder & Moore	1975	--	11.0	--	--	55.0	--	--	23.0[e]	--	--	--	--	--	--	--
Zung	1978	--	11.8	--	--	59.6	--	--	18.0[f]	--	--	--	--	--	--	--

C= Control
D= DWI
A= Alcoholic
VA= Virginia
LA= Louisiana

[a] Includes Separated, Divorced and Widowed
[b] Alcohol Safety Action Project
[c] Short Term Rehabilitation
[d] 15.7% unknown
[e] 11.0% unknown
[f] 10.6% unknown

Table 2.

EMPLOYMENT (per cent)

AUTHOR	DATE	YES			NO		
		C	D	A	C	D	A
Argeriou & Paulino	1976	--	58.0	--	--	42.0	--
Ellingstad et al.	1978	--	81.6	--	--	18.4	--
Fine & Scoles	1976	--	82.0	--	--	18.0	--
Nichols et al.	1978	--	--	--	4.0	9.0[a] 18.0[b]	60.0
Steer & Fine	1978	--	70.0	--	--	--	--
Warheit et al.	1978	--	82.5	--	--	17.5	--
Yoder & Moore	1973	--	85.0	--	--	15.0	--
Zung	1978	--	87.0	--	--	13.0	--

C= Control
D= DWI
A= Alcoholic

[a]Alcohol Safety Action Project
[b]Short Term Rehabilitation

Table 3.
OCCUPATIONAL STATUS
(per cent)

AUTHORS	DATE	WHITE COLLAR			BLUE COLLAR		
		C	D	A	C	D	A
Argeriou & Paulino	1976	--	26.0	--	--	31.0[a]	--
Ellingstad et al.	1978	--	--	--	--	49.1	--
Nichols et al.	1978	--	--	--	60.0	58.0[b] 49.0[c]	48.0
Pollack	1969	58.0	20.0	--	42.0	79.0	--
Selzer	1971	54.0	29.2	29.3	46.0	70.8	70.7
Warheit et al.	1978	--	24.1	--	--	64.1[d]	--

C= Control
D= DWI
A= Alcoholic

[a] 42.0% unemployed
[b] Alcohol Safety Action Project
[c] Short Term Rehabilitation
[d] 10.9% unemployed

Table 4.
AVERAGE INCOME
(dollars)

AUTHOR	DATE	CONTROL	DWI	ALCOHOLIC
Argeriou & Paulino	1978	--	6000	--
Ellingstad et al	1978	--	10200	--
Foley et al.	1976	10700	9400	--
Nichols et al	1978	10000	7300[a] 10800[b]	5000
Selzer & Barton	1977	12500	10400	10500
Selzer et al.	1977	11100	12000	12600
Zung	1978	--	9171	--
Mean		11075	9409	9367
Number of studies		4	8	3

[a]Alcohol Safety Action Project
[b]Short Term Rehabilitation

Table 5a.

DISTRIBUTIONS OF BACs AT TIME OF ARREST
(per cent)

AUTHORS	DATE		<.14	.15-.19	≥.20
Filkins et al.	1974	VA	25.2	37.9	36.9
		LA	27.5	35.7	36.8
		TX	20.1	44.0	35.9
Fine & Scoles	1976	DWI	28.0	34.4	36.2
					≥.19
Foley et al.	1976	DWI			36.0
					≥.20
Hyman	1968	Calif.	5.1	19.0	74.4
		Ohio	2.2	8.7	89.1

VA= Virginia
LA= Louisiana
TX= Texas

Table 5b.

MEAN BAC AT TIME OF ARREST

AUTHOR	DATE	GROUP	MEAN
Argeriou & Paulino	1978	DWI	.20
Ellingstad et al.	1978	DWI	.19
Foley et al.	1976	DWI	.18
Fridlund et al.	1977	DWI	.19
Hyman	1968	CALIF	.23
		OHIO	.28
Nichols et al.	1978	ASAP [a]	.19
		STR [b]	.19
Steer & Fine	1978	DWI	.186
Yoder & Moore	1975	DWI	.18

[a]Alcohol Safety Action Project

[b]Short Term Rehabilitation

Table 6.

FREQUENCY OF CONSUMPTION

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Daily		38.3%	53.7%
		Weekends only		44.3	17.5
		Periodic binges		17.3	28.9
Perrine	1970	Beer			
		Never	26.0%	6.0%	
		Monthly	32.0	9.0	
		Weekly	13.0	27.0	
		Daily	29.0	58.0	
		Liquor			
		Never	26.0	33.0	
		Monthly	51.0	33.0	
		Weekly	13.0	24.0	
		Daily	10.0	12.0	
		Wine			
		Never	42.0	78.0	
		Monthly	48.0	12.0	
		Weekly	10.0	9.0	
		Daily	0.0	3.0	
Selzer & Barton	1977	"Never" to"Almost every day" (21 point scale) $\bar{x}$=	10.62	11.27	13.16
Pollack	1968	Drink no more	7.5%	1.0%	
		Daily	11.5	18.0	
		Several time/week	20.8	32.0	
		Once every 2 weeks	22.4	29.0	
		Once/month	10.7	8.0	
		Once every 2 months	10.1	5.0	
		6 times/year	5.5	2.0	
		Less than 6 times/year	9.5	4.0	
		No answer	1.9	0.0	
Yoder & Moore	1975	Daily		25.0%	
		Weekend		19.0	
		Parties		3.0	
		Special occasions		8.0	
		Sometimes		38.0	
		No answer		6.0	
Zelhart	1975	"Number or drinking days/week"			
		Less than 2	78.0%	64.0%	10.0%
		Three to four	13.0	22.0	14.0
		Five or more	9.0	13.0	76.0

Table 7.

QUANTITY OF CONSUMPTION

AUTHOR	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	1-2 drinks or 1-3 beers or 4 glasses of wine		42.4%	10.0%
		3-4 drinks or 4-6 beers or 5 glasses of wine		34.7	14.2
		5-6 drinks or 7-8 beers or 6 glasses of wine		11.9	15.8
		More		11.0	59.8
Perrine	1970	Beer			
		Light	78.0	12.0	
		Medium	13.0	36.0	
		Heavy	8.0	52.0	
		Liquor			
		Light	70.0	24.0	
		Medium	30.0	48.0	
		Heavy	0.0	28.0	
		Wine			
		Light	83.0	25.0	
		Medium	16.0	50.0	
		Heavy	0.0	25.0	
Pollack	1969	"Usual number of drinks per sitting for "two weeks or less" drinkers			
		One	22.5%	7.2%	
		Two	32.3	17.6	
		Three	14.1	13.6	
		Four	5.5	8.8	
		Five or more	5.7	35.2	
		No answer	19.9	17.6	
Zelhart	1975	Number of drinks/day			
		Less than 3	50.0%	16.0%	5.0%
		Four to six	34.0	43.0	13.0
		Seven to twelve	9.0	30.0	30.0
		Twelve or more	8.0	11.0	52.0

Table 8.

QUANTITY-FREQUENCY INDEX
(oz/day)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Fine & Scoles	1976	0.00-0.99		68.8%	
		1.00-1.99		16.1	
		2.00-2.99		6.1	
		3.00-3.99		3.6	
		4.00 or more		5.4	
Nichols et al.	1978	Mean		-- [a]	
				0.92[b]	
Perrine	1975	Light	37.0%	2.0%	
		Light-medium	33.0	9.0	
		Medium	17.0	28.0	
		Heavy	13.0	60.0	
Steer & Fine	1978	Mean		1.39	

[a]Alcohol Safety Action Project
[b]Short Treatment Rehabilitation

Table 9.

DRINK PREFERENCE

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Beer		64.4%	25.6%
		Wine		0.0	1.6
		Liquor		23.7	32.1
		Combinations		11.6	40.7
Pollack	1969	Beer	38.4%	61.9%	
		Wine	6.2	3.2	
		Liquor	5.6	8.7	
		Other	49.7	26.2	
Yoder & Moore	1973	Beer		46.0%	
		Wine		1.0	
		Liquor		2.0	
		Other		51.0	
Selzer & Barton	1977	Mean glasses per occasion			
		Beer	2.73	5.00	8.13
		Wine	2.16	3.43	4.80
		Liquor	2.53	4.55	8.83
Selzer, Vinokur & Wilson	1977	Mean glasses per occasion			
		Beer	2.67	4.85	7.02
		Wine	1.86	2.20	3.26
		Liquor	2.48	3.97	8.02
		Mean frequency			
		Beer	4.11	4.91	4.75
		Wine	3.19	2.47	2.78
		Liquor	3.44	3.54	4.73

Table 10.

REASONS FOR DRINKING

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Pollack	1969	Habit or routine	7.5%	29.9%	
		Can't seem to stop	1.0	16.4	
		To relax after a busy day	43.8	61.9	
		Relieve frightened feelings	5.9	12.3	
		To be sociable	60.1	60.7	
		To cope with personal problems	4.7	18.1	
		Wine as dinner beverage	25.2	11.9	
		Ease tension when worried or upset	11.0	37.8	
		Go along with group	8.3	33.1	
		Shyness with other people	2.3	15.1	
Selzer & Barton	1977	Tension relief-mean score=	0.36[a]	1.09	2.33
		Social relaxation-mean score=	0.84[b]	1.21	1.49
Selzer, Vinokur & Wilson	1977	Tension relief-mean score=	1.85[c]	3.48	6.20
		Social relaxation-mean score=	3.67[c]	4.57	5.65

[a] range= 0-3

[b] range= 0-2

[c] range= 0-9

Table 11.

PHYSICAL HELATH
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Hospitalized for drinking		3.4	49.8
		Physician warned drinking was injuring health			
		Past year		8.5	34.6
		1-4 years ago		3.4	13.4
		Illness brought on by drinking			
		Past year		1.7	20.6
		1-4 years ago		0.8	5.9
		Accident, injury due to drinking			
		Past year		12.7	14.6
		1-4 years ago		2.5	10.9
		Hospitalization for disorder relating to drinking		3.4	31.2
		Major illness			
		Past year		9.3	14.8
		1-4 years ago		4.2	15.6
Pollack	1969	Discription of general health			
		Very good	64.7	38.0	
		Good	31.4	42.0	
		Fair	3.7	15.0	
		Poor	0.2	5.0	
Warheit et al.	1978	Has doctor told you that drinking is injuring your health?			
		Never		90.4	
		In past year		5.0	
		More than 1 year ago		4.6	
		Had a major physical illness			
		Never		68.6	
		Within past year		8.8	
		More than one year ago		22.6	
		Have you ever entered a hospital for alcohol problems?			
		Yes		9.3	
		No		90.7	

Table 12.

FAMILY AND MARITAL PROBLEMS DUE TO DRINKING

(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Spouse threatened to leave due to drinking			
		Past year		4.1	26.4
		1-4 years ago		5.1	11.9
		Longer		0.0	17.9
		Most frequent events in past year			
		Marital separation		7.9	16.6
		Increased arguments with family		0.0	18.7
		Increased arguments with spouse		5.2	25.4
Pollack	1969	Spouse objects to drinking			
		Often	0.6	19.0	
		Sometimes	2.4	30.0	
		Seldom	4.9	15.0	
		Never	88.1	34.0	
		No answer	4.0	1.0	
		Main reason to cut down			
		Family problems	2.5	16.0	
Warheit et al	1978	My spouse things I am a drunk			
		Yes		15.7	
		No		78.8	
		Don't know		5.5	
Zelhart	1975	Family objections to drinking	2.2	30.0	92.0

Table 13.

FINANCIAL PROBLEMS DUE TO DRINKING
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Complaints about money spent on alcohol			
		Past year		17.1	45.0
		1-4 years ago		5.7	8.3
		Longer		4.8	14.0
		Most frequent events in past year			
		Major financial difficulties		13.9	19.4
		Bills not paid, money spent on liquor			
		Past year		6.8	31.8
		1-4 years ago		1.7	6.6
Pollack	1969	Amount alcohol cuts into budget			
		Very much	0.5	12.4	
		Some	3.5	21.9	
		Not very	16.1	27.4	
		Not at all	78.3	37.8	
		No answer	1.6	0.5	
		Is income sufficient for basic needs?			
		Yes	80.3	64.2	
		No	15.7	30.9	
		No answer	4.0	4.9	

Table 14.

JOB PROBLEMS
(per cent)

AUTHORS	DATE	CATEGORIES	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Job threatened if keep drinking			
		Past year		1.7	14.0
		1-4 years ago		0.8	9.1
		Quit or changed jobs because of drinking			
		Past year		0.8	15.2
		1-4 years ago		0.8	7.4
		Fired from job		3.4	13.5
Pollack	1969	Total number of "yes" to job problems*			
		None	78.4	79.0	
		One	5.0	10.0	
		Two	0.0	6.0	
		Three	0.7	1.0	
		No answer	15.9	4.0	
Zelhart	1975	Lost job?	0.0	7.0	7.0

*areas covered by question were:decrease of job efficiency due to drinking;problems with employees because of irratibility;employer discussed drinking;respondent quite before he could be fired because of drinking;respondent was fired because of drinking.

Table 15.

PRIOR TREATMENT ENTRY FOR ALCOHOL-RELATED PROBLEMS
(per cent with at least one treatment entry)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Hospitalized		3.4	49.8
		Sought professional help		5.9	49.6
		Attended A.A.		5.1	56.3
Ellingstad	1978			16.0	
Fine & Scoles	1976			3.9	
Fine et al.	1975b			12.0	
Nichols et al.	1978	ASAP Programs			
		Denver		7.9	
		Fairfax		6.3	
		Kansas City		42.3	
		Minneapolis		9.4	
		New Orleans		4.4	
		Phoenix		42.5	
		San Antonio		1.0	
		South Dakota		3.0	
		New Hampshire		20.3	
		Oklahoma City		7.4	
		Tampa		14.4	
Waller	1967	Hospitalized	0.0	2.7	
		Been to alcoholism clinics	0.0	6.0	
		Known to family service agencies	2.7	0.7	
Zelhart	1975	Every shought help for drinking problem?	0.0	11.0	71.0

Table 16a.

DIAGNOSIS OF PROBLEM DRINKING USING THE MAST[a]

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Selzer	1971	MAST			
		score 5+		55.0%	
Selzer & Barton	1977	SMAST[b]			
		"alcoholic"		68.0%	
		"borderline"		15.0	
		"non-alcoholic"		17.0	
		SMAST mean score	2.46	4.77	6.54
Selzer & Vinokur	1976	SMAST			
		"alcoholic"		39.0%	
		"borderline"		19.0	
		"non-alcoholic"		43.0	
		SMAST mean score[a]	2.61	4.22	6.73
Selzer,Vinokur & Wilson	1977	SMAST			
		score=≥6		39.0%	99.0%
		score= 5		19.0	1.0
		score=<5		42.0	0.0
Yoder & Moore	1973	MAST			
		score=≥5		74.0%	
		score= 4		6.0	
		score=<4		20.0	
		MAST mean score[b]		10.0	
Zung	1978	MAST			
		score=≥5		54.0%	
		score=≤4		46.0	

[a]MAST= Michigan Alcoholism Screening Test; range= 0-25; scores 5=problem drinking

[b]SMAST= Short Michigan Alcoholism Screening Test

Table 16b.

DIAGNOSIS OF PROBLEM DRINKING USING THE MORTIMER-FILKINS TEST[a]
(mean test scores)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Ellingstad	1978			16.7	
Nichols	1978	ASAP[b] Programs			
		Denver		14.6	
		Fairfax		13.3	
		Kansas City		16.6	
		Minneapolis		13.4	
		New Orleans		15.4	
		Phoenix		19.4	
		San Antonio		18.4	
		South Dakota		12.7	
		New Hampshire		19.4	
		Oklahoma City		14.2	
		Tampa		15.4	

[a] score$\leq$15, absence of problem drinking
score=16 to 23, presumptive evidence of problem drinking
score$\geq$24, problem drinking

[b] Alcohol Safety Action Project

Table 16c.

DIAGNOSIS OF PROBLEM DRINKING
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Argeriou & Paulino	1976	"Problem drinker"		41.0	
		"Emerging problem drinker"		28.0	
		"Social drinker"		30.0	
Kelleher	1971	Diagnosed "alcoholic"		20.0	
		by staff		12.0	
		by self-admission		8.0	
Waller	1967	Known to welfare department	4.7	10.7	
		Felt by welfare department to have a problem with alcohol	0.0	2.7	
		Known to welfare department of nonsupport of family	1.3	4.7	
		Known to probation department	4.0	34.0	
		Felt by probation department to have a problem with alcohol	0.7	20.7	
		Known to probation department for nonsupport of family	0.0	8.0	
		Treated in state mental hospital	0.0	2.7	
		Seen at alcoholism clinic	0.0	6.0	
		Known to family service agencies	2.7	0.7	

Table 16d.

SELF-DEFINED DRINKING PROBLEM
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Think something is wrong with the way they drink		26.5	79.2
		Think they drink too much		38.8	86.5
		Worried about the results of drinking			
		No concern		47.4	9.1
		Some concern		32.5	37.0
		Very worried		20.2	53.9
		Self-defined problem drinker		21.6	81.9
		Done about drinking			
		Quit		39.7	69.8
		Attended A.A.		5.1	56.3
Warheit	1978	Do you think you drink too much?			
		Yes		30.5	
		No		49.1	
		Don't know		20.4	
		Do you have a drinking problem?			
		Yes		37.0	
		No		63.0	
		Don't know		0.0	
		Do other people think your drinking is out of line?			
		Yes		28.5	
		No		71.5	
		Don't know		0.0	
		Is there anything wrong with the way you drink?			
		Yes		41.3	
		No		58.4	
		Don't know		0.3	
		Are you an alcoholic?			
		Yes		8.0	
		No		70.7	
		Don't know		21.3	
Yoder & Moore	1973	Have you ever thought you might have a drinking problem?			
		Yes		33.5	
Zelhart	1975	Suspect they might have a drinking problem	3.0	20.0	88.0

Table 17a.

DRINKING AND DRIVING BEHAVIOR
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Pollack	1969	"Times driven after drinking more than can handle and drive safely"			
		Daily	0.2	1.0	
		Several times/week	0.6	5.0	
		Once/week	1.0	12.0	
		Once/2 weeks	0.6	7.0	
		Once/month	3.4	9.0	
		5-6 times/year	5.6	14.0	
		1-2 times/year	25.0	32.0	
		Never	63.5	20.0	
		"Frequency of driving after drinking with 2 or more drinks"			
		Daily	1.3	7.0	
		Several times/week	4.0	15.0	
		Once/week	7.0	27.0	
		Once/2 weeks	4.6	9.0	
		Once/month	9.6	9.0	
		5-6 times/year	9.4	9.0	
		1-2 times/year	22.9	17.0	
		Never	41.2	7.0	
		"Number of drinks possible while still maintaining good driving ability"			
		None	4.0	1.0	
		One	5.1	8.0	
		Two	18.2	8.0	
		Three	21.1	16.0	
		Four	15.0	14.0	
		Five	9.2	9.0	
		Six	10.5	17.0	
		Seven	0.8	3.0	
		Eight or more	7.2	25.0	
		No answer	8.5	4.0	
Selzer & Barton	1977	"Driven at least once after 4+ drinks	61.5	97.4	92.3

Table 17b.

DRINKING AND DRIVING BEHAVIOR
(mean number of times)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Selzer & Barton	1977	"Number of times driven after drinking 4+ drinks in past 12 months"	3.89	6.03	6.29
Selzer,Vinokur & Wilson	1977	"Number of times driven after drinking 4+ drinks in past 12 months"	1.89	4.89	4.47
		"Number of drinks you can have and still drive"	2.96	3.39	4.00

Table 17c.

CIRCUMSTANCES OF DRINKING
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Pollack	1969	"Respondent drinks 3+ drinks of liquor, ½ bottle of wine or 6 pack of beer:"			
		With friends at their home	22.9	43.6	
		In a bar	15.3	33.2	
		At parties away from home	15.3	33.2	
Yoder & Moore	1973	"Where do you drink?"			
		Friends house		15.0	
		Home		4.0	
		Bar, pool hall		52.0	
		Restaurant		5.0	
		Party, picnic		7.0	
		Business, fund-raising		3.0	
		Work		1.0	
		Resort, movie,entertainment		3.0	
		Car		5.0	
		No response		5.0	
		"With whom do you drink?"			
		Friends or family		59.0	
		Alone		21.0	
		Single female or male companion		10.0	
		Co-workers		6.0	
		Buisness customers		1.0	
		No answer		3.0	

Table 18.

ARRESTS BOTH NON-ALCOHOL AND ALCOHOL RELATED
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Pollack	1969	Total arrests-criminal offenses (not DWI)			
		None	89.0	28.0	
		One	6.0	14.0	
		Two-three	2.0	15.0	
		Four or more	2.0	43.0	
Waller	1967	Persons with arrests	15.3	84.0	
Yoder & Moore	1973	Some kind of previous arrest		60.0	
Zelhart	1975	None	98.5	0.0	0.0
		One		43.3	54.6
		One or more	1.5		
		Two		26.9	
		Three or more		29.8	

Table 19a.

TRAFFIC VIOLATIONS
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Argeriou & Paulino	1976	One or more		25.0	
Ellingstad et al.	1978	Major-one or more		12.6	
Filkins et al.	1970	None	47.0	8.0	34.0
		Four or more	12.0	58.0	16.0
		Mean	1.35	5.47	1.78
Nichols et al.	1978	ASAP[a] Programs			
		Denver		81.3	
		Fairfax		43.1	
		Kansas		78.3	
		Minneapolis		29.6	
		New Orleans		64.6	
		Phoenix		97.6	
		San Antonio		47.5	
		South Dakota		48.0	
		New Hampshire		41.1	
		Oklahoma City		98.8	
		Tampa		66.1	
Pollack	1969	Minor			
		None	49.0	23.0	
		One	23.0	17.0	
		Two to three	18.0	24.0	
		Four or more	10.0	36.0	
		Major			
		None	99.2	67.0	
		One	0.7	17.0	
		Two to three	0.0	10.0	
		Four or more	0.1	5.0	

[a] Alcohol Safety Action Project

Table 19b.

DWI ARRESTS

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Argeriou and Paulino	1976	One or more offenses		7.0%	
Ellingstad et al	1978	One or more convictions		46.1	
Filkins et al.	1970	None	99.0	88.0	83.0
		One	1.0	9.0	13.0
		Two	0.0	2.0	3.0
		Three	0.0	1.0	1.0
		Mean	0.01	0.15	0.22
Filkins et al.	1974	Virginia			
		None		86.1%	
		One		11.2	
		Two or more		2.7	
		Louisiana			
		None		70.2	
		One		22.2	
		Two or more		7.6	
Fridlund & Hagen	1977	None		47.0	
		One		44.0	
		Two or more		9.0	
Kelleher	1971	Convicted of DWI		3.0	
		Arrested but not convicted		15.0	
		At least on arrest		18.0	
Maisto	1979	None	98.0	--	
		One	1.7	77.4	
		Two	0.3	17.0	
		Three	0.0	3.9	
		Four or more	0.0	1.7	
Nichols et al.	1978	ASAP[a] Programs- on or more			
		Denver		5.8	
		Fairfax		4.9	
		Kansas City		60.6	
		Minneapolis		9.4	
		New Orleans		28.3	
		Phoenix		53.3	
		San Antonio		35.9	
		South Dakota		15.5	
		New Hampshire		16.3	
		Oklahoma City		8.2	
		Tampa		22.9	

Table 19b.
DWI ARRESTS (CON'T)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Pollack	1969	(includes reduced to reckless)			
		None		17.0%	
		One		45.0	
		Two		23.0	
		Three or more		14.0	
Selzer & Barton	1977	Mean number of arrests for drunken driving	0.07	1.38	1.12
Selzer,Vinokur & Wilson	1977	One or more	2.0%	96.0%	56.0%
		Mean number of arrests for drunken driving	0.03	1.54	1.07
Waller	1967	One or more	2.0%	46.0%	

[a]Alcohol Safety Action Project

Table 19c.

ALCOHOL-RELATED OFFENSES
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Picked or arrested			
		Once		72.6	55.0
		Twice		12.4	17.1
		Three or more times		15.0	27.9
Denberg and Smart	1975	Within past two years			
		One		14.2	
		Two or more		2.6	
Ellingstad et al.	1978	One or more		30.7	
Filkins et al.	1974	Virginia			
		None		77.3	
		One to two		19.4	
		Three or more		54.1	
		Louisiana			
		None		82.1	
		One to two		12.8	
		Three or more		5.1	
		Texas(includes prior DWIs)			
		None		54.1	
		One to two		24.4	
		Three or more		21.5	
Nichols et al.	1978	One or more			
		Denver		29.2	
		Fairfax		4.9	
		Kansas City		61.3	
		Minneapolis		13.8	
		New Orleans		29.5	
		Phoenix		53.3	
		San Antonio		46.1	
		South Dakota		16.5	
		New Hampshire		16.3	
		Oklahoma City		25.1	
		Tampa		24.0	
Pollack	1969	None	99.6	0.4	
		One	0.4	38.0	
		Two	0.0	19.0	
		Three or more	0.0	32.0	
Waller	1967	Two or more	2.7	62.6	62.6
		Five or more	0.7	34.5	

Table 19c.

ALCOHOL-RELATED OFFENSES (CON'T.)
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Warheit et al.	1978	Picked up by police			
		Once		60.6%	
		Twice		10.5	
		Three or more times		28.9	
Zelhart et al.	1975	None			
		One			40.0
		Less than two		76.6	
		Three or more		23.4	.7.0

Table 19d.

ACCIDENTS

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Argeriou & Paulino	1978	One or more		53.0%	
Ellingstad et al.	1978	One or more		20.1	
Filkins et al.	1970	None	71.0	34.0	60.0
		One	21.0	35.0	26.0
		Two or more	8.0	31.0	14.0
		Mean	0.42	1.12	0.62
Fridlund & Hagen	1977	None		70.0%	
		One or more		30.0	
Nichols et al.	1978	ASAP[a] Programs-one or more			
		Denver		5.3	
		Fairfax		3.1	
		Kansas City		33.6	
		Minneapolis		0.0	
		New Orleans		2.1	
		Phoenix		25.6	
		San Antonio		0.7	
		South Dakota		16.5	
		New Hampshire		28.2	
		Oklahoma City		31.0	
		Tampa		41.8	
Perrine	1970	Crashes in previous five years			
		None	100.0	48.0	
		One	0.0	24.0	
		Two or more	0.0	28.0	
Perrine	1975	Number of crashes in last three years			
		None	72.0	42.0	
		One	22.0	39.0	
		Two or more	7.0	19.0	
Pollack	1969	None	80.0	69.0	
		One	17.0	25.0	
		Two	2.0	7.0	
		Three or more	1.0	1.0	

[a]Alcohol Safety Action Project

Table 19e.

SUSPENSIONS AND RECKLESS OFFENSES

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Filkins et al.	1970	Reckless			
		None	97.0%	86.0%	90.0%
		One or more	3.0	14.0	10.0
Fridlund & Hagen	1977	Suspension			
		None		88.0	
		One or more		12.0	
		Reckless			
		None		85.0	
		One or more		15.0	
Maisto et al.	1979	Mean number of reckless	0.04	0.19	
Perrine	1970	Suspension			
		None	94.0	42.0	
		One	6.0	13.0	
		Two or more	0.0	45.0	

Table 20a.

PERSONALITY
(per cent)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Self-perceptions (% yes)			
		Get along well with others		99.2	95.9
		Kind of person he/she likes to be		99.2	88.4
		Self-confident		96.6	86.7
		At ease with others		94.9	79.9
		Satisfied with self		93.2	72.2
		Shy around others		12.8	35.0
		Best solution is to be dead		6.8	30.9
Fine & Scoles	1976	Eysenck Personality Inventory-Neuroticism scores[b]			
		0- 4		10.6	
		5- 9		9.2[a]	
		10-14		78.6[a]	
		15-19		1.3[a]	
		20-24		0.3[a]	
Warheit et al.	1978	Self Concept (% yes)			
		Kind of person he/she likes to be		75.2	
		Gets along well with others		78.7	
		Self-confident		75.6	
		Shy around others		15.9	
		Satisfied with self		72.3	

[a] 80% above the norm for the general population

[b] Patients hospitalized for alcoholism have scored above 14.

Table 20b.

PERSONALITY TESTS
(mean scores)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Perrine	1970	Eysenck Personality Inventory			
		Extroversion-Introversion	14.79	13.76	
		Neuroticism	8.59	9.59	
		Lie	1.50	2.59	
		Driver Attitude Survey			
		Deviance	1.25	3.35	
		Faking attitude	11.97	10.42	
		Misses (false negatives)	4.76	5.87	
		Violation attitude	7.83	8.69	
		Accident	8.96	11.13	
		Alcohol attitude	3.70	5.11	
		Personal relationships	4.83	7.07	
Selzer & Barton	1977	Psychological Variables[a]			
		Neuroticism[1]	1.40	1.87	3.42
		Self esteem[2]	6.43	6.07	5.16
		Self-control[2]	7.02	6.23	4.90
		Responsibility[2]	6.79	5.84	6.19
		Paranoid thinking[3]	1.83	2.12	2.81
		Depression[4]	10.43	12.33	16.69
		Aggression[3]	1.83	2.44	2.64
		Aggression:fighting/throwing[3]	0.48	1.11	1.33
Selzer,Vinokur & Wilson	1977	Psychological Variables[a]			
		Self-esteem[2]	17.41	16.62	14.89
		Self-control[2]	13.71	13.15	9.99
		Responsibility[2]	13.71	12.49	12.63
		Paranoid thinking[3]	12.31	14.23	16.79
		Depression[5]	6.18	8.04	11.68
		Depression[4]	11.00	12.64	17.76
		Aggression[3]	13.54	15.23	16.31
		Suicide proclivity	0.60	0.53	1.28
		Internality[6]	12.53	12.67	13.27
		Externality[6]	7.17	7.32	9.37

Table 20b.

PERSONALITY TESTS (CON'T)
(mean scores)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Steer & Fine	1978	Profile of Mood State			
		Tension-anxiety		8.55[b]	
		Depression-dejection		8.08[b]	
		Anger-hostility		6.42[b]	
		Vigor-activity		19.41[b]	
		Fatique-inertia		5.24[b]	
		Confusion-bewilderment		5.15	

[a]higher scores = more extreme

[b]within low end ranges established for male outpatient psychoneurotics

[1]Eysenck Personality Inventory

[2]California Personality Inventory

[3]Buss-Durkee

[4]Short Zung Self-Rating Scale

[5]Depression Adjective Check List

[6]Rotter's Internal-External Control Scale

Table 21.
STRESS

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Bell et al.	1978	Most frequent event in past year			
		Unemployed for one month		26.8	41.2
		Jail sentence		2.5	22.0
		Increased arguements with spouse		5.2	25.4
		Major financial difficulties		13.9	19.4
		Increased arguments with family		0.0	18.7
		Marital separation		7.9	16.6
		Major Illness		9.3	14.8
		Fired from a job		3.4	13.5
		Death of a close friend		12.9	13.3
		Hospitalization of a family member		8.5	13.2
		Number of stressful life events in the past year			
		None		24.6	15.0
		One		37.3	20.6
		Two		17.8	17.4
		Three		10.2	16.2
		Four		5.9	11.3
		Five to eleven		5.2	19.4
		Number of stressful events in life			
		None		1.7	0.4
		One to three		24.6	10.9
		Four to six		39.8	25.5
		Seven to nine		19.5	28.3
		Ten to twelve		12.7	23.5
		Thirteen to seventeen		1.7	11.3
Pollack	1969	Amount of job stress (% yes)			
		Some or alot	75.0	59.0	
		Very little	17.0	19.0	
		None	5.0	20.0	
		No answer	3.0	2.0	
		Number of job problems (%yes)			
		None	78.4	79.0	
		One	5.0	10.0	
		Two	0.0	6.0	
		Three	0.7	1.0	
		No answer	16.0	4.0	
		Stress symptoms (% yes)			
		Perspiration at night	15.0	40.0	
		Getting angry	52.0	50.0	
		Getting upset	43.0	50.0	
		Getting nervous	37.0	61.0	

Table 21.

STRESS (CON'T)

AUTHORS	DATE	CATEGORY	CONTROL	DWI	ALCOHOLIC
Yoder	1975	Acute stress (% yes)			
		Personal conflict		17.0%	
		Personal tragedy		4.0	
		Threat to job security		3.0	
		On-the-job conflict		2.0	
		Financial problems		5.0	
		Other		4.0	
		None		65.0	
		Chronic stress (% yes)			
		Personal conflict		13.0	
		Personal tragedy		4.0	
		Threat to job security		3.0	
		On-the-job conflict		4.0	
		Financial problems		5.0	
		Other		2.0	
		None		69.0	
Selzer & Barton	1977	Stress measures ($\bar{x}$ score)			
		Frequency of family problems	7.65	8.43	9.11
		Family problem distress	6.52	8.13	7.99
		Frequency of job problems	6.23	6.08	7.04
		Job problem distress	4.87	5.29	5.11
Selzer,Vinokur & Wilson	1977	Stress measures ($\bar{x}$ score)			
		Family relations	14.36	14.29	13.01
		Frequency of family problems	4.53	4.65	5.40
		Family problem distress	3.01	3.16	4.58
		Frequency of job problems	4.08	3.95	4.84
		Job prblem distress	2.34	2.41	3.26
		Total problems	10.38	10.37	12.10
		Total distress	5.35	5.78	7.87
		Stress symptoms	7.97	8.44	10.87

Table 22a.

EDUCATION
(Mean number of years)

AUTHORS	DATE	CONTROL	DWI	ALCOHOLIC
Argeriou and Paulino	1976		12	
Ellingstad et al.	1978		11.6	
Nichols	1978	11.5	11.1[a] 11.6[b]	10.6
Selzer and Barton	1977	13.6	11.4	11.5
Zung	1978		10.7	

[a]Alcohol Safety Action Project

[b]Short Term Rehabilitation

Table 22b.

EDUCATION (per cent)

AUTHOR	DATE	8-11 YEARS			12+ YEARS		
		CONTROL	DWI	ALCOHOLIC	CONTROL	DWI	ALCOHOLIC
Argeriou and Paulino	1976	--	42.0%	--	--	58.0%	--
Bell et al.	1978	--	46.1	54.1	--	53.9	45.9
Filkins et al.	1974	--	58.5[a]	--	--	41.5[a]	--
		--	90.3[b]	--	--	9.8[b]	--
Pollack	1969	22.0	58.0	--	76.0	41.0 ?	--
Warheit et al.	1978	--	65.3	--	--	34.7	--
Zagorski	1976	19.0	29.0	--	80.0	71.0	--
Zung	1978	--	81.7	--	--	14.6	--

[a]Virginia
[b]Texas

Table 23a.

MEAN AGE

AUTHOR	DATE	CONTROL	DWI	ALCOHOLIC
Argeriou and Paulino	1976		34.0	
Ellingstad et al.	1978		34.2	
Filkins et al.	1970	42.0	44.0	49.0
Fridlund et al.	1977		36.8	
Hyman	1968		37.6[a] 34.6[b]	
Nichols et al.	1978	43.0	37.0[ce] 34.6[de]	
Selzer and Barton	1971		35.0	
Selzer and Barton	1977	35.1	37.3	33.2
Selzer, Vinokur and Wilson	1977	34.7	39.5	43.5
Steer and Fine	1978		40.5	
Yoder and Moore	1973		38.0	
Zung	1978		32.1	

[a]California

[b]Ohio

[c]Alcohol Safety Action Porject

[d]Short Term Rehabilitation

[e]median

Table 23b.
DISTRIBUTIONS OF AGES
(per cent)

AUTHOR	DATE	<20		20-29		30-39		40-49		50-59		60+	
		Control	DWI	Control	DWI	Control	DWI	Control	DWI	Control	DWI	Control	DWI
Filkins et al.	1974			≤29		29-40		40+					
		--	--	--	34.3[a]	--	28.3	--	37.4	--	--	--	--
		--	--	--	20.2[b]	--	34.3	--	45.6	--	--	--	--
		--	--	--	29.7[c]	--	45.6	--	35.5	--	--	--	--
Fine et al.	1975b					<40		40+					
		--	--	--	--	--	55.2	--	44.8	--	--	--	--
Pollack	1969	6.0	2.1	29.3	20.7	18.5	32.9	22.7	26.6	14.8	11.4	8.1	5.6
Waller	1967	6.7	2.9	14.0	26.7	19.3	16.0	13.3	28.7	19.3	22.7	24.0	6.7
Warheit et al.	1978	<18		19-29									
		--	4.0	--	38.2	--	18.1	--	17.3	--	14.7	--	7.8
Yoder and Moore	1975	--	2.0	--	19.0	--	29.0	--	25.0	--	20.0	--	5.0
Zung	1978	--	1.0	--	17.2	--	24.9	--	33.2	--	17.8	--	5.9

[a]Virginia
[b]Louisiana
[c]Texas

Table 23c.

DISTRIBUTIONS OF AGES
(per cent)

AUTHOR	DATE	≤25			25-34			35-44			45-54			55+		
		C	D	A	C	D	A	C	D	A	C	D	A	C	D	A
Bell et al.	1978					≤35			36-45			46-54				
		--	--	--	--	42	26	--	23	24	--	20	30	--	16	20
Denberg & Smart	1974	--	25	--	--	--	--	--	--	--	--	--	--	--	--	--
Filkins et al.	1970	22	6	1	10	14	10	20	32	29	17	31	34	22	17	26
Fine & Scoles	1976					≤34										
		--	--	--	--	38.7	--	--	25	--	--	24.4	--	--	12.5	--
Fine et al.	1975a	--	14	--	--	24	--	--	26	--	--	23	--	--	13	--
Foley et al.	1976	20	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Zagorski	1976	10	4	--	12	17	--	22	21	--	18	17	--	20	6	--

C=Control
D=DWI
A=Alcoholic

Table 24.

RACE
(per cent)

AUTHORS	DATE	WHITE			BLACK			MEXICAN-AMERICAN			OTHER		
		C	D	A	C	D	A	C	D	A	C	D	A
Argeriou & Paulino		--	65.0	--	--.	35.0	--	--	--	--	--	--	--
Bell et al.	1978	--	84.7	87.4	--	15.3	12.6	--	--	--	--	--	--
Ellingstad et al.	1978	--	72.5	--	--	12.1	--	--	12.0	--	--	--	--
Filkins et al.	1974	--	92.8[a]	--	--	5.9	--	--	1.3	--	--	--	--
		--	34.3[b]	--	--	65.7	--	--	--	--	--	--	--
Fine & Scoles	1976	--	38.0	--	--	58.3	--	--	3.7	--	--	--	--
Fine et al.	1975a	--	47.8	--	--	49.0	--	--	--	--	--	3.2	--
Fine et al.	1975b	--	47.4	--	--	49.5	--	--	--	--	--	3.1	--
Hyman	1968	--	79.0[c]	--	--	--	--	--	--	--	--	21.0	--
		--	76.2[d]	--	--	23.8	--	--	--	--	--	--	--
Nichols et al.	1978	88.0	75.0	75.0	--	--	--	--	--	--	12.0[g]	25.0[eg] 19.0[fg]	25.0[g]
Pollack	1969	85.0	35.0	--	4.0	40.0	--	7.2	21.0	--	3.8	4.0	--
Selzer	1971	--	86.0	--	--	14.0	--	--	--	--	--	--	--
Selzer & Barton	1977	83.0	86.0	81.0	14.0	9.0	13.0	--	--	--	3.0	5.0	6.0
Selzer, Vinolur & Wilson	1977	91.2	86.8	83.0	6.0	10.1	13.2	--	--	--	2.8	3.1	3.8

Table 24.

RACE (CON'T)
(per cent)

AUTHORS	DATE	WHITE			BLACK			MEXICAN-AMERICAN			OTHER		
		C	D	A	C	D	A	C	D	A	C	D	A
Warheit et al.	1978	--	84.3	--	--	15.7	--	--	--	--	--	--	--
Yoder & Moore	1973	--	86.0	--	--	--	--	--	10.0	--	--	3.0	--
Zagorski	1976	69.6	61.4	--	11.3	14.9	--	19.1	23.7	--	--	--	--
Zung	1978	--	68.9	--	--	20.0	--	--	10.7	--	--	4.0	--

C= Control
D= DWI
A= Alcoholic

[a]Virginia
[b]Louisiana
[c]California
[d]Ohio
[e]Alcohol Safety Action Project
[f]Short Term Rehabilitation
[g]All non-whites

Table 25.

SEX
(per cent male)

AUTHORS	DATE		CONTROL	DWI	ALCOHOLIC
Bell et al.	1978		--	91.5	86.2
Denberg & Smart	1974		--	96.0	--
Filkins et al.	1970		67.0	98.0	89.0
Filkins et al.	1974	Virginia	--	93.4	--
		Louisiana	--	97.0	--
		Texas	--	94.1	--
Fine & Scoles	1976		--	95.6	--
Fine et al.	1975a		--	93.5	--
Foley et al.	1976		94.0	96.0	--
Fridlund et al.	1977		--	90.0	--
Hyman	1968	California	--	88.5	--
		Ohio	--	94.8	--
Perrine	1970		--	97.0	--
Pollack	1969		81.5	96.7	--
Selzer	1971		--	96.5	--
Warheit et al.	1978		--	73.7	--
Yoder	1975		--	82.5	--
Yoder & Moore	1975		--	82.0	--
Zung	1978		--	93.0	--

DRINKING-DRIVER PROBATION SHOULD BE EVALUATED FROM A PROBATION PERSPECTIVE

By

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Presented at the Alcohol and Traffic Safety Session of the 1979 National Council on Alcoholism. Washington, D.C., April 30, 1979.

The American Probation and Parole Association (APPA) is a professional association made up of probation and parole personnel from across the United States and Canada and is the only national association in this country specifically devoted to promoting progressive probation and parole practices. Its membership includes probation and parole staff at all levels, both line officers and administrators, from federal, state, and local probation and parole agencies.

APPA applauds the efforts put forth thus far by the National Highway Traffic Safety Administration (NHTSA) of the United States Department of Transportation in attempting to reduce the number of drinking-driving-related traffic fatalities in this country. It has been reported that a range of from 40 to 55 per cent of all fatally injured drivers involved in single- and multiple-vehicle crashes have a blood alcohol content (BAC) of .10 per cent or more; when statistics related to only single-vehicle fatal crashes were analyzed, it was found that between 55 and 63 per cent of drivers had BAC's of .10 per cent or higher.[1] Economic cost of drinking-driving accidents is estimated to be in the billions of dollars yearly,[2] and millions of dollars have been and continue to be expended by NHTSA for the nationwide funding of various types of measures aimed at reducing the number of human lives senselessly wasted on our highways.

One of the most innovative, far-reaching, and all-encompassing programs that has emerged from these efforts has been the National Alcohol Safety Action Projects (ASAP's), which were begun in 1970.

> The 35 ASAP's, a number of ASAP progeny, and systems evolving independently of the ASAP concept developed adjudicative disposition systems which applied a "health-legal" approach to drinking-driver control.[3]

Whatever the terminology that has been used, a common element extant in all such programs is the existence of a staff assigned to the court, whose job it is to provide judges and prosecutors with relevant information regarding the drinking driver so that each offender is adjudicated on an individual basis in order to assure that the disposition reached is one which is both in the best interest of the convicted and compatible with the need for the protection of the community. Functions performed by such staff have included the screening and classification of offenders into various categories of drinking types; the writing and submission of reports to the courts (oftentimes including recommendations regarding disposition of the case); and, if the offender is placed into some type of rehabilitative program such as education or treatment, the program personnel usually perform the referral procedure, follow-up, and eventual reporting back to the court. These various functions may occur prior to trial, as a diversionary procedure after a finding of guilt but before sentencing, after sentencing by the court, or in accordance with some combination of all three. In programs such as these, the intent is to respond to the cause of the illegal behavior of the drinking driver, rather than to merely deal with the behavior itself. This is a concept which is wholeheartedly endorsed by the American Probation and Parole Association.

It should be obvious that the personnel who make up the court unit just described bear a strong resemblance to traditional pro-

bation officers, who have been performing tasks such as those alluded to since John Augustus became the first true probation officer in the United States in 1841. Coincidentally, Augustus' caseload for the first year he worked with the municipal courts of Boston, Massachusetts, was comprised totally of offenders with alcohol-related problems. He and the other members of the Washington Total Abstinence Society had as their purpose "to reclaim drunkards and promote temperance.[4]

Most, if not all, of the ASAP-type programs have entered many of the functional areas that had historically been the exclusive domain of the field of probation. When these programs have been created, their staff has been given various titles, such as DWI Probation Counselors, ASAP Probation Officers, and DWI Casework Managers, to name just a few. Call them what you will; for all practical purposes, they are still probation officers from a functional perspective.

The value of probation in DWI-related cases cannot be overstated. It is of the utmost importance that any program aimed at the community-based rehabilitation of offenders who are in any way adjudicated through the judicial system, either through the use of traditional sanctions or vis-a-vis some type of diversionary program, include a unit to perform the necessary screening, reporting, classification, referral, and coordinative functions for the court. Rather than fragmenting the criminal justice system any more than it already is, all such DWI probation functions should be the sole responsibility of the existing probation office responsible for that particular jurisdiction. The importance of the function of probation in drinking-driver adjudication pro-

grams has been recognized elsewhere in ASAP literature:

> The entire ASAP process depends on the strength and nature of the pre-sentence/probation process. This is the control mechanism that determines what will happen to a large proportion of the arrested population and upon whose effectiveness the adjudication process comes to rely.[5]

> An important sentencing alternative upon conviction for drinking-driving is the granting (or imposition of) probation...and probation is one of the primary processes by which problem drinkers can be routed to some form of therapeutic program. The traditional use of formal probation (following conviction) is increasingly supplemented by informal probation (prior to conviction or judgment), using staff attached either to a regular probation operation or in some cases even to a prosecutor's office.[6]

The increased use of probation for drinking-driver offenders has been viewed by APPA with mixed feelings. The benefits of this increased awareness and utilization of probation techniques have been many, and the efforts of NHTSA have greatly added to the state of the art in the field of probation. Some of the more positive aspects of NHTSA's efforts with respect to the field of probation have been:

1. Through a contract with Applied Science Associates, a comprehensive nationally applicable training package for Presentence Investigation personnel has been developed "to assure fair, accurate and comprehensive diagnosis and referral of DWI offenders to the most appropriate education and/or rehabilitation programs."[7] The American Probation and Parole Association was pleased to have been included, to a small degree, in this effort.

2. The provision of technical assistance, through APPA and other sources, to DWI probation offices in areas such as program management and operation, training of program staff, and program evaluation.

3. The development of a diagnostic tool, commonly referred to as the Mortimer-Filkins Test, for the identification and classification of problem drinkers.[8]

4. The comparative analysis of all existing professional standards and model codes which in some way relate to the processing of drinking-driving cases through the courts for the purpose of determining "whether existing professional standards and codes adequately and appropriately respond to the realities of drinking-driving cases through the courts."[9]

5. The conducting of the Conference on National Standards for Drinking-Driving Cases which served as the vehicle for the preparation and submission to NHTSA of recommendations for future activity in the area of the development of standards and codes.[10]

6. A tremendous increase in the delivery of probation services available to misdemeanant courts in the United States. In many such instances, prior to the introduction of a NHTSA-sponsored program, no misdemeanant services had previously existed. This awareness of the importance of and the need for more misdemeanant court probation services in this country has been one of the most important contributions made by NHTSA to the field of probation; this lack of availability of services to the lower courts is one of the major concerns of the American Probation and Parole Association. Nor has this problem gone unaddressed in the literature:

> A problem in the area of probation existing in some courts is the availability of adequate (or, indeed, any) probation personnel and facilities. This is

> particularly the case with regard to city or municipal courts where drinking-driving cases are prosecuted under municipal ordinances. Probation facilities are frequently lacking, if available at all.[11]
>
> Whether or not probation is associated with a referral to rehabilitation or education, the concept of probationary control over drinking drivers has aroused much interest in the lower courts.[12]

While it remains extremely questionable, at best, whether or not NHTSA was the appropriate federal agency whose responsibility it was to provide funding for the above advancements in a criminal justice-related area,[13] they have been and continue to be the major federal agency by far which has not assumed a "head-in-the-sand" (or "ostrich") approach to the needs of DWI probation.

Although the above-listed examples of how the advancements in probation have been in no small way directly attributable to the involvement and support of NHTSA, the DWI probation concept has also caused problems for many probation offices in the United States. In a separate article, I have described several such problems that have emerged, and it is not the purpose of this paper to rehash them in detail.[14] However, the introduction and illumination of some of those problems of concern to APPA are necessary at this point in order to provide a basis for the understanding of the causes of the current problem being addressed.

Unfortunately, there have been occasions when enabling ASAP-type legislation has been introduced and oftentimes even passed by state legislatures without first coordinating such legislation through probation systems at any state or local level; this situation has usually arisen when the legislation was introduced by a state's highway department. The reasons for such occurrences

have been numerous, but it has often come about due to the erroneous perception of highway policymakers that such legislation does not lie within the purview of the criminal justice system. What these same policymakers have failed to realize is that the local probation offices will be the ones faced with the task of having to handle the additional caseload generated by such legislation. Another reason for the lack of coordination and proper planning may have been the states' fear that if they did not move quickly, the federal funds would not be available to them for the implementation of their programs.

Whatever the reasons, the end result, in certain instances, was the passage of legislation, the submission of requests for and actual receipt of federal funds, and the planning and commencement of DWI programs without the input of appropriate probation offices. The problems that have come about because of this fragmented planning have, at times, wreaked havoc on local probation offices which have not had sufficient staff (especially those with specialized training in dealing with the dysfunctional alcohol abuser) to effectively handle the additional caseload, or sufficient appropriate community resources to which they could refer the offenders for education and/or treatment. These are only a few of the problems that have been faced by those existing probation offices given the responsibility of supervising the DWI offenders.

The larger problem to the field of probation as a profession occurred in those localities where misdemeanant services were nonexistent, where "separate" ASAP (or some form of DWI probation)

offices were created with funds provided by NHTSA. "An average of 15.5 per cent of each ASAP's funds went to the courts...and most of those funds went to the creation of pre-sentence/probation capabilities."[15]

> ASAP was the first large-scale program to approach the misdemeanant with the idea of pre-sentence/probation for their population...ASAP, in other words, invented the area and moved ahead of all other programs experimenting with the lower courts.[16]

However, because of the dearth of extant misdemeanant probation services, "at the beginning no one knew how to run them or whether they would work, and very few resources were available."[17] These "hybrid" programs, then, were begun, in most instances, without coordinating with the "regular" probation offices and were placed wholly outside of the latter's administrative responsibility. They were allowed to "do their own thing" rather than being made a part of the existing probation offices. In most such instances, input from the existing probation offices was nonexistent. In all fairness, however, it must be noted that, in some cases, the DWI program did approach the existing probation system, but, to say the least, its concept of probation was not embraced by the traditional probation office. When this occurred, the DWI program was set up, through no fault of its own, without the necessary probation input. It is to the type of DWI probation program which was planned and implemented in a vacuum that we now turn our attention.

By not interfacing with existing probation agencies at the local, state, or even federal level, this type of DWI probation office was all too often set up on an unsound basis of probation

organization or management: no probation standards were used for the setting of minimum qualifications for probation officers; on-the-job training of probation staff regarding the typical functions of a probation officer (e.g. presentence investigation and report-writing, caseload management techniques, the performance of criminal justice record checks and other such investigative tasks, correct revocation procedures to follow, casework recording principles, basics of the referral procedures) were not provided; salaries were not set up in line with those of existing probation officers in the same geographical area (sometimes they were higher, sometimes lower)[18]; training in basic probation management and organizational development principles was not provided to supervisory personnel; and there was a lack of clear understanding of the workings of the criminal justice system of which (although some DWI probation staff are loathe to admit it) this type of program is a part. Because of the fact that so many DWI probation programs of this type were begun and operated without benefit of probation management principles, it is not difficult to understand why programs of this type have usually not been evaluated from a probation perspective. However, it is the contention of the APPA that such evaluation is precisely what is needed.

That evaluation of social programs is necessary to ensure that they attain their goals in the most efficient manner is unassailable. This is especially true when the social program in question has been based on the "systems approach," as was the ASAP concept. Each component of the total system must be fully evaluated, since its functioning greatly impacts the other

components. If the system is to be effective, then each part of it must be accountable for its operations, and the appropriate measures must be built in "on the front end" if at all possible. However, due to insufficient time for planning and less than total coordination of all components of the system (primarily at the state and local levels), programs began without fully identifying or even realizing exactly what needed to be measured.

> When the Program started, no one really knew everything that needed to be recorded, and when later discoveries were made, they had a hard choice between changing the evaluation requirements or not imposing new requirements on all sites.[19]

Unfortunately, the various attempts at evaluating drinking-driver probation programs thus far have, for the most part, failed to recognize the need to evaluate the probation phase of such programs; therefore, the evaluation designs which were developed prior to the commencement of a program did not include measures regarding the operations of the DWI probation office per se from a probation administration perspective. I find this interesting in light of the fact that "ASAP showed that court management, procedures, and administration are more important than evidentiary issues in affecting the number, nature, and outcome of drinking-driver cases."[20] If this is so, and I believe that it is, the management of the DWI probation office must be evaluated as rigorously as the administration of any other unit of the court structure, if not more so.

Without such evaluation, there will be deleterious effects on management personnel who are responsible for the smooth and

efficient operation of the probation office on a day-to-day basis. This is ironic since these same management personnel are the ones responsible for the current sad state of affairs, because the onus for defining what measures go into the original evaluation design lies solely with management. In most instances, the DWI probation programs have been evaluated largely in terms of the number of drinking-driver fatalities; per cent of federal funds spent; amount of recidivism of offenders (which is usually neither defined nor measured on a consistent basis from program to program); or simply by cost-effective measures. By evaluating DWI probation programs without having first built in the appropriate measures or base-line data, program management will be unable to identify areas within their organizations that need corrective action.

Another problem caused by not evaluating DWI probation programs from a probation perspective is that, by not having to be accountable as probation offices, the programs fail to gain "legitimacy" in the eyes of the criminal justice system, a situation detrimental to the field of probation.

A facet of the DWI probation office which is not often recognized as being important and which is rarely evaluated in research efforts is its benefit to the misdemeanant court system and to the community. The lower court judges and prosecutors gain important information from the probation personnel which is used in determining the most appropriate disposition of each case based on its individual merits. The implementation of a DWI probation program augments the existing human service delivery

system within a community. In addition, the introduction of such a program into a community has very frequently served to significantly increase the amount of interfacing among the various community services.

> The enhanced cooperation in ASAP among the diverse elements of the criminal justice system (particularly the courts and the alcohol treatment system) has had a major impact on the overall community response to alcohol abuse.[21]

"ASAP improved the operations of every court willing to work with it, by providing them either with resources or with principles and methods."[22] These side benefits, brought about vis-á-vis the introduction of probation into the misdemeanant court system, must be evaluated if the full range of program operations is to be comprehensively assessed.

When the day-to-day operations of any type of program which has as its responsibility the supervision of people is not evaluated in the most appropriate and comprehensive manner and on an ongoing basis, then the one who is in the position to lose the most is the offender. If there is no built-in mechanism for the evaluation of the quality of casework and supervisory services within a DWI probation office, then there is no way to ensure that the offender is being provided with the best possible services. Since the DWI probation officers are the main coordinators of all services provided to the offenders, it is crucial that their tasks be carried out in the most effective way possible and that their performance be appropriately evaluated. This type of evaluation will not only benefit the court system, the community, program management, the offender, and the DWI probation officer, but also the field of probation in general,

especially those DWI probation programs as yet unborn.

> The state-of-the-art of pre-sentence/probation in drinking-driving cases has advanced enormously as a result of ASAP, but it has still not reached the stage where definite research information can be provided to beginning jurisdictions.[23]

I believe that, in performing the dual role of working with the offender while acting in the best interests of the community, the field of probation can ill-afford the ramifications that will ensue if the DWI probation programs continue to operate without the application of appropriate probation standards and techniques to their evaluation.

FOOTNOTES

[1] U. S. Department of Transportation, National Highway Traffic Safety Administration, Rural Courts And Highway Safety (Washington, D.C.:1977), pp. 36-37.

[2] Ibid., p. 26.

[3] U.S. Department of Transportation, National Highway Traffic Safety Administration, Final Report of the National Highway Safety Advisory Committee On Alcohol Safety Adjudication (Washington, D.C.: 1977), p. iii.

[4] Alexander B. Smith and Louis Berlin, Introduction To Probation And Parole (St. Paul, Minn.: West Publishing Co., 1976), pp. 76-77.

[5] Gary J. Scrimgeour, Summary of ASAP Results For Application to State And Local Programs; Vol. I - ASAP Findings (San Antonio, Texas: Southwest Research Institute, 1976), p. 59.

[6] Gary Scrimgeour et al., Comparative Analysis of Alcohol Highway Safety Judicial Standards And Existing Professional Standards, Vol. II: Analysis of Standards And Codes (Sponsored by The Fund for Public Education, American Bar Association, Chicago, Ill. and Institute for Research in Public Safety, Indiana University, Bloomington, Ind.: December, 1978), p. 49.

[7] Margaret W. Nesbitt and Donald W. McGill, Pre-Sentence Investigation Techniques For Drinking/Driving Offenses (Four Volumes: Final Report; Participant's Manual; Instructors' Guide; Course Guide) (Valencia, Pa.: Applied Science Associates, Inc., 1978).

[8] M.W. Kerlan et al., Court Procedures For Identifying Problem Drinking, Vol. I - Manual (Revised) (Ann Arbor, Mich.: University of Michigan, Highway Safety Research Institute, 1971).

[9] Gary Scrimgeour et al., Comparative Analysis of Alcohol Highway Safety Judicial Standards And Existing Professional Standards, Vol. I: Technical Report. (Sponsored by The Fund for Public Education, American Bar Association, Chicago, Ill., and Institute for Research in Public Safety, Indiana University, Bloomington, Ind.: December, 1978). This contract was performed jointly by the Fund for Public Education of the American Bar Association and the Institute for Research in Public Safety of Indiana University and served to bring together a thirteen-member Study Team made up mainly of representatives from national organizations involved in the drinking-driving adjudicative process. The American Probation and Parole Association was honored to provide representation to this Study Team.

[10] Scrimgeour et al., Vol. II. This conference was attended

by national organizations such as the American Probation and Parole Association, the American Bar Association, the National Institute on Alcohol Abuse And Alcohol, the National Council on Alcoholism, the American Judges Association, Alcoholics Anonymous, and the National District Attorneys Association.

[11] Ibid., p. 49.

[12] U. S. Department of Transportation, National Highway Traffic Safety Administration, Final Report, p. 5.

[13] One of the recommendations of the Study Team was that, regardless of the more general interest of the U. S. Department of Transportation in the relationship between drinking-drivers and highway safety, the U. S. Department of Justice and the U. S. Department of Health, Education, and Welfare should take primary responsibility for leadership in the area of the adjudication of the drinking-driver. However, DOT has been the federal agency that has provided the funding and priority for this social problem thus far. This recommendation was affirmed by the conferees in attendance at the Conference on National Standards For Drinking-Driving Cases, which was conducted in 1978 (see footnotes 9 and 10).

[14] Randy J. Polisky, "Problems For Presentence And Probation," Scrimgeour et al., Vol. I.

[15] Scrimgeour, Summary of ASAP Results, p. 43.

[16] Ibid.

[17] Ibid.

[18] In the course of conducting an evaluation of a lower-court DWI Probation Program in 1978, this author found that the yearly entry salary of a City DWI Probation Counselor was $7,380.00, as compared to a starting salary for State Probation Officers of $9,672.00 and $9,144.00 for County Pretrial Release Counselors.

[19] Scrimgeour, Summary of ASAP Results, p. 80.

[20] Ibid., p. 82.

[21] U. S. Department of Transportation, National Highway Traffic Safety Administration, Final Report, p. iv.

[22] Scrimgeour, Summary of ASAP Results, p. 82.

[23] Ibid., p. 59.

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Traffic Safety Impact of Mandated Licensing Actions Relative to Alcohol Abuse Treatment Programs or Fines and/or Jail Sanctions

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Paper presented at the 1979 National Alcoholism Forum,
Washington, D.C., April 30, 1979

ACKNOWLEDGMENT

This study was conducted as a component of a large-scale evaluation effort mandated by the California Legislature (Senate Bill 38 - Gregorio, Chapter 890 of the 1977 regular session). The overall effort was jointly completed by the California Department of Motor Vehicles (DMV), and the Department of Alcohol and Drug Abuse. A complete description of the study is in "Effectiveness of License Suspension or Revocation for Drivers Convicted of Multiple Driving-Under-the-Influence Offenses," and "An Evaluation Of Alcohol Abuse Treatment as an Alternative to Drivers License Suspension or Revocation."

The traffic safety evaluation component of the effort was supported by funds from the California Office of Traffic Safety (OTS #057701). It was performed by staff of the DMV Research and Development Section under the general direction of Ronald S. Coppin and Raymond C. Peck.

Further publications of the results include "The Efficacy of Licensing Controls as a Countermeasure for Multiple DUI Offenders" [Journal of Safety Research, Fall 1978, Vol. 10(3)] and "The Traffic Safety Impact of Alcohol Abuse Treatment as an Alternative to Mandated Licensing Controls" (Accident Analysis and Prevention, in press).

The opinions, findings and conclusions expressed are those of the authors and not necessarily the California Office of Traffic Safety, National Highway Traffic Safety Administration, or the Federal Highway Administration.

INTRODUCTION

An innovative sentencing strategy for drivers convicted of multiple driving-under-the-influence (DUI) offenses was legislatively implemented in four California counties in 1976. The legislation offered, as an alternative to a mandatory license suspension or revocation, an opportunity to participate in a 12-month alcohol abuse treatment program. Prior to passage, a second DUI conviction within a five-year time period required the imposition of a 12-month license suspension. A three-year license revocation was mandated when a third or subsequent DUI conviction was incurred within a seven-year time frame. As an alternative, the legislation permitted a driver's participation in state approved programs which provide: (1) close and regular supervision of participants including face-to-face interviews with participants at least once every other calendar week, (2) a variety of direct treatment services for problem drinkers/alcoholics or the capability of referring them to such treatment, (3) an opportunity for a driver to be referred to a program only once within a four year time frame, and (4) the capability of monitoring and supervising participants referred to outside agencies. A DUI conviction subsequent to program involvement constitutes grounds for dismissal from the program and makes the driver vulnerable to the mandated licensing action that was originally stayed as a result of his treatment participation. First-time offenders can become involved in the program, but this seldom occurs in California, since licensing action is not mandated for the first DUI conviction. However, the court in its discretion can order a six-month license suspension on the first offense, thereby stimulating some program participation.

This study assessed the traffic safety impact of using mandated licensing controls as opposed to no licensing action or participation in the 12-month alcohol abuse treatment program. Standard fines and/or jail sentences were used in all three approaches.

Background

Numerous studies have been published over the past 10 years concerning the traffic safety impact of various types of alcohol-related countermeasures. Each of these countermeasures was designed to have a specific deterrent effect on participants' subsequent involvement in alcohol related accidents and/or drunk driving convictions. The principal catalyst for many of these efforts was the decision of the U.S. Department of Transportation to establish the reduction of alcohol related accidents as a top priority. This resulted in the funding of 35 Alcohol Safety Action Projects (ASAP) in state, county, or metropolitan jurisdictions. A variety of law enforcement, judicial, rehabilitation, licensing control, and public information countermeasures were a direct product of this effort. Though the overall success of the ASAP effort is the subject of current controversy (Johnson, Levy, & Voas, 1976; Robertson, 1977; Zador, 1976; Zador, 1977), many of the subanalyses were informative and germane to our evaluation. As an example, a principal focus of the ASAP concept was to classify convicted drunk drivers by drinker type and to provide customized treatment based upon the classification. According to Voas and Nichols (1978), studies concerning the effectiveness of this approach show that almost any form of treatment or education had a positive effect on the subsequent driving record of social

drinkers when compared to the simple imposition of fines. Few positive results were found, however, for treatment of problem drinkers. Basically, only a disulfiram (Antabuse, Ayerst Labs, Inc.) program was found to have any effect on subsequent driving records of problem drinkers (Burch, 1977).

A detailed overview of various treatment approaches employed as traffic safety countermeasures is presented in a paper by Joscelyn, Maickel, and Goldenbaum (1971). Two evaluations of alcohol abuse treatment programs, using rather rigorous scientific methodology, were conducted in Nassau County, New York, and in Phoenix, Arizona (Preusser, Ulmer, & Adams, 1976; Swensen & Clay, 1977). Each of these efforts randomly assigned drivers to treatment, used either a "hands-off" or "minimum exposure" control group, and provided for an adequate participant follow-up or data collection period. Swenson and Clay (1977) found no significant difference in drunk driving recidivism between drivers who received minimum exposure to treatment (a home study assignment) and those who were exposed to alcohol prevention workshops, therapy workshops or power motivation training. Similarly, Preusser et al. (1976) found that a 13 week (minimum) treatment approach had no significant impact on subsequent drunk driving convictions or accident involvement. In fact, they reported some evidence that treatment participants had higher accident involvement during the follow-up period. Positive results, when reported (Crabb, Gettys, Malfetti, & Stewart, 1971; Jacobs, Ulmer, & Deans, 1974), have proven inconclusive due to lack of random assignment, nonavailability of an adequate comparison group, or improper exclusion of program dropouts from analyses. As an example, Crabb et al. reported the positive impact of the four-session Phoenix Driving-While-Intoxicated Course on subsequent drunk driving convictions. They used a control group of drivers who had been matched on the basis of age, sex, and race with those drivers attending the school. Unfortunately, the results also showed that the prior driving records were not equivalent, thus rendering the results inconclusive.

Our knowledge of the specific deterrent effect of penal sanctions on subsequent drunk driving convictions or accident involvement is limited. Blumenthal and Ross (1973) found no significant difference in the subsequent driving records of first time drunk drivers subjected to fines, standard probation, rehabilitative probation, or jail. The authors, as well as one critique of this study (McGuire & Peck, 1977), suggested that severe selection biases may have obscured the existence of relative treatment effects. In a well designed quasi-experimental study in Australia, Homel (1976) determined that a high fine ($201 plus) was an effective deterrent to subsequent reconvictions for drivers convicted of drunk driving. Imprisonment was not found effective, with those drivers jailed for six months or longer showing the highest level of reconviction.

The deterrent effect of license controls on subsequent drunk driving involvement or accidents has been recently documented in three California reports (Epperson, Harano, & Peck, 1975; Hagen, 1977; Hagen, 1978). In general, multiple DUI offenders receiving a mandatory license suspension (12 months) or revocation (36 months), in addition to fines and jail, were found to have at least 30% fewer convictions and accidents than those drivers receiving only fines and/or jail sanctions. The effect lasted approximately 42 months on DUI recidivism and 48 months on accidents. Finally, the licensing actions were found to be differentially effective for various age groups.

A later study (Janke, Peck, & Dreyer, 1978) contains evidence of a 50% reduction of accident expectancy for a three year period following multiple conviction of drunk driving. Since a majority of the drivers received either a license suspension or revocation, it is likely that the reduction was causally related to licensing action impact. Results from Homel (1976) were consistent with these studies. Specifically, he reported that license disqualification for drivers convicted of drunk driving was an effective deterrent to subsequent traffic convictions. Three to 12 months of licensing control were considered optimum.

METHODOLOGY

Two distinct sets of methodology were used to assess the efficacy of licensing action as a traffic safety countermeasure and to compare the effects of licensing action to that achieved through alcohol abuse treatment participation. A separate description of each methodology follows.

Mandatory Licensing Action Versus No Licensing Action

All drivers convicted of second and subsequent DUI offenses during the first six months of 1970 in the State of California were identified. During this period, approximately 10,000 drivers received the mandated licensing action while an additional 1,650 avoided the action by having their prior convictions declared unconstitutional. Both groups of drivers received standard fines and/or jail sentences. In an earlier study (Epperson et al. 1975), a subject-for-subject matching procedure was followed to identify an appropriate match from the mandated licensing action group for each driver who avoided the license suspension/revocation. A total of 1,501 matched pairs of drivers were included in this analysis.

All data included in the analysis were captured from the formal driver records maintained by the California Department of Motor Vehicles. Prior driving history variables were collected for a five year time period prior to the driver's 1970 entry into the project. Six years of follow-up data were captured subsequent to that entry date.

Analysis of covariance procedures were employed to further control for potential between group differences not accounted for through the subject-for-subject matching process. Covariates included age, residence change, and the prior five-year driving history variables of accidents, had-been-drinking accidents, DUI convictions, reckless driving convictions, one count convictions, two count convictions, and implied consent actions. Separate analyses were conducted for each of the subsequent driving history variables. Any analysis found to violate the basic analysis of covariance assumption of equality of slopes was not conducted.

Survival curve analytical procedures were employed to assess the duration of license suspension/revocation treatment effect on subsequent DUI violation or accident involvement. Statistical tests were conducted annually over the six-year follow-up period to ensure that differences reflected in the survival curves were not due to mere "chance" variation.

Mandatory Licensing Action Versus Alcohol Abuse Treatment Participation

Analysis of covariance techniques were employed to assess the traffic safety impact of the alcohol abuse treatment approach relative to that associated with mandated licensing actions. The legislation made the use of a pure or minimum exposure control group and random assignment to treatment (rehabilitation or mandated licensing controls) impossible.

Four alcohol abuse treatment program demonstration counties were selected through a competitive bid process. The treatment concept was implemented by public or private service provider(s) in all four counties. A structured three-phase approach was used to select, from the 54 remaining California counties, a single comparison county for each of the four demonstration counties. In each phase, available counties were compared with each of the four demonstration sites on the basis of selected key characteristics. The results of each phase of the selection process were documented by McDonald and McIntire (1977). The top ranking county was not necessarily selected as the comparison county. Counties known to have active preconviction diversion programs or large scale treatment services for multiple DUI offenders were not permitted as comparison counties, regardless of their final ranking. The demonstration counties and their respective match selections were: Kern/San Joaquin, Santa Clara/San Bernardino, Ventura/Monterey, Yuba/Nevada.

Drivers in the eight evaluation counties who were convicted of a second or subsequent DUI offense during the months of January, 1976, through February, 1977, were identified. In all, 2,874 drivers in the four comparison counties received a 12-month license suspension or a 36-month license revocation, while 2,442 drivers in the demonstration counties received a similar licensing action, since they did not participate in the treatment program. Finally, a total of 2,571 drivers participated in the demonstration county treatment programs and thereby avoided the mandated licensing action.

All data included in the traffic safety analyses were captured from the formal driving records maintained by the California Department of Motor Vehicles. Prior demographic and driving history data for each driver identified were collected for a three-year time period prior to the DUI conviction which resulted in the licensing action or program participation. Twelve months of follow-up data were collected subsequent to this date from the driving record. Analysis of covariance statistical procedures were employed to probe differences in the subsequent driving records of the groups of identified drivers. This statistical approach permitted control of differences that might have existed between the driver groups other than the receipt of a licensing action or treatment for alco o abuse. Covariates included age at time of conviction and the following driving history variables (three years prior to conviction): (1) total number of accidents, (2) nighttime accidents (2100-0300 hours), (3) number of drunk driving convictions, (4) number of reckless driving convictions, (5) number of "one count" convictions (speeding, illegal lane change, etc.), and (6) number of implied consent actions. A separate analysis was conducted for each of the driving history variables during the 12-month follow-up period. If the data did not meet the basic analysis of covariance assumption of equality of slopes, no analysis was conducted. However, for descriptive purposes, the raw and adjusted group means of each driving history dependent variable were reported.

Three sequences of covariance analyses were conducted. The first sequence was designed to assesss the traffic safety impact of participating in the 12-month alcohol abuse program in lieu of receiving the mandated licensing action. It involved the comparison of the following three groups: (1) demonstration county treatment program participants, (2) demonstration county suspended or revoked drivers (nonparticipants), and (3) comparison county suspended or revoked drivers. An assessment was also made of the impact of including or excluding a small subset of drivers (N = 388) in the treatment program participant group. This subset of drivers originally started in the treatment program, and for some reason dropped out prior to their scheduled completion date. Potential dropout reasons included the receipt of a subsequent DUI between the initial conviction date and actual program entry (only four cases), nonpayment of fees, residence change, or simply a lack of interest or "change of mind." All dropouts eventually received the original mandated licensing action.

The second sequence of analyses was conducted to assess the traffic safety impact of the overall program of adjudicating and providing services to the multiple DUI offender in the demonstration sites as opposed to the process available in the comparison counties. Specifically, this sequence of analyses involved the following two driver groups: (1) aggregate of demonstration county drivers (program participants, suspended or revoked drivers, and program dropouts), and (2) suspended or revoked drivers in the comparison counties.

Finally, a third sequence of covariance analyses was conducted since one pair of the counties (Santa Clara/San Bernardino) comprised over 50% of the total sample. It was possible that any effect detected in the earlier analytical sequences might be attributed solely to differences between these two counties. Program effects found in the other counties included in the evaluation could be generalized to a larger number of new programs, but their client volume would be considerably lower than that of the six largest counties in the state to which generalization of the Santa Clara/San Bernardino results would be most appropriate. Further, since they were the largest of evaluation counties, any differences found in their analysis might be most characteristic of programs being applied to over 60% of the driver population. Individual analyses of the other three pairs of counties was impossible because of insufficient sample sizes. Specifically, this sequence of analyses included the following four comparisons: (1) Santa Clara (program participants and nonparticipants separated) versus San Bernardino (all multiple DUI offenders); (2) Santa Clara (program participants and nonparticipants merged) versus San Bernardino (all multiple DUI offenders); (3) remaining three demonstration counties (program participants and nonparticipants separated) versus remaining three comparison counties (all DUI multiple offenders); and (4) remaining three demonstration counties (program participant and nonparticipants merged) versus remaining three comparison counties (all DUI multiple offenders).

Survival rate analytical procedures were used to assess the duration of the effect associated with licensing actions and alcohol abuse treatment on

subsequent DUI or accident involvement. Proportional tests were conducted quarterly for the 12-month follow-up period to ensure that differences reflected in the curves were not due to mere chance variation.

RESULTS AND DISCUSSION

The results of this study demonstrate that the use of mandated licensing actions in addition to fines and/or jail sentences for multiple DUI offenders has a more positive effect on traffic safety than the use of only fines and/or jail sentences or the use of fines and/or jail sentences in combination with 12-month alcohol abuse treatment program. Both the magnitude and duration of the treatment effect associated with mandated licensing withdrawal were documented.

Traffic Safety Impact of Mandated Licensing Actions

The traffic safety impact of licensing action versus no licensing control was assessed by applying analysis of covariance techniques to the set of driving history variables listed in Table 1. Covariates included age, residence change, and driving history records (accidents, HBD accidents, one count convictions, two count convictions, implied consent actions) accrued five years prior to the DUI conviction stimulating project entry. The dependent variables listed in Table 1 were based upon the drivers record evidenced six years following the project entry conviction. No analyses were conducted when the basic covariance assumption of equality of slopes could not be satisfied. As can be seen in Table 1, statistically significant differences were found in the frequencies of subsequent reckless driving convictions, one count convictions, total countable convictions, accidents, and personal injury and fatal accidents. The reported frequencies of convictions or accidents for the multiple DUI offender driver group who did not receive the mandated license suspension/revocation were, at a minimum, 30% greater than that for drivers who received the mandated licensing action. It is apparent from these results that the imposition of licensing controls does reduce the amount of driving exposure. The duration of this effect is addressed later in this report. These results justify the use of mandated licensing action as a traffic safety countermeasure for drivers convicted of multiple DUI offenses.

The traffic safety impact of using mandated licensing action as opposed to alcohol abuse treatment (in addition to fine and/or jail sanctions) was addressed through a three phase analytical process. The first phase compared the 12-month driving record subsequent to the DUI conviction causing program participation or licensing action for each of the following driver groups: (1) demonstration county program participants, (2) demonstration county non-participants (received licensing action), and (3) comparison county offenders (received licensing action). Analysis of covariance procedures were applied to each driving record variable listed in Table 2. The seven covariates described earlier were used to account for differences among the groups and to adjust the subsequent driving records accordingly. When the regression

TABLE 1

Analysis of License Suspension and No Suspension Between Group Differences for All Subsequent Driver Record Variables

Dependent variables	Unadjusted group means		Adjusted group means		*F* Values
	Licensing action	No licensing action	Licensing action	No licensing action	
DUI	.7401	.9167	.7069	.9410	N/A
Reckless driving	.1346	.2019	.1266	.2098	26.14
One count convictions	1.0025	1.3907	.9514	1.4418	72.74
Two count convictions	.9001	1.1369	.8569	1.1800	N/A
Total countable convictions	1.8930	2.5233	1.7992	2.6172	114.67
Accidents	.3518	.5010	.3372	.5155	41.64
Had been drinking accidents	.1519	.2012	.1464	.2067	N/A
Personal injury and fatal accidents	.1292	.1992	.1248	.2036	26.73
Single vehicle accidents	.0613	.0726	.0591	.0748	N/A

NOTE: (1) All reported *F* Values were significant at $p < .01$; df = 1,2993
(2) N/A--Test not appropriate since equality of slopes did not exist

slopes of the criterion variable on the covariates were not equal ($p < .10$), only the means were reported since a test of their difference would be ambiguous because of violation of the basic assumption of the analysis of covariance. When the slopes were equal and F values significant, pairwise comparisons were conducted to determine the nature of the differences. For the first analysis, the 388 drivers who entered the treatment program but dropped out prior to completion were excluded, so as to provide a more precise estimate of the effect of pure treatment program participation.

As shown in Table 2, statistically significant ($p < .05$) differences were found between the three groups on the following variables: (1) law enforcement reported accidents, (2) personal injury and fatal accidents, (3) accidents occurring between 2100 and 0300 hours, and (4) accidents occurring between 1800 and 0600 hours. The differences on these variables were:

1. The demonstration county program participants had significantly more law enforcement reported accidents than comparison county offenders, while the demonstration county nonparticipant group was not significantly different from either of the other two.

2. The demonstration county drivers (participants and nonparticipants)

Table 2

Group Differences and *F* Values in One-Year Post Records on all Driving Variables

Variable	Unadjusted Group Means			Adjusted Group Means			*F* value on Adjusted Group Means
	Participants (n = 2,571)	Non-Participants (n = 2,442)	Comparison (n = 2,874)	Participants (n = 2,571)	Non-Participants (n = 2,442)	Comparison (n = 2,874)	
All reported accidents	.0894	.0757	.0564	.0916	.0723	.0573	N/A
Law enforcement reported accidents	.0739	.0712	.0539	.0763	.0679	.0545	4.73
Had-been-drinking accidents	.0381	.0479	.0338	.0404	.0455	.0338	Not significant
Personal injury and fatal accidents	.0323	.0324	.0212	.0336	.0310	.0212	4.03
Accidents (2100-0300 hours)	.0222	.0258	.0150	.0229	.0248	.0152	3.32
Accidents (1800-0600 hours)	.0416	.0430	.0264	.0431	.0410	.0268	5.85
DUI convictions	.1482	.1433	.1204	.1545	.1371	.1200	N/A
Reckless driving convictions	.0124	.0197	.0153	.0129	.0188	.0156	Not significant
One count abstracts	.2263	.1093	.0824	.2268	.1037	.0868	N/A
Two count abstracts	.1684	.1711	.1385	.1760	.1636	.1381	N/A
Total countable abstracts	.3951	.2809	.2254	.4030	.2677	.2296	N/A
Implied consent actions	.0688	.1044	.0991	.0761	.0987	.0974	N/A

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 2,7887$.

(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

had significantly more personal injury and fatal accidents than the comparison county group.

3. The demonstration county nonparticipant group had significantly more 2100-0300 hours accidents than the comparison county drivers, while the demonstration county participant group was not significantly different from either.

4. The demonstration county program participant and nonparticipant groups had higher involvement in 1800-0600 hours accidents than comparison county drivers.

An inspection of the within-group regression slopes for the variables not satisfying the basic assumption of equality revealed a general tendency for the participant driver group to have a steeper slope than either the nonparticipant or comparison county driver groups. This difference in slope means a stronger relationship between prior and subsequent driving records existed for the demonstration county alcohol abuse treatment participants who did not receive the licensing action. Such would be expected if the imposition of a licensing action resulted in a change in driving exposure. Reduced exposure in the groups receiving the mandated licensing action would tend to put a "ceiling" on their subsequent records, thereby reducing the relation-

ship, particularly for those drivers with the worst prior records. This interpretation is supported by the nature of the subset of variables found to violate the covariance assumption (accident variable of "all reported accidents," and the entire set of conviction variables with the exception of reckless driving). These variables, out of the total set of driving variables available for analysis, are expected to be most susceptible to driving exposure impact.

Further evidence for the decreased driving exposure hypothesis is provided by comparing law enforcement reported accidents and nighttime accidents occurring during the hours of 2100-0300. The total number of law enforcement reported accidents is correlated with driving exposure, while accidents involving alcohol occur most often late at night (U.S. Department of Transportation, 1974). Program participants had significantly more law enforcement reported accidents than did suspended and revoked drivers in the comparison counties. At the same time, there were no significant differences between these groups on 2100-0300 hour accidents. Had drinking, thus drinking and driving, been significantly impacted by licensing action, a difference would be expected in the incidence of both the 2100-0300 hour accidents and all law enforcement reported accidents. Conversely, it can be argued that the lack of a statistical difference in the occurrence of 2100-0300 hour accidents may be due to treatment program impact on a participant's drinking pattern.

Finding that drivers not participating in the treatment program in the demonstration counties evidenced more personal injury and fatal accidents as well as accidents between the hours of 2100-0300 than drivers in the comparison counties was not anticipated. Each driver group received licensing controls. However, such an effect would be expected if drivers not participating in the alcohol abuse program were: (1) perceived as poor risks by the judicial system and were not afforded an opportunity to participate, (2) generally more recalcitrant and unwilling to change, (3) drivers who perceived the risk of detection while driving under license suspension or revocation as low, or (4) younger drivers. Only the latter hypothesis could be evaluated because of the lack of available data. In demonstration counties, 38% of suspended and revoked drivers were under 30, while only 27% of program participants fell into this age range (34% of the suspended or revoked drivers in the comparison counties were under the age of 30). Whether such differences were due to the adjudication process or driver choice is not possible to determine. Younger drivers may be less sophisticated concerning the options available to them, or simply less willing to make a long-term commitment to a treatment program. It is possible the disproportionate entry rates could have major implications on the potential success of the overall sentencing strategy employed in the demonstration counties.

Further inspection of the variables with unequal slopes shows the size of the adjustment to the means is considerably smaller than the size of the differences among the means. This suggests that the differences among groups on these variables are real, even though the adjustment to the means through the analysis of covariance differentially affected the groups. The demonstration county participant group had the highest unadjusted and adjusted means on all of these variables. The sequence of analyses were repeated with

program dropouts included in the participant group, to see whether redefining the program in that manner made any difference. Results were nearly identical, with the only difference occurring for the variable "all reported accidents," where the equality of slopes assumption was met.

The second set of covariance analyses was conducted to test the impact of the total sentencing system in the demonstration counties as opposed to the comparison counties. This involved aggregating all three driver groups in the demonstration counties (participants, nonparticipants, and dropouts). As shown in Table 3, drivers in the demonstration counties had significantly higher involvement in all of the accident variables. As before, the conviction variables (reckless driving was an exception) continued to violate the assumption of equality of slopes. Generally, the demonstration county drivers evidenced steeper slopes, thus a stronger relationship between their prior and subsequent driving records. Such a finding supports the hypothesis that driving exposure was being impacted by the imposition of a licensing action. Further, the size of the between-group differences relative to the size of the adjustment suggests that real differences existed between the demonstration and comparison counties on one count abstracts, two count abstracts, and total countable abstracts, with demonstration counties higher in all cases.

Table 3

Group Differences and *F* Values in One-Year Post Records on all Driving Variables

(Aggregate of *All* Demonstration County Drivers)

Variable	Unadjusted Group Means		Adjusted Group Means		*F* value on Adjusted Group Means
	Demonstration (n = 5,401)	Comparison (n = 2,874)	Demonstration (n = 5,401)	Comparison (n = 2,874)	
All reported accidents	.0831	.0564	.0825	.0575	14.97
Law enforcement reported accidents	.0731	.0539	.0726	.0547	8.62
Had-been-drinking accidents	.0431	.0338	.0431	.0338	3.87
Personal injury and fatal accidents	.0322	.0212	.0322	.0213	7.65
Accidents (2100-0300 hours)	.0239	.0150	.0237	.0152	6.34
Accidents (1800-0600 hours)	.0422	.0264	.0419	.0270	11.39
DUI convictions	.1360	.1203	.1362	.1200	N/A
Reckless driving convictions	.0172	.0153	.0171	.0156	Not significant
One count abstracts	.1693	.0824	.1667	.0876	N/A
Two count abstracts	.1612	.1385	.1614	.1381	N/A
Total countable abstracts	.3310	.2254	.3283	.2305	N/A
Implied consent actions	.0838	.0991	.0848	.0973	N/A

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 1,8226$.

(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

These results continue to confirm that on the basis of traffic safety indicators, the sentencing strategy employed in the demonstration counties is not as effective as the simple use of mandatory licensing actions. This does not necessarily mean that the alcohol abuse treatment approach is totally ineffective in changing driving behavior. It only means that the current format of the program and/or the procedures for entering drivers into the treatment program are not more effective than the traditional strategy of imposing licensing controls. It is possible that a superior strategy, which includes alcohol abuse treatment as a component, might be developed. The strategy would likely be more complex. It probably would require a treatment-assignment procedure more customized to the individual driver, as well as the application of combined treatments (e.g., imposition of a licensing action [suspension, revocation, restriction] and simultaneous referral to an intensive program for alcohol abuse).

It has been suggested that staying the licensing action is the principal incentive for program participation. If this is indeed true, it is understandable why program participation without a personal commitment on the part of the driver is ineffective. As an alternative, stringent licensing controls might be imposed at the beginning of a treatment program. The licensing controls could then be systematically relaxed over the term of successful treatment participation. Thus, driving exposure would be eliminated or reduced until the driver demonstrates a commitment to treatment. As the driver successfully progresses through the program and his or her commitment is substantiated, the licensing action could be made less severe, thus, serving as a second incentive for continued participation.

A third set of covariance analyses were conducted since one of the four pairs of demonstration/comparison counties (Santa Clara and San Bernardino) accounted for over half of the drivers involved in the evaluation. In addition, this pairing was the only urban pairing among the counties, and as such may be the one most representative of programs available to a majority of drivers in the state. Results of these separate analyses comparing program participants, program nonparticipants, and comparison county drivers are shown in Tables 4 and 5.

The most striking difference between these two tables is the fact that the Santa Clara/San Bernardino comparison showed significant differences in law enforcement reported accidents, personal injury and fatal accidents, and accidents occurring between 2100 and 0300 hours. The six county analysis showed only one significant difference (implied consent actions). The differences were:

1. The program participants in Santa Clara County had significantly more law enforcement reported accidents and personal injury and fatal accidents than the San Bernardino County drivers.

2. Both program participants and nonparticipants in Santa Clara had significantly more accidents between 2100 and 0300 hours than the San Bernardino drivers.

Table 4

Group Differences and *F* Values in One-Year Post Records on all Driving Variables
(Santa Clara and San Bernardino Counties Only)

Variable	Unadjusted Group Means			Adjusted Group Means			*F* value on adjusted group means
	Participants (n = 1,662)	Non-Participants (n = 1,391)	Comparison (n = 1,361)	Participants (n = 1,662)	Non-Participants (n = 1,391)	Comparison (n = 1,361)	
All reported accidents	.0938	.0719	.0426	.0960	.0657	.0463	N/A
Law enforcement reported accidents	.0716	.0647	.0397	.0743	.0593	.0420	6.10
Had-been-drinking accidents	.0361	.0431	.0272	.0377	.0397	.0287	Not significant
Personal injury and fatal accidents	.0367	.0324	.0184	.0388	.0292	.0191	4.67
Accidents (2100-0300 hours)	.0259	.0259	.0081	.0262	.0241	.0095	5.72
Accidents (1800-0600 hours)	.0451	.0403	.0154	.0465	.0374	.0166	N/A
DUI convictions	.1492	.1323	.1006	.1538	.1241	.1035	N/A
Reckless driving convictions	.0114	.0187	.0140	.0122	.0167	.0151	Not significant
One count abstracts	.2401	.1215	.0874	.2414	.1021	.1057	N/A
Two count abstracts	.1709	.1610	.1146	.1769	.1507	.1178	N/A
Total countable abstracts	.4115	.2840	.2109	.4185	.2583	.2336	N/A
Implied consent actions	.0614	.0676	.0837	.0646	.0643	.0833	N/A

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 2,4405$.
(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

Table 5

Group Differences and *F* Values in One-Year Post Records on all Driving Variables
(Excluding Santa Clara and San Bernardino Counties)

Variable	Unadjusted Group Means			Adjusted Group Means			*F* value on adjusted group means
	Participants (n = 909)	Non-Participants (n = 1,051)	Comparison (n = 1,513)	Participants (n = 909)	Non-Participants (n = 1,051)	Comparison (n = 1,513)	
All reported accidents	.0814	.0808	.0687	.0847	.0813	.0664	Not significant
Law enforcement reported accidents	.0781	.0799	.0667	.0814	.0802	.0646	Not significant
Had-been-drinking accidents	.0418	.0542	.0397	.0452	.0526	.0387	Not significant
Personal injury and fatal accidents	.0242	.0324	.0238	.0248	.0329	.0231	Not significant
Accidents (2100-0300 hours)	.0154	.0257	.0212	.0164	.0251	.0210	Not significant
Accidents (1800-0600 hours)	.0352	.0466	.0364	.0372	.0463	.0354	Not significant
DUI convictions	.1463	.1579	.1381	.1552	.1540	.1355	N/A
Reckless driving convictions	.0143	.0209	.0165	.0146	.0214	.0160	Not significant
One count abstracts	.2013	.0932	.0780	.2014	.0974	.0750	N/A
Two count abstracts	.1639	.1846	.1599	.1741	.1806	.1565	N/A
Total countable abstracts	.3652	.2769	.2386	.3752	.2772	.2323	N/A
Implied consent actions	.0825	.1532	.1130	.0954	.1443	.1114	4.77

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 2,3463$.
(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

3. Nonparticipants in the other three demonstration counties had more implied consent actions than either program participants or drivers in their comparison counties.

The variables which showed unequal slopes in the earlier covariance analyses again tended to show the same pattern in the Santa Clara/San Bernardino comparisons, with the exception that accidents occurring between 1800 and 0600 hours had equal slopes in the overall comparison but not in the Santa Clara/San Bernardino analysis. Again, there was a tendency for the participant group to have steeper slopes (stronger prior/subsequent record relationships) than the other two driver groups in those instances where slopes were not equal.

The comparisons involving the other six counties showed four variables with unequal slopes among the groups. These four (DUI convictions, one count convictions, two count convictions, and total convictions) all showed unequal slopes in the earlier comparisons, and again the slopes tended to be steeper for the participant group.

Additional covariance analyses were conducted in this phase to test the impact of the overall sentencing system in Santa Clara/San Bernardino and in the other six counties. As shown in Table 6, nearly all of the significant differences found in the overall county comparisons (second sequence of covariance analyses concerning demonstration versus comparison county driver groups) were duplicated in the Santa Clara/San Bernardino tests. The only exception was had-been-drinking accidents, where the difference was not statistically significant in the two-county comparison. Additionally, the two-county comparison found a significant difference in implied consent actions, with San Bernardino showing a higher mean. This was directionally consistent with the overall comparisons, though in the latter case, unequal slopes precluded a test of the difference. In the other instances where slopes were unequal or differences nonsignificant, the results of the two-county comparison replicated that of the overall comparison.

In the six county comparison, excluding Santa Clara and San Bernardino (Table 7), the only significant difference was found in total countable convictions, with demonstration counties having the higher mean. A substantial difference also existed for one count convictions, though inequality of slopes precluded a test. Though nonsignificant, the between group differences generally favored the comparison counties (accidents between 2100 and 0300 hours was the single exception).

The observed differences between Santa Clara and San Bernardino could not be attributed to a faulty matching process. As an example, an inspection of data (California Highway Patrol, 1977) more recent than that used in the original comparison county selection process showed little differences in the overall county rates per licensed driver of total accidents, personal injury

Table 6

Group Differences and *F* Values in One-Year Post Records
on all Driving Variables, Demonstration and Comparison Counties
(Santa Clara and San Bernardino Counties Only)

Variable	Unadjusted Group Means		Adjusted Group Means		*F* value on adjusted group means
	Demonstration (n = 3,281)	Comparison (n = 1,361)	Demonstration (n = 3,281)	Comparison (n = 1,361)	
All reported accidents	.0841	.0426	.0825	.0465	16.13
Law enforcement reported accidents	.0692	.0397	.0681	.0422	10.03
Had-been-drinking accidents	.0402	.0272	.0395	.0289	Not significant
Personal injury and fatal accidents	.0351	.0184	.0347	.0191	7.42
Accidents (2100-0300 hours)	.0262	.0081	.0256	.0095	11.64
Accidents (1800-0600 hours)	.0436	.0154	.0436	.0154	18.02
DUI convictions	.1325	.1006	.1314	.1034	N/A
Reckless driving convictions	.0171	.0140	.0166	.0152	Not significant
One count abstracts	.1862	.0874	.1785	.1061	N/A
Two count abstracts	.1597	.1146	.1584	.1177	N/A
Total countable abstracts	.3468	.2109	.3372	.2340	N/A
Implied consent actions	.0625	.0837	.0627	.0832	5.52

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 1,4634$.
(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

Table 7

Group Differences and *F* Values in One-Year Post Records
on all Driving Variables, Demonstration and Comparison Counties
(Excluding Santa Clara and San Bernardino Counties)

Variable	Unadjusted Group Means		Adjusted Group Means		*F* value on adjusted group means
	Demonstration (n = 2,120)	Comparison (n = 1,513)	Demonstration (n = 2,120)	Comparison (n = 1,513)	
All reported accidents	.0816	.0687	.0831	.0665	Not significant
Law enforcement reported accidents	.0792	.0667	.0807	.0647	Not significant
Had-been-drinking accidents	.0476	.0397	.0483	.0388	Not significant
Personal injury and fatal accidents	.0278	.0238	.0282	.0232	N/A
Accidents (2100-0300 hours)	.0203	.0212	.0204	.0210	Not significant
Accidents (1800-0600 hours)	.0401	.0364	.0407	.0355	Not significant
DUI convictions	.1415	.1381	.1433	.1356	Not significant
Reckless driving convictions	.0175	.0165	.0179	.0160	Not significant
One count abstracts	.1434	.0780	.1453	.0753	N/A
Two count abstracts	.1637	.1599	.1660	.1566	N/A
Total countable abstracts	.3066	.2386	.3108	.2326	15.37
Implied consent actions	.1169	.1130	.1184	.1110	N/A

NOTES: (1) All reported *F* values are significant at $p < .05$, $df = 1,3625$.
(2) N/A--Test not appropriate since slopes are not equal for all groups ($p < .10$).

and fatal accidents, had-been-drinking accidents, and DUI convictions in 1976. However minimal, all of the rates were greater for San Bernardino. If anything, this suggests that the matching was slightly favorable to Santa Clara County. San Bernardino would have been expected to evidence the worst traffic safety record. This, of course, was not reflected in the observed results of this evaluation. Further, the observed differences could not be directly attributed to Santa Clara program quality. The Santa Clara alcohol abuse program has been continuously monitored and approved by staff of the California Department of Alcohol and Drug Abuse (ADA).

The differential impact of the alcohol abuse treatment program in Santa Clara may be due to the urban nature of the demonstration county. Specific factors might include: (1) a more diverse mixture of drinking problems may occur in more densely populated counties; (2) a different level of urban county dwellers' responsiveness to treatment; (3) a difference in the amount/type of driving exposure that might exist in an urban, more populated county; or (4) a difference in the responsiveness of the preexisting adjudication system to new program guidelines. The latter factor might be due to the size of the judicial/probation caseload or procedural complexities unique to more populated counties.

Duration of Licensing Action Treatment Effect

The ability of drivers to avoid subsequent DUI or accident involvement was described through a series of survival curve analyses. In Figure 1, the percentage of drivers (who did or did not receive a licensing action) surviving (not becoming DUI involved) is plotted for each quarter of the six years following project entry. The quarterly survival rates are not adjusted for between group differences in prior driving history. It can be readily seen that fewer suspended/revoked drivers incurred a DUI subsequent to their project entry than those drivers not receiving the mandated licensing action. Each of the six annual survival rates for the six year follow-up period were found to be statistically significant. By reviewing the results of these analyses summarized in Table 8, the treatment effect was found to exist until about the third year of the follow-up period. Inspection of the survival curves in Figure 1, suggests the effect may have existed until as late as 42 months (14 quarters) after project entry. At this point, the two survival curves become parallel, indicating the impact of license suspension/ revocation has ceased to exist.

The survival curves for subsequent accident involvement are illustrated in Figure 2. Inspection of this figure would suggest the treatment effect diminishes approximately four years after project entry. This was verified by the calculation of annual proportion analyses summarized in Table 9.

It should be noted that the 42 or 48 month treatment time frame closely approximates the length of the 36 month revocation period. We were not able to determine the exact proportion of the drivers entering the project who received a 36 month license revocation as opposed to a 12 month license suspension, but we would not expect it to exceed 30%. More importantly, the treatment effect exceeds the 36 month revocation period for both DUI and accident involvement. Therefore, the treatment effect could not have been simply due to abstinence or reduction of driving during the period of sus-

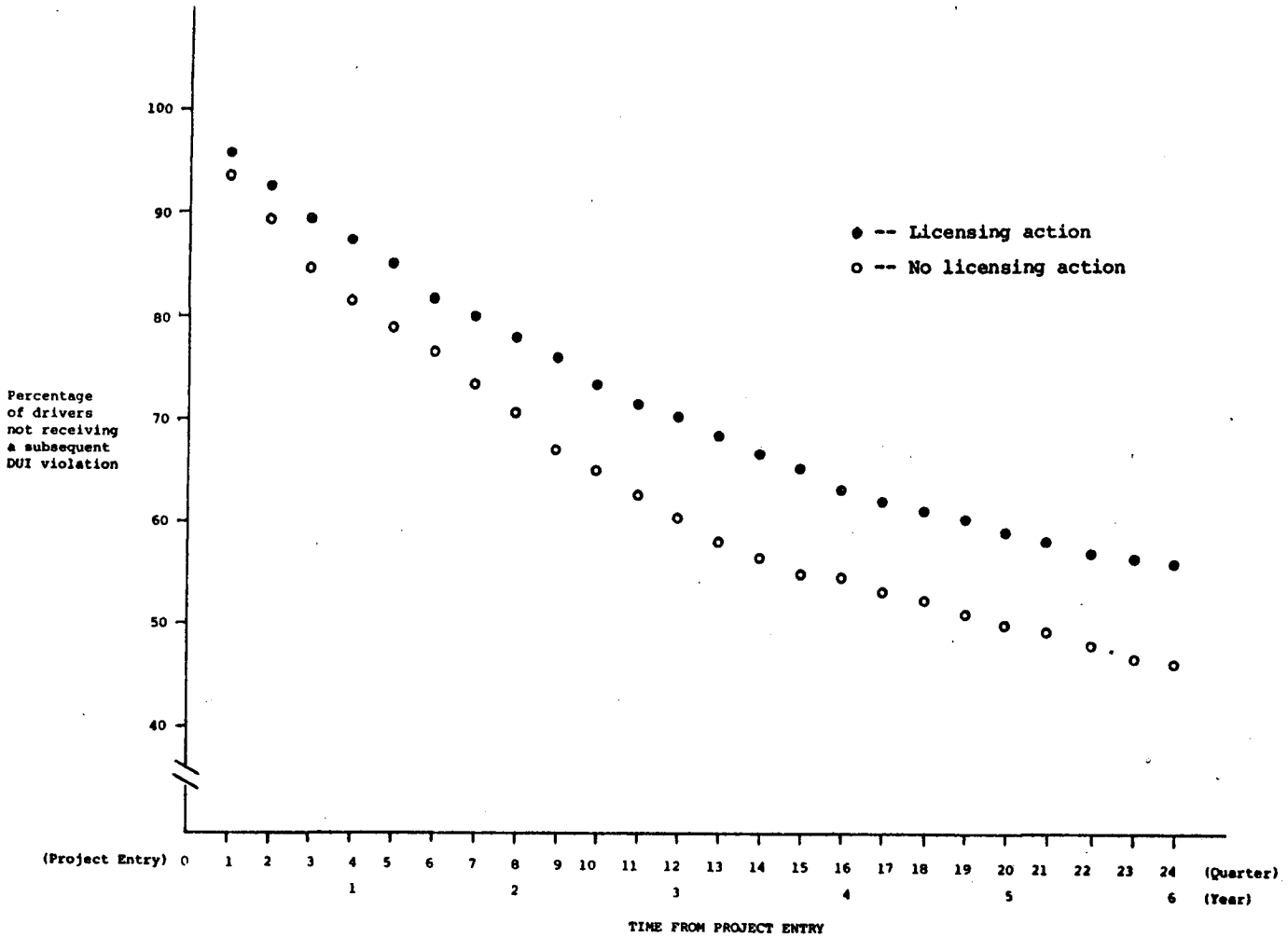

Figure 1 - Survival curve for multiple DUI offenders not receiving a subsequent DUI violation after project entry.

Table 8

Proportion of Multiple DUI Offenders Not Receiving a Subsequent DUI Violation After the Project Entry Licensing Action was Taken

Type of licensing action at project entry	Years from project entry					
	1	2	3	4	5	6
Licensing action	87.1	78.3	70.4	63.9	59.2	56.5
No licensing action	82.0	70.6	60.6	54.5	50.7	46.7
z Score	3.91	4.89	5.72	5.31	4.74	5.44
NOTE: z Score > 2.58 statistically significant at $p < .01$						

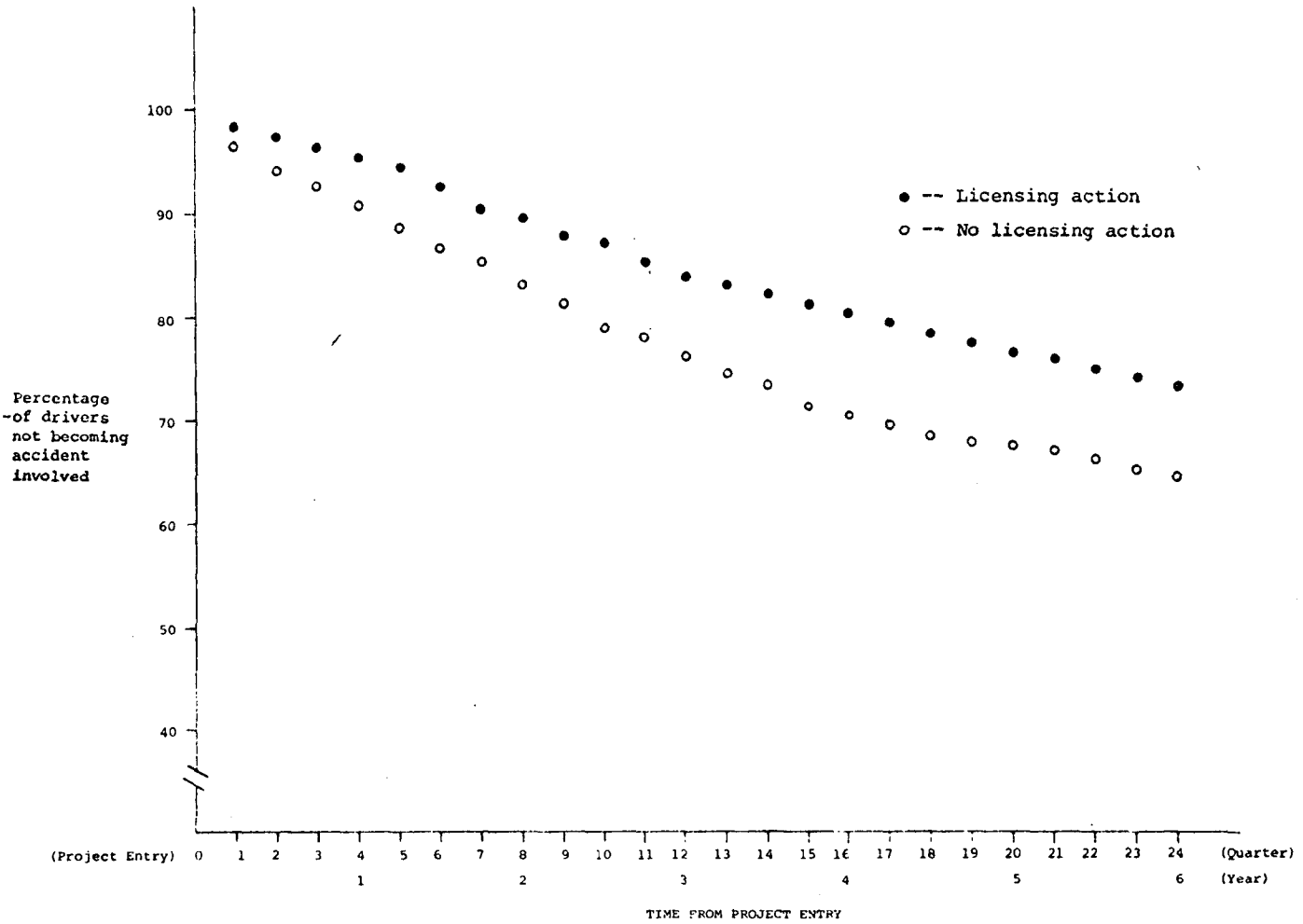

Figure 2 - Survival curve for multiple DUI offenders not becoming accident involved after project entry.

Table 9

Proportion of Multiple DUI Offenders Not Becoming Accident Involved After Project Entry

Type of licensing action at project entry	Years from project entry					
	1	2	3	4	5	6
Licensing action	95.5	89.9	84.3	80.6	76.9	73.5
No licensing action	90.3	83.0	76.1	70.6	67.5	64.2
z Score	5.59	5.60	5.65	6.74	5.82	5.52
NOTE: z Score > 2.58 statistically significant at $p < .01$						

pension or revocation. Although it is evident that many drivers drove during their term of license suspension/revocation, the positive effect due to the licensing action could emanate from reduced or more cautious driving. It seems reasonable to expect that many of the suspended or revoked drivers would drive more carefully or less often to avoid detection and further penalty. These patterns may have generalized beyond the license suspension/revocation period and accounted for the positive treatment effect associated with mandated licensing action. Another rationale for the existence of the treatment effect beyond the actual suspension or revocation period is the required annual interaction of a previously suspended or revoked driver with the Department of Motor Vehicles in accord with the state's financial responsibility statutes. If a driver, after receiving a mandatory suspension or revocation, wishes to obtain a valid operator's license, he must annually file proof of financial responsibility for a period of three years. It is conceivable that the continuation of the treatment effect might at least be reinforced by such a mandated interaction with a traffic safety oriented state governmental entity. In addition, when a driver allows his proof to lapse, the license is again suspended until the driver reestablishes proof of ability to respond. The additional control associated with the filing of proof process may cause a driver to operate his vehicle more safely. The fact that the dissipation of the treatment effect closely approximates the three year proof requirement period is notable.

The length of time treatment program participants and suspended/revoked drivers avoided subsequent accident or DUI involvement was also assessed through a series of survival rate analyses. The proportion of drivers not becoming accident involved during the 12 months subsequent to the entry conviction is plotted quarterly for the one-year follow-up period. It can be seen in Figure 3 that drivers receiving the licensing action in the comparison counties were most effective in avoiding accident involvement after their entry conviction. Further, the drivers participating in the alcohol abuse treatment program evidenced the poorest accident avoidance record. Those drivers in the demonstration counties who did <u>not</u> become involved in the program, thereby having their license suspended or revoked, produced an accident survival curve between those of the two groups previously described.

Analysis of each set of quarterly accident survival rates, summarized in Table 10, indicates statistically significant differences ($p < .05$) existed between drivers receiving the licensing action in the comparison counties and those participating in the treatment program in the four demonstration counties. Differences were also found during the first six months for drivers in the demonstration county who either participated in the treatment program or who received the licensing action. These differences ceased to exist during the latter six months of the follow-up period.

The accident survival curve for suspended/revoked drivers in comparison counties was related to that evidenced by all of the multiple DUI offenders in the demonstration counties (program participants, nonparticipants, and dropouts) to assess the overall impact of the new sentencing strategy. It can be seen in Figure 4 that the accident survival curves are even more divergent than those reported earlier, again favoring the comparison county drivers. As reported in Table 10, each of the four quarterly survival proportions is statistically significant ($p < .05$).

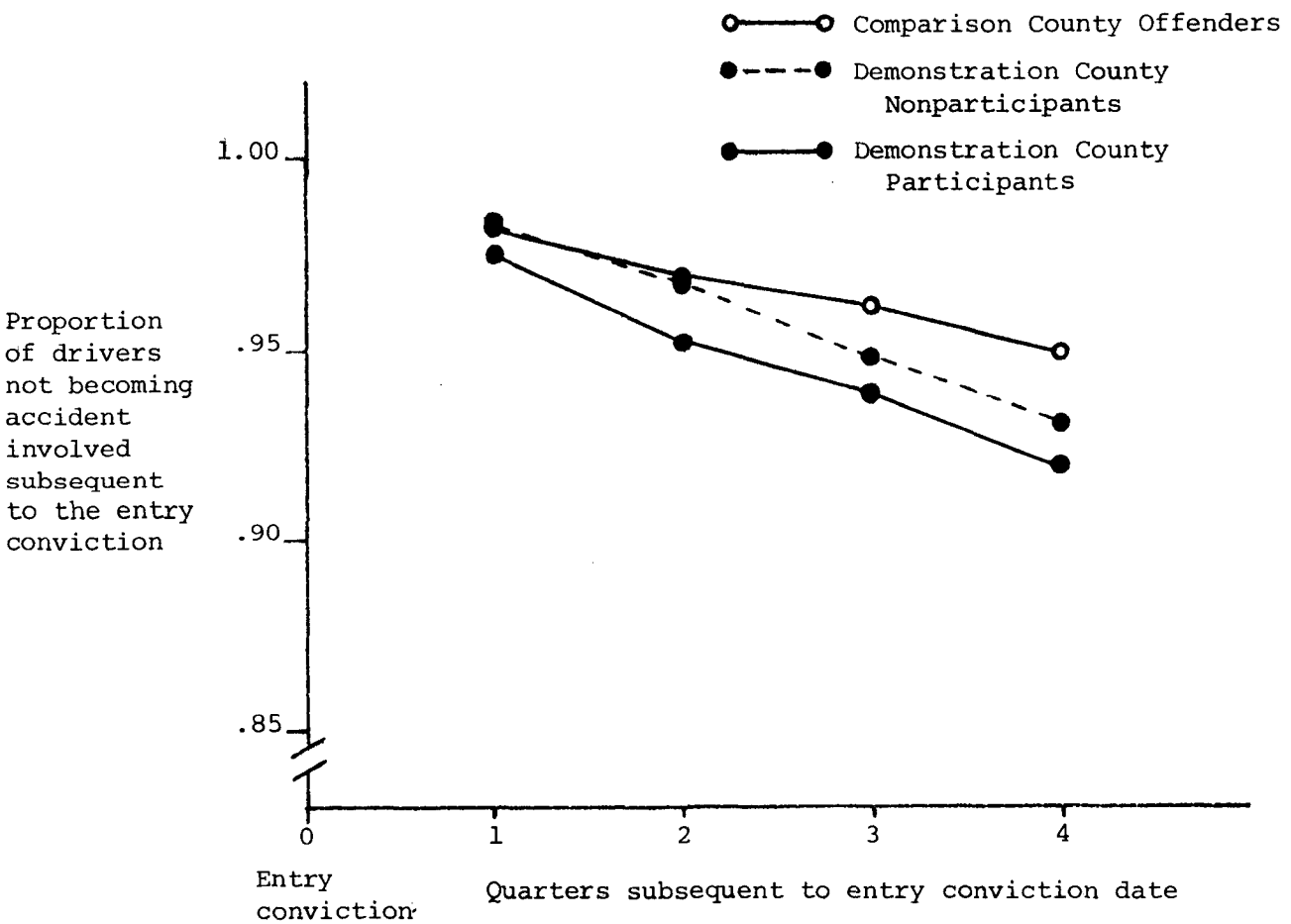

Figure 3 - Accident survival curves for multiple DUI offenders in demonstration (participant and nonparticipant) and comparison counties.

Table 10

Proportion of Multiple DUI Offenders Not Receiving an Accident Involvement Subsequent to Their Entry Conviction

Group Comparisons		Quarters From Entry Conviction			
		1	2	3	4
Demonstration county program participants		.9747	.9537	.9385	.9190
Demonstration county program nonparticipants		.9836	.9676	.9480	.9308
	z score	2.0974	2.4521	1.3899	1.5294
Demonstration county program participants		.9747	.9537	.9385	.9190
Comparison county offenders		.9812	.9714	.9631	.9495
	z score	1.5426	3.3854	4.1537	4.5040
Demonstration county offenders		.9603	.9416	.9252	.9071
Comparison county offenders		.9812	.9714	.9631	.9495
	z score	5.0543	6.4543	6.7886	6.8084

NOTE: z score $\geq$ 1.96 is statistically significant at $p < .05$.

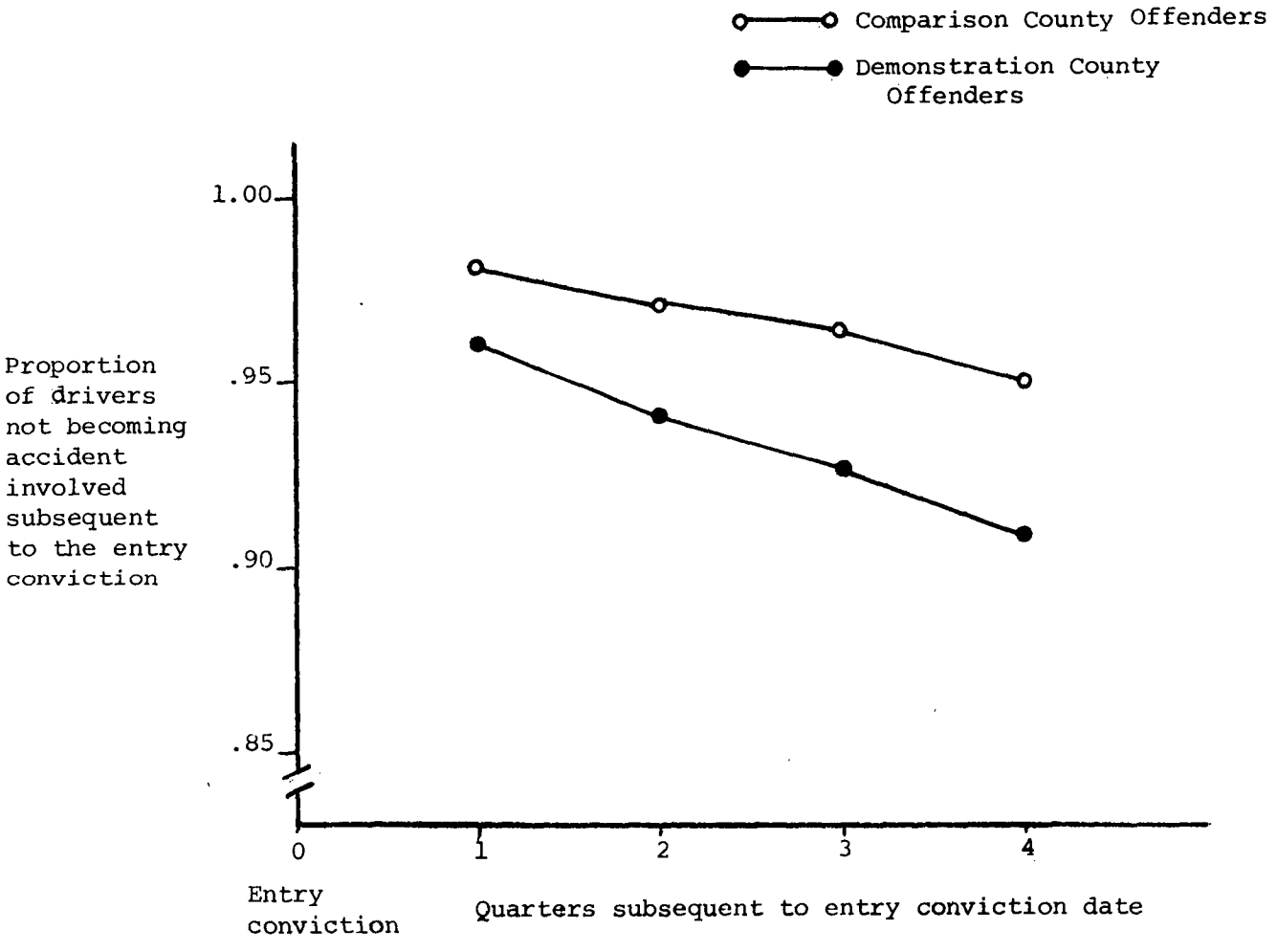

Figure 4 - Accident survival curves for multiple DUI offenders in the demonstration and comparison counties.

Analyses were also conducted of drivers' DUI reinvolvement subsequent to their entry conviction. It can be seen in Table 11 that only four statistically significant ($p < .05$) differences were found between any of survival rate comparisons. The results again favored the suspended or revoked drivers in the comparison counties as opposed to those drivers participating in the treatment program. The survival curves for each of these groups are shown in Figure 5.

It is unfortunate that survival rates could not be investigated beyond the 12-month follow-up period. The duration of the follow-up includes only the time span while the driver was in the treatment program or under licensing control. An investigation of traffic safety impact after the driver has completed these obligations would, of course, be of interest.

Table 11

Proportion of Multiple DUI Offenders Not Receiving a DUI Violation Subsequent to Their Entry Conviction

Group Comparisons		Quarters From Entry Conviction			
		1	2	3	4
Demonstration county program participants		.9572	.9249	.8934	.8693
Demonstration county program nonparticipants		.9647	.9348	.9094	.8745
	z score	1.2960	1.3147	1.8189	0.5081
Demonstration county program participants		.9572	.9249	.8934	.8693
Comparison county offenders		.9714	.9415	.9129	.8938
	z score	2.7609	2.4030	2.3888	2.7583
Demonstration county offenders		.9633	.9340	.9036	.8801
Comparison county offenders		.9714	.9415	.9129	.8938
	z score	1.8743	1.2853	1.3462	1.8226

NOTE: z score ≥ 1.96 is statistically significant at $p < .05$.

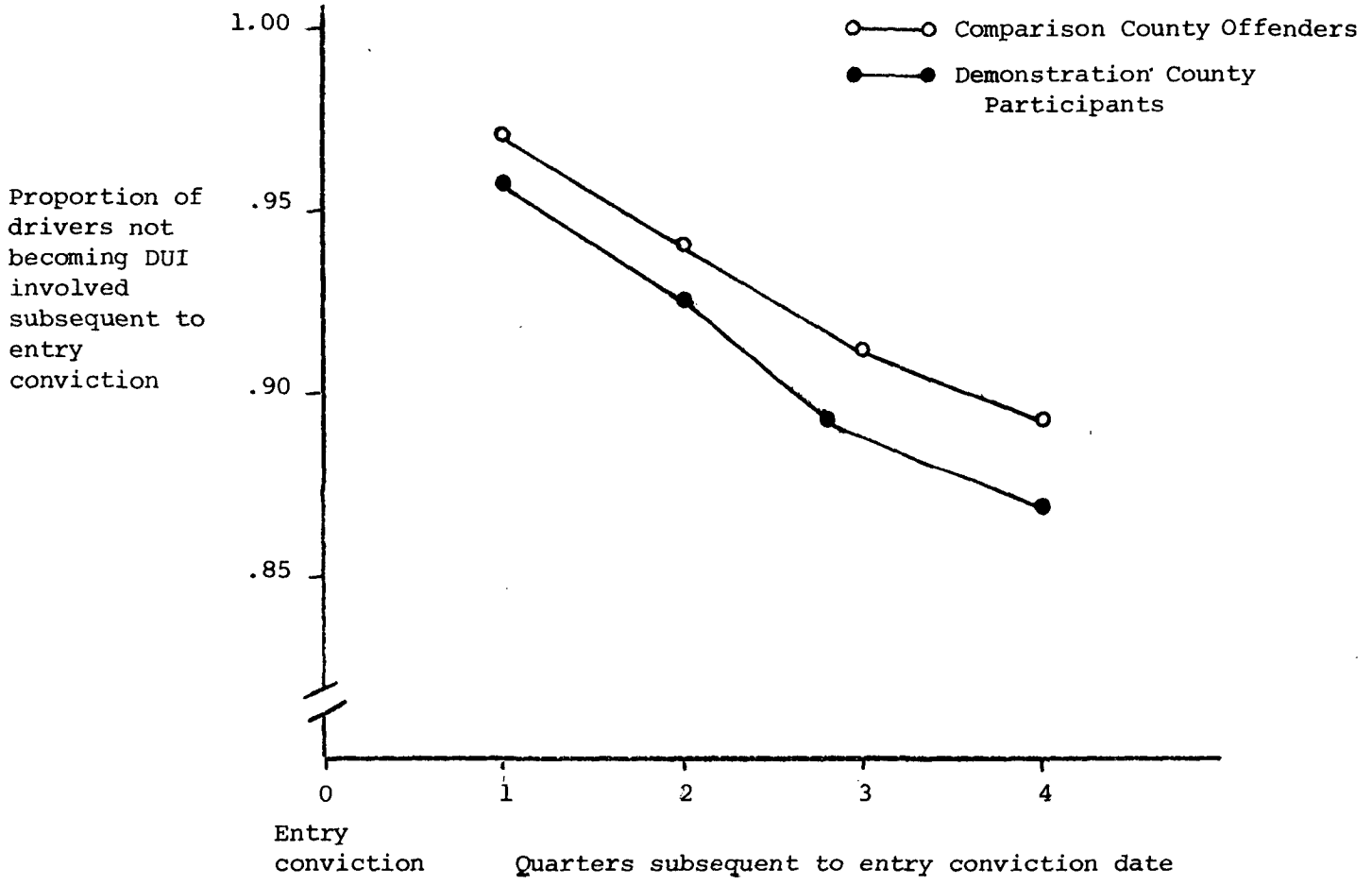

Figure 5 - DUI survival curves for multiple DUI offenders in demonstration (participants only) and the comparison counties.

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RSS-DMV-50-4/79-REPRODUCED BY DMV, SACRAMENTO, CA.

IMPLEMENTATION OF A LARGE SCALE REHABILITATION PROGRAM EVALUATION

A Paper Presented at the 1979
National Council on Alcoholism Forum
Washington, DC

by

David L. Struckman-Johnson
and
Vernon S. Ellingstad

Today I will be speaking on the evaluation of a large scale rehabilitation program. My remarks will be based on our experience with the evaluation of the National Highway Traffic Safety Administration's Short Term Rehabilitation Study which will be refered to subsequently as the STR Study. I will discuss some of the problems which we encountered (both anticipated and unanticipated) and our attempts to solve these problems. I will also suggest some solutions to the problems that we did not, but perhaps should have, tried. Finally, I will offer recommendations concerning the avoidance of many of the problems we encountered which should be of value to anyone attempting such an evaluation in the future. Before the discussion of evaluation problems, it would probably be useful to briefly review the STR study to provide a context for my comments.

THE STUDY

The STR Study was an outgrowth of the experiences of the 35 National Highway Traffic Safety Administration sponsored Alcohol Safety Action Projects, usually referred to as ASAP's, which were operational for varying periods of time between 1971 and 1976. Each of these projects was designed to operate and to evaluate specific rehabilitation countermeasure programs tailored to the needs of problem drinker drivers involuntarily referred by the courts subsequent to arrest and conviction for the offense of Driving While Intoxicated. The intended objective of these rehabilitation efforts was to modify the behavior of problem drinker drivers in order to reduce their risk of subsequent alcohol related motor vehicle accidents. The implicit definition of a successful rehabilitation countermeasure was one which would decrease the proportion of Driving While Intoxicated recidivists among the clients who were exposed to that treatment program. Unfortunately, the collective experience of the 35 ASAP's did not provide for a definative assessment of the effectiveness of ASAP rehabilitation modalities (1,2). Several important factors prevented clear tests of the viability of this type of alcohol rehabilitation effort. First, the prerequisite conditions for sound experimental design were not present in most of the ASAP rehabilitation systems in that adequate no-treatment control groups were not available to support analyses of treatment effectiveness. Second, the treatment modalities employed by many of the ASAP's were selected from alternative treatment programs which already existed in the ASAP community, and little effort expended was expended to match the requirements of the involuntary court referral systems dictated by the ASAP projects. Finally, the criterion of success used to assess the effectiveness of alternative rehabilitation modalities was generally

restricted to a measure of accident or rearrest recidivism. While these measures are important traffic safety criteria, they are subject to a number of measurement problems which tend to restrict their usefulness as outcome measures. Further, recidivism must at best be considered only one of many client behaviors which typical alcohol treatment countermeasures are intended to modify.

An initial attempt to configure a large scale rehabilitation study within the ASAP's was made in 1973. The planned study was organized around a relatively new alcohol treatment program called Power Motivation Training, or PMT, which had been developed by researchers at McBer and Company (3,4). PMT represented a short term treatment modality which did not depend on highly trained professional therapists, and which could be readily implemented within the ASAP rehabilitation systems. This study would also have followed an explicit experimental design calling for the random assignment of DWI clients at five ASAP sites to either PMT or a no-treatment control group and would have provided for extensive follow-up of clients subsequent to treatment. Although PMT instructors were trained by McBer and Company at each of the five sites, the planned effort was ultimately not implemented because of problems in the coordination of the program (5).

During 1974, the National Highway Traffic Safety Administration expended considerable effort to develop a revised and expanded experimental design which became known as the Short Term Rehabilitation, or STR, Study. The scope of the study was expanded to include rehabilitation activity at 11 rather than 5 of the ASAP's, and the number of treatment modalities to be evaluated was increased. Treatment modalities selected for inclusion in the evaluation were: alcohol safety schools, non-PMT group therapies, and individual therapy as well as PMT. Explicit experimental designs which employed procedures for random assignment of DWI clients to treatment or control conditions were developed at each of the 11 ASAP's. Extensive therapist training was provided by McBer and Company to establish a cadre of therapists competent to provide PMT as a rehabilitation alternative at eight of the sites (5). A central evaluation component for the study was established through a contract between the National Highway Traffic Safety Administration and the University of South Dakota Human Factors Laboratory. As a result of these efforts, the Short Term Rehabilitation Study was initiated in early 1975.

The objective of the STR study was to provide an empirical demonstration of the effectiveness of short duration, court supervised rehabilitation programs for DWI offenders. A critical requirement in the accomplishment of

that objective was the development of procedures to accomplish random assignment of clients to treatment and no-treatment conditions at each site. The assignment of STR Study clients to treatment alternatives was accomplished as a three stage process. At the first stage, the diagnostic procedures of the individual site were allowed to operate and only those individuals who were classified as "mid-range" problem drinkers were selected for inclusion in the study. This selection decision was based on the assumption that the rehabilitation alternatives included in the design of the STR Study were not suitable for either non-problem drinkers or for individuals with extremely serious or advanced drinking problems who, at least in some cases, might be classified as alcoholics. Two limited exceptions to this procedure were permitted in the cases of the Fairfax County, Virginia and New Orleans, Louisiana STR designs, each of which included a sub-design explicitly tailored for serious problem drinkers. Actual diagnostic classifications were based on the presentence investigation procedures developed as part of the ASAP countermeasure system at each project.

The second stage of the general STR model also involved a reduction in the size of the STR client pool through selection procedures designed to eliminate individuals for whom participation was considered inappropriate. The chief factors leading to the exclusion of potential clients at this stage included observation of physical or emotional problems which were considered serious enough to disqualify the individual from participation in the particular STR treatment modalities employed by the site. In some instances individuals could disqualify themselves at this stage by refusing to participate in the study. In general, however, court incentives for participation were sufficient to minimize this source of attrition.

Assignment of individuals to treatment alternatives occurred at the final stage of the STR design. In each of the 11 STR sites true random assignment procedures were followed in order to assign clients among the particular set of treatment alternatives employed by that site. Specific assignment procedures were developed within each site and ranged from the use of computer generated assignment procedures to fixed sequence assignment procedures within which an individual's assignment was dependent exclusively on his/her serial order of appearance at the project.

As a result of these procedures a total of 3663 clients were randomly assigned to treatment or control conditions with 2462 clients exposed to various short term rehabilitation modalities and 1201 clients assigned to either no-treatment control groups or minimum exposure

conditions. The requirement for substitution of minimum exposure conditions in place of no-treatment control assignments affected 4 of the 11 sites. In 2 of the 4 sites affected, the minimum exposure condition consisted of a brief meeting at which literature was handed out. In the remaining two minimum exposure sites, 3 to 4 hours of education were required.

In addition to the implementation of explicit experimental designs and assignment of clients to treatment and no-treatment conditions, the 11 sites also assumed significant responsibilities for the collection of a variety of data upon which the evaluation of treatment effectiveness was based. A battery of data collection instruments, collectively referred to as the Life Activities Inventory, or LAI, was assembled by the University of South Dakota under its contract to the National Highway Traffic Safety Administration (6).

Briefly, data collection included administration of interview and questionnaire instruments in a face-to-face contact with site data collection personnel, as well as conduct of a police and department of motor vehicle records check. These data collection procedures were followed at the time of initial contact with a client and were scheduled to be repeated 6 months subsequent to assignment, and again at both 12 and 18 months from assignment to an STR Study condition (either treatment or no-treatment assignment). Two sites (South Dakota and Tampa, Florida) were exceptions to this procedure in that data collection terminated after 12 months of follow-up. The LAI documents were then forwarded to the central evaluation contractor for entry into a master computer file which was designed to support management information reports as well as program and project level evaluations of treatment effectiveness. A substantial number of validity checks were incorporated in the STR data system and continuous liaison was maintained between the central evaluation contractor, site data collection personnel, and the National Highway Traffic Safety Administration.

With this brief summary of the STR Study as as background, I will now move to a discussion of some of the problems that were encountered in the course of implementing the study and describe some actual and potential solutions to these problems.

THE PROBLEMS AND THE SOLUTIONS

EXPERIMENTAL DESIGN

A major problem in the evaluation of any rehabilitation program, and the STR Study was no exception, is acquiring acceptance and/or approval for the use of random assignment to treatment and the use of no-treatment control groups. This problem fortunately was solved in the case of the STR study. Each of the STR sites was able to implement an experimental design which involved the use of random assignment and a no-treatment control condition or at least a minimum exposure condition. The serious problem drinker sub-design in the Fairfax County, Virginia site which did not include a control group was the single exception to this procedure. It should be noted, however, that the design did employ random assignment and that the mid-range problem drinker design at the site included both random assignment and a control group.

One clear explanation for the acceptance of control groups and random assignment at the STR Study sites was the excellent working relationship that evaluators had developed with court and treatment personnel at the STR sites during the initial three years of the ASAP projects. It is likely that had court and rehabilitation personnel not been exposed to evaluation for some time prior to the initiation of the STR Study, resistance to control groups would have been much greater.

A second factor which also clearly contributed to the the implementation of random assignment, control group designs was the determination of a number of National Highway Traffic Safety Administration personnel to develop a rehabilition study which could be adequately evaluated. Without their efforts, it is unlikely that there would have been an STR Study evaluation.

Another factor responsible specifically for the acceptance of control or minimum exposure conditions, and one probably more relevant to future rehabilitation program evaluations, was "compromise". This compromise took a number of forms, but the end result was always random assignment to a control or minimum exposure condition, rather than an non-experimental design. At one site, for example, the court system would not accept assignment of clients to a control condition without their prior approval. Clients were therefore asked to volunteer to participate in the STR Study after they were informed that their participation could involve assignment to a no-treatment control condition. Although this procedure limited

generalization of results for that site to volunteers, it still resulted in an experimental design which could be adequately evaluated.

A final solution to the problem of resistance to control groups concerns the ethics of assigning someone to an unproven rehabilitation modality. Traditionally, it has been considered unethical to withhold treatment from individuals on the assumption that it might help, and at least it couldn't hurt. The STR Study has produced some reasonably strong scientific evidence that certain rehabilition programs can, in fact, increase the participant's subsequent probability of a Driving While Intoxicated arrest (7). This result, in our minds at least, essentially reverses the ethics of assigning an individual to an unproven rehabilitation modality.

IMPLEMENTATION OF RANDOM ASSIGNMENT

An area which caused us a great deal of concern throughout the course of the STR Study was the implementation of random assignment procedures at each of the 11 study site. This is not to say that random assignment was a continuous problem, but rather indicates the importance of random assignment to the success of the STR evaluation. On the other hand, there were some problems with random assignment at some of the STR Sites. Simply stated, there were some individuals associated with diagnosis or treatment who sabotaged random assignment procedures. I will not take the time to describe these problems now since random assignment within the STR Study was described in great detail in one of the papers in this mornings session (8). I will, however, recommend that any future rehabilitation program evaluators designing a random assignment procedure should configure the procedure such that anyone involved in the diagnosis or treatment of clients is NOT involved in the assignment of clients to treatment and control groups.

MEASUREMENT

One of the first problems we faced in the design of the STR Study evaluation was the measurement of treatment outcome. An obvious choice for criteria were traffic offense and accident rates subsequent to STR treatment. Although these measures are, of course, useful and appropriate in the traffic safety context of the study, they provided less information than we felt was necessary for an adequate evaluation. First, it must be realized that these criteria can indicate failure of a treatment modality, but

not success. A person arrested for Driving While Intoxicated subsequent to a treatment program can legitimately be considered to have been less than totally rehabilitated. On the other hand, a person who has not been arrested subsequent to a rehabilitation program can not necessarily be considered to have been completely rehabilitated. He or she may have been engaging in a significant amount of drunk driving behavior but simply have been lucky enough not to get caught. Further, most if not all of the rehabilitation modalities employed in the STR Study had objectives which were much broader that preventing arrest for Driving While Intoxicated or alcohol related crash involvement.

What we believed was necessary were criteria which could reflect changes in an individual's life status in a number of areas. This need was one of the most significant implementation problems we were to face. A review of the literature revealed that, although there were a variety of measurement instruments available to assess an individual's life status at a given point in time, there were no instruments available which were particularly amenable to measuring change across time. We were therefore faced with creating our own instrument, which we eventually did. In the course of designing our own instrument, we became aware of a similar instrument which had been developed by the Fort Logan Mental Health Center in Denver, Colorado. In the final analysis, both the instrument developed by the Human Factors Laboratory and the instrument developed by the Fort Logan Mental Health Center were employed as criteria in the STR Study.

The availability of instrumentation designed for the STR Study and the Fort Logan Mental Health Center instrumentation provide at least a partial solution to the measurement problem which will be faced in any future rehabilitation evaluations. This solution, however, can not be considered ultimate. Scoring of the instrumentation from both sources is time consuming and expensive. Additionally, the instrument developed by the Human Factors Laboratory, while adequate for the STR Study, can be considerably improved by future development. Fortunately, there is additional development work on the instrument currently in progress at the National Highway Traffic Safety Administration funded Comprehensive DUI Offender Treatment Project in Sacramento, California.

DATA COLLECTION

The actual process of data collection for the STR Study evaluation is the final problem area which I will address

today. While the concept of a central evaluator for a multiple project study is one which I believe, in the long run, has advantages over separate evaluators for each project, these advantages come at some cost. I think it is fair to say that the majority of the problems we encountered in the area of data collection were the result of the physical distance between the points at which data were collected and the point at which the data were computerized and analyzed. The 11 STR Sites where data were initially collected were spread from New Hampshire to Arizona and South Dakota to Texas. Data from all STR Sites were funneled to Vermillion, South Dakota where they were computerized, stored, and finally analyzed.

There were two areas in which distance related problems were anticipated. The first of these was the initial and continuing training of data collection personnel at each of the STR Sites. Our approach to this problem was the conduct of a series of three data collection personnel training sessions throughout the course of the study. One of these training seminars was held shortly before the initiation of the project and the remaining two sessions which occurred during the course of the project served as refresher courses for previously employed personnel and initial training for new personnel. Generally, these seminars achieved their objectives. There was a significant amount of communication between site data collection personnel and the central evaluator in addition to these seminars, however. I see no real solution to this problem, but do recommend that anyone faced with a geographic separation between data collection personnel and evaluation personnel give considerable thought to the repercussions.

A second distance related data collection problem concerned the correction of errors. It is inevitable that when large volumes of data are collected, there will be errors in that data. We anticipated correctly that the STR Study, which involved the collection of up to 8000 columns of data on 3663 people, would be no exception. As a result of this anticipated non-zero error rate, procedures were built into our data collection computer programs to check, to the greatest extent possible, virtually every piece of information we received. The same computer programs printed lists of the errors which had been identified. These lists were mailed to the respective sites for corrections and finally returned to the central evaluator for corrections to the computer files. This feedback procedure not only allowed for correction of errors, but made data collection personnel aware of mistakes so that they could be avoided in the future. We feel that our error feedback procedure was generally quite successful. There were, of course, a few instances in which no amount of communication was successful

in reducing errors in incoming data, but they were relatively isolated. We would certainly recommend this procedure.

A third data collection problem at least partially associated with the geographic separation of the data collection personnel and the central evaluator arose in the course of the study. In the interest of administrative simplicity, data collection personnel were hired and supervised by each of the individual STR Study sites. Although it was not originally anticipated that this would be a problem, in the final analysis it was. There were a small number of data collection personnel, that in the opinion of the central evaluator, should have been asked to seek other employment, but were not. The reason for this situation is not clear. A potential solution, however, is relatively straightforward. It seems reasonable to recommend that the control of data collection personnel in rehabilitation program evaluations be placed with the evaluator. In defense of the majority of STR data collection personnel, I should add that the problem I have just described was the result of very few of the total group of data collection personnel.

In conclusion, I feel obligated to point out that the implementation problems I have discussed today by no means represent the total constellation of difficulties we encountered. On a more optimistic note, I can assure you that the implementation of a good large scale rehabilitation program evaluatation is entirely possible. A commitment to quality evaluation is required by all concerned, but it is possible.

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The Application of "State of the Art" Intervention and Evaluation Technology: Prospects for the Future of the Alcohol and Traffic Safety Countermeasures Approach

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Running head: ASAP Evaluation and Intervention Technology

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Abstract

This paper will begin by examining both the philosophical and empirical developments which have occurred within the ASAP education and rehabilitation programs over the past decade. A number of regrettable, yet not unpredictable failures, both of the ASAP intervention approaches and of the methods that have been used to evaluate them, will be examined in order to provide a developmental context to the proposal that will follow. It will be suggested not that the ASAP approach has succeeded or failed but that may well have succeeded and failed. The most pressing problem currently confronting the ASAP system is to understand its successes and failures. Unfortunately, the evaluation technologies which have been applied to the system up to the present time have not been capable of sensitive analysis of the system. It will be suggested that recent trends in theory and practice of both alcohol abuse treatment and program process and outcome evaluation have much to offer the ASAP countermeasures approach and these emerging concepts will be detailed. Following this expose, a set of innovative evaluation and intervention technologies will be reviewed and it will be argued that these procedures provide the best evaluation and intervention options currently available for future developments within the ASAP system.

The Application of "State of the Art" Intervention and Evaluation Technology: Prospects for the Future of the Alcohol and Traffic Safety Countermeasures Approach

In June 1970, the Office of Alcohol Countermeasures, National Highway Traffic Safety Administration (NHTSA) of the Department of Transportation initiated a series of programs known as Alcohol Safety Action Projects (ASAPs) to coordinate the activities of existing local agencies such as the police, courts, legislature, and alcohol treatment facilities in an intensive effort to "get the drinking driver off the highway." Over the past several years, increasing numbers of state and local government agencies have developed programs modeled after these early federal efforts, or have developed other equally ambitious programs to attempt to manage the drunken driver. In fact, at the present time, every state in the Union has instituted at least some ASAP style programming.

The increasing commitment to ASAP developments at the state and local levels has not brought fourth a united ASAP system. Rather, throughout the country there has developed an array of ASAP efforts which differ from one another in both philosophy and methodology. In some programs, for example, alcohol education efforts are conducted in accordance with an efficiency philosophy which recommends the use of a large lecture format involving only a minimal personal relevance focus. Other programs, on the other hand, have developed educational sequences which are conducted within a small group structure designed to foster the personal relevance of the material being presented. In some programs, the treatment procedures employed are based on the traditional self-help models

espoused by Alcoholics Anonymous. In other programs, newly formulated treatment packages such as the Power Motivation Training (PMT) sequence of the McBer Company (Boyatzis, 1976; Cutter, McClelland, Boyatzis & Blancy, 1975) have been introduced in an effort to increase the impact of alcohol treatment efforts in changing the drinking patterns and parameters of DWI offenders (see Ellingstad & Struckman-Johnson, 1977). It seems, in fact, that diversity in philosophy and methodology has been the rule rather than the exception in both the existing and the emerging programs. Differences in local ordinances, differences in the attitudes of the local judiciary and the police, differences in the existence and in the quality of educational and treatment agencies and differences in regional politics either produce or magnify these philosophical and methodological differences so that the ASAP "system" in no way can be considered homogeneous. As Scrimgeour (1975) has argued, "there is too much vitality and individualism out there for conformity to conquer" (p. 17). (See also, Eagleston, Rittenhouse, Towle, & Wiegand, 1974). Yet, this very diversity has held great promise for the conduct of comparative intervention outcome evaluation research designed to determine which philosophies and which methodologies are most effective in the management of drunken drivers as a class and as individuals. Unfortunately, this promise has not been well realized for even today there is a general lack of well controlled studies addressing the overall effectiveness of the ASAP endeavors, let alone comparative studies reflecting differential treatment outcome effectiveness.

The general lack of well controlled ASAP evaluation studies, however, should not be construed as evidence that reasonably sophisticated

evaluation research has not been conducted to address the existing ASAP systems. Certainly, studies such as the Short Term Rehabilitation (STR) program (see Ellingstad & Struckman-Johnson, 1977) have been potentially exciting. Yet, too much of the time the potential inherent in such research has proved to be unrealized because of inadequate clinically based empirical justification for the introduction of a particular clinical intervention (as was the case with the introduction of Power Motivation Training in the STR program), or because of the inherent difficulty involved in controlling such large scale research endeavors. Paradoxically, I believe that the STR program proved particularly valuable not because it indicated significant improvements for subjects participating in the active treatment conditions over those in the control (no treatment) conditions. Rather, it succeeded because the methodology employed in the study helped change the focus of the ASAP evaluation effort from evaluation based almost solely on traffic safety criteria to a broader focus involving an array of life change criteria.

At the present time, the most pressing problem confronting the ASAP "system" is to understand its successes and failures. Certainly, there has been a commitment at the federal level to examine the ASAP efforts and NHTSA has supported a number of studies seeking to evaluate the impact of ASAP programming. These studies, by and large, have been longitudinal in nature and have sought to measure indices such as changes in knowledge about alcohol, attitude changes, and changes in crash and recidivism rate (in terms of rearrest and conviction for DWI). Overall, the findings of these studies suggest, despite some evidence to the contrary (see Zador, 1976, 1977), that the introduction of ASAP programs

into communities has been paralleled by a small yet significant reduction in the number of fatal (night-time) crashes and the number of people driving with high blood alcohol concentrations in those communities (U.S. DOT, 1972a, 1972b, 1974). These findings generally have been interpreted as largely being the product of the increased deterrence to drunk driving which the introduction of these programs has communicated to social drinkers (see Levy, Voas, Johnson & Klein, 1978). As for the advantages gained by DWI offenders who participate in the various ASAP programs, the evidence suggests: (a) That alcohol education does increase the level of knowledge regarding alcohol of DWI offenders. (b) That although ASAP involvement does not consistently change the DWI offender's attitudes regarding alcohol use and alcoholism (Israelstam & Lambert, 1974), social drinkers exposed to nearly every kind of ASAP educational and/or therapeutic procedure exhibit lower rearrest records than social drinkers not so exposed (Nichols, Weinstein, Ellingstad, & Struckman-Johnson, 1978). However, it also appears that there is no clear support for the effectiveness of ASAP programming efforts when recidivism and crash data from problem drinking populations are evaluated (see for example, Goldstein, 1973; Nichols et al., 1978). Further, evidence from the very small number of studies which have explored the effects of ASAP programming by monitoring other life status variables suggests, at least for moderate problem drinkers, that these variables are not influenced significantly by ASAP involvement. Finally, to such findings we must also add the evidence that all DWI offenders, whether treated or not, tend to show better subsequent driving records following a DWI conviction than they showed prior to that conviction (Hagen, 1977). We have yet to

address adequately the overall intermediate and relatively long-term effects of various types of ASAP based programming on the drinking, driving, and life health of persons exposed to such programming.

The problems faced by investigators undertaking research on ASAP program effectiveness are similar to those found throughout much of the literature in program evaluation generally. Problems such as (a) inagequate sampling procedures, (b) lack of appropriate control groups, (c) the use of insensitive and/or unreliable measuring instruments, (d) the lack of pretreatment baseline data, (e) the failure to relate sample variations to outcome variations, (f) the loss of subjects to follow up, and (g) the lack of appropriate criterion measures, appear epidemic (see for example, Brown, Zelhart, & Schurr, 1975; Nichols & Reis, 1974; and Zylman, 1975). Crawford and Chalupsky (1977) have eloquently stated the position regarding treatment outcome evaluation studies in the alcohol literature when they remarked: "The problem is not that the field lacks an occasional investigation adequately coping with one or more aspects of evaluation problems, but rather that the median level of effort remains at such a relatively unsophisticated level that most studies are scientifically and practically unproductive" (p. 74).

While recognizing all the above problems, I consider that there are two related difficulties that have particularly plagued the ASAP evaluation endeavors. The first involves what I consider to be the general failure to undertake program evaluation based on the most sensitive and most appropriate criterion measures. The second difficulty is in large part a product of the first, and involves the loss of control which is all too often an element in large scale multi-program treatment outcome

evaluation studies. In addressing these particular difficulties, of course, one cannot but reflect on the advantages which retrospection provides when we look at the research of those who have broken ground before us. It must be recognized that from the inception of the ASAP countermeasures approach, the philosophy upon which the entire process was based implied the need for a broad brush social engineering strategy, not an individualized clinical intervention strategy. Hence, the procedures that were used both to conduct the interventions and to evaluate their effectiveness were logically and directly related to the social goals being sought. Nevertheless, in reviewing both the ASAP successes and failures over the past decade, as well as the clinical developments in the alcoholism field generally, it becomes clear that the philosophical basis of the ASAP approach and the procedures which have been employed within it, require most serious scrutiny at the present time.

The primary criterion measures which have been employed in evaluating the various ASAP education and rehabilitation programs have been measures based on post-program motor vehicle driving behavior (often measured in terms of crash and arrest statistics within the community in which the ASAP program is introduced). Even in the increasing numbers of studies in which the ASAP evaluation efforts have examined measures beyond those of driving behavior (see for example, Ellingstad & Struckman-Johnson, 1977; and Saunders & Wyckoff, 1977), poor control or mixed technology during follow-up has led to the focus being returned to measures derived from global crash statistics and from the subjects' driving records. Yet, there now exists compelling evidence which strongly suggests that even if we were to get the "drunk" driver off the highway, the

achievement of such a goal may not bring with it a marked drop in the rate of serious alcohol related crashes. Data collected in the mid 1960's have indicated that the majority of alcohol related accidents are produced by non-problem drinkers (see for example, Allsop, 1966; Borkenstein, Crowther, Shumate, Ziel, & Zylman, 1964). Furthermore, in those instances where problem drinking does exist, such drinking is only one of a number of characteristics found among high-risk drivers (see for example, the studies by Clay, 1977; Filkins, Clark, Rosenblatt, Carlson, Kerlin, & Manson, 1970; Selzer, Payne, Gifford, & Kelley, 1963; and the review by Zylman, 1975). Perhaps most relevant to the present discussion, however, is that data based on post-program crash statistics and DWI recidivism rates are relatively poor (insensitive) measures of post ASAP program changes in the drinking practices of DWI offenders subjected to such programs. Firstly, such measures are so infrequent in their occurrence (see Beitul, Sharp, & Glauz, 1975; and Nichols & Reiss, 1974) that their employment necessitates the use of exceptionally large samples if statistically significant differences between treatment and no treatment conditions are to be established. Secondly, there are particular problems in controlling for the risk of exposure to these indices, for at the present time we lack specific information on the number and type of intervening variables that link the ASAP program interventions to changes in crash and DWI recidivism statistics. Moreover, it is clear that the intervention strategies being utilized within many ASAP programs are not being used merely to get the "drunk" driver off the road. They are also aimed at modifying the drinking practices of the DWI offender so that his/her overall life health will be improved.

Thus, for many programs, the aim of the ASAP intervention has extended far beyond that of modifying the drinking-driving practices of the DWI offender. Such programs are now also seeking to serve a primary and/or secondary prevention role for individuals who are at risk of developing a serious alcohol problem. To concentrate on measuring a low frequency indirect estimate of a limited segment of the life style of a DWI offender (i.e., his/her detection for drunk-driving), is to fail to address a myriad of other more appropriate measures of functioning and fulfillment. Finally, it may be argued that there exists a large gap (both temporally and conceptually) between treatment or education process and outcome measures generally and the existence or otherwise of subsequent alcohol related driving offenses. Thus, the use of crash involvement and recidivism data is of little assistance to an ASAP program manager who is concerned with improving program operation.

The other major flaw which appears repeatedly in, and is typical of too much of the ASAP evaluation literature, is that of questionable, and in many instances, poor control. Much of the time this lack of adequate control is a consequence of large scale multi-programmed research. Towle (1974) commented on the problems which he encountered in his large multisite ASAP evaluation study and noted that his research was hampered by a lack of cooperation and coordination when he attempted to collect and pool data from multiple sites into one overall evaluation. Even in those rather sophisticated ASAP evaluation studies which have sought to employ more sensitive behavioral indicators of program impact (see for example, Ellingstad & Struckman-Johnson, 1977; and Saunders & Wyckoff, 1977), the "large scale study mentality" has prevailed because

of the concurrent need to obtain driving record-based data. Unfortunately, the lack of control occasioned by the lack of close adherence to what was otherwise an appropriate technology within the STR series has been a major flaw that I believe could have been avoided if the project had not taken on the proportions of an epidemiological investigation.

Obviously, there are some important benefits to be derived from conducting large scale studies. The most basic benefit of such research is that large sample sizes provide for increased confidence when generalizfrom sample data to the population at large. However, if nothing else, efficiency should dictate the value to be gained in employing the most sensitive dependent variable measures in small scale well controlled studies to point the way for future larger research endeavors. In fact, it may be that the NHTSA commitment to large scale evaluation technology has both failed to provide a clear sense of the value of the entire countermeasures approach, and has worked against the prospects for the establishment of local ASAP program evaluation studies for surely the large scale approach offers little in the way of an appropriate model which local programs can employ in measuring the impact of their interventions or the quality of their services.

Smaller scale tightly controlled alcoholism treatment outcome evaluation research has been conducted successfully employing a technology based on the rules presented in Table 1. The use of such rules (see

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Insert Table 1 about here

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for example, Caddy, 1978; Caddy, Addington, & Perkins, 1978; Sobell, 1977) results in a specific high capture follow-up technology which, when used

with a set of extremely sensitive dependent variable measures, can lead to highly sophisticated treatment outcome evaluation studies being conducted within a most reasonable budget. Certainly, when treatment outcome evaluation research programs employ such rules, it is possible to ensure the detection of significant differences in the more sensitive life status variables between subjects in various treatment conditions with sample sizes of less than thirty subjects per condition. Convincing evidence in support of the use of such sample sizes may be found in Caddy and Lovibond, 1976; Caddy, Addington, and Perkins, 1978; and Sobell and Sobell, 1973, 1976. In fact, currently there are very few clinical research studies published in the behavioral sciences literature that involve sample sizes of more than thirty subjects per cell. The use of highly sensitive dependent variable measures, together with the employment of relatively powerful statistical techniques to evaluate changes in the dependent variable measures, make it unnecessary to use larger sample sizes to obtain statistically significant differences between groups of subjects to whom differing interventions are provided. The technology implicit in the rules contained in Table 1 has been available to, and to some degree, has been employed recently by several of the more sophisticated ASAP evaluation studies. However, this technology has not been employed adequately in this previous research. I believe that the failure to structure the previous follow-up studies tightly enough in accordance with these rules has meant that even the ASAP evaluation research which has been conducted with a focus on life change criterion measures has failed to live up to its promise of providing valid data from which a meaningful evlauation could be made.

A commitment to the use of the sort of rules presented in Table 1 clearly indicates a commitment to the proposition that valid treatment outcome evaluation research cannot occur unless it is fostered within a particularly well controlled research environment. The enthusiastic involvement (or at least the comfortable compliance) of the research subjects in any study exploring treatment effectiveness must be seen as crucial to the success of the research enterprise. It is here, also, that much of the previous ASAP evaluation research has fallen short of the mark for even in those ASAP studies that have collected life change oriented dependent variable measures derived from questionnaire responses, the subject recruitment procedures employed have been less than highly conducive to the collection of valid data or to the integrity of the initial sample under investigation. Typically, subjects involved in these studies have not been handled in accordance with the spirit or the principles of informed and voluntary consent (see U.S. Department of Health, Education, and Welfare, Protection of Human Subjects, Federal Register, March 13, 1978, 40, #50). Rather these subjects have been required to "volunteer" to provide follow-up data as part of their ASAP involvement. Such an approach, in my opinion, is both ethically and legally questionable and practically naive for there is very little reason to assume that individuals who have been pressed into ASAP attendence and then required to provide follow up data that cannot otherwise be well corroborated, are likely to feel the need to provide valid follow-up data. I doubt very much that investigators conducting such research programs can assert with any degree of assurance the validity of the data derived from such "volunteers" and I believe that without such

assurances the findings of such studies must be highly suspected. Yet, as I have said elsewhere:

> " . . . we now have a technology which has been shown to have the capacity virtually to eliminate the losses to follow-up that have characterized the alcoholism treatment outcome literature to date. More importantly perhaps, this technology can be implemented on a small scale in many existing programs if there is a willingness to change the priorities given to treatment outcome evaluation within these programs" (Caddy, 1978, p. 18).

Further, provided that the interviewer has been well trained and the subject and the interviewer develop a good rapport (which in itself is largely a function of the procedures employed within the entire study), and the time between interviews does not exceed three months (i.e., frequent and continuous monitoring occurs), it is possible to obtain reliable and valid data from people who under many other conditions are inaccurate in their reporting of their drinking practices (see Cooper, Sobell, & Maisto, 1977; Sobell & Sobell, 1976; and the review in Armor, Polich, & Sambul, 1978).

It should be clear that I am confident that the aforestated rules for performing treatment outcome evaluation research and the philosophy from which these rules have been developed provide the structure and context for conducting valid investigations of the effectiveness of ASAP programming. Yet, even if this technology is employed in evaluating the life change effects of ASAP programming, the current literature in the field of alcohol abuse treatment suggests, at least with the alcohol dependent person, that the numerous intervention procedures employed throughout the various and diverse ASAP programs can be expected to produce outcome data that reflect treatment results that are mediocre at best. Formal treatment for alcoholism, for example, appears to add

only about 20 to 25 percent to the overall remission rates over and above what can be expected from no treatment (see the reviews by Armor, Polich, & Stambul, 1978; and Emrick, in press). It is my opinion that the general failure of the ASAP programming to show meaningful change in the drinking practices of ASAP clients may be accounted for by certain program characteristics, many of which are common throughout the present ASAP programming efforts.

Despite the diversity found in ASAP programs, most of the current ASAP intervention procedures which are administered to serious problem drinker ASAP clients are products of the traditional "disease concept" approach to alcohol abuse and dependence which is based on the following propositions:

(1) There is a unitary phenomenon which can be identified as alcoholism.

(2) Alcoholics and prealcoholics are essentially different (presumably biologically different) from nonalcoholics.

(3) Alcoholics may sometimes experience an irresistible physical compulsion to drink.

(4) Alcoholics gradually develop a process called "loss of control" over drinking, and possibly even in inability to stop drinking.

(5) Alcoholism is a permanent and irreversible condition.

(6) Alcoholism is a progressive disease which follows an inexorable development through a distinct series of phases.

Further, even in those educational sessions provided to DWI offenders whose drinking is not generally considered "abusive," alcoholism typically

is presented within the framework of the traditional view. This view offers the early stage problem drinker little to be concerned about for it minimizes the likelihood that such drinkers will see themselves as potentially alcohol dependent individuals. Hence, such a presentation is likely to have inadequate impact on the drinking practices of these mostly younger drinkers. Related also to the univariate conceptualization inherent in the traditional view of alcoholism is the general tendency in many treatment circles to propose univariate intervention approaches. Thus, for example, the STR study employed PMT (see Boyatzis, 1976; and Cutter, McClelland, Boyatzis, & Blancy, 1975) as a basic short term intervention modality in the hope that this "packaged" univariate treatment approach would contribute to a reduction in the drinking practices of those people exposed to it. Certainly, one may see the PMT package as capable of being implemented at a number of the ASAP rehabilitation sites and certainly, too, the PMT program may be seen as having the advantage of not requiring trained professional therapists to conduct it. Surely, however, the introduction of any new treatment modality should be based on considerations other than efficiency and expediency. There really does not seem to be any strong evidence in the literature to support the value of PMT or any other univariate packaged intervention approach in the management of the drinking practices of the multivariate array of individuals who find themselves arrested for DWI. I am not suggesting here that PMT is likely to be of no value to some people in dealing with certain aspects of their drinking and/or their life health generally; what I am suggesting and reflecting concern about, is that all too often we have sought the answer in the form of the treatment program to deal with the problem of alcohol abuse. To the extent that we continue

to develop intervention programs both within and outside the ASAP system based on a univariate view of this multidimensional problem, I believe we are doomed to failure for we will meet very few of the needs of some of the people some of the time.

Over the past few years there has developed an emerging concept of alcohol abuse and dependence which presents alcohol abuse as a multivariate behavior disorder in accordance with the following propositions:

(1) Alcohol dependence summarizes a variety of syndromes defined by the drinking practices and the various physical, psychological and/or social consequences of such drinking. These syndromes, jointly denoted as alcohol dependence, are best considered as a serious health problem. At present there is no factual basis on which to unequivocally categorize alcohol problems as either purely biological or purely psychological phenomena and there are compelling arguments against making such a simple dichotomy. On the other hand, there is ample evidence that alcohol problems can effect the physical and/or mental well-being of individuals and that persons suffering from alcohol problems are often in need of a variety of interdisciplinary services. The alcohol dependence syndrome can be considered as lying on a continuum from nonpathological to severely pathological

(2) A variety of factors may contribute to differential susceptibility to alcohol problems. However, these factors in and of themselves do not produce alcohol dependence. Any person who uses alcohol can develop a syndrome of alcohol dependence.

(3) The development of an outright alcohol problem follows variable patterns over time. It does not necessarily proceed inexhorably to severe or fatal stages.

(4) Recovery from alcohol dependence bears no necessary relationship to abstinence although the concurrence is frequently the case. The consumption of a small amount of alcohol by an individual once labeled alcoholic does not initiate the physical dependence or physiological need for more alcohol by that individual.

(5) Continued drinking of large doses of alcohol over an extended period of time is likely to initiate a process of physical dependence which eventually will be manifested as an alcohol withdrawal syndrome.

(6) The population of persons with alcohol problems is multivariate. Correspondingly, treatment services should be multivariate, emphasizing the development of a variety of services in determining which treatment delivered in which context is most effective for which persons with what types of problems.

(7) Alcohol problems typically are interrelated with other life problems, especially when alcohol dependence is long established. Treatment needs should be uniquely assessed for each individual and should address all areas of alcohol related life-health problems. Similarly, treatment outcome evaluation should measure other areas of life-health functioning in addition to measuring changes in drinking behavior.

Treatment goals should be realistic and consider the individual's potential for change. Degree of improvement must be recognized as a beneficial outcome.

(8) Emphasis should be placed on dealing with alcohol problems in the environment in which they occur because of the strong relationship which has been demonstrated between drinking behaviors and environmental variables.

(9) Recovery from alcohol problems typically is a lengthy process and treatment services should be designated to provide for continuity of care throughout the process.[2]

Surely, the better controlled recent literature in the alcohol education and treatment fields points to the need for and value to be derived from expanding the intervention orientations recommended by the traditional approach to incorporate the emerging (multivariate) concept of alcohol abuse and dependence and the implications that such an approach entails (see the reviews by Armor, Polich, & Stambul, 1978; and Emrick, 1975).

In examining the intervention implications of the multivariate approach for those DWI offenders who appear to have only minor alcohol abuse patterns, it becomes clear that we need to evolve educational programs that will be effective in focusing upon the specific problems and concerns of these mostly younger drinkers. Such an ideographic orientation requires that we seek to influence the attitudes and actions of every individual exposed to our programming. While it is clear that the alcohol field is sorely lacking in empirical data pointing the way for

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[2]A more detailed account of the emerging concepts of alcoholism may be seen in Caddy (1977) and Pattison, Sobell, and Sobell (1977).

primary and secondary intervention efforts, it is reasonable to assert and the multivariate approach would recommend, that in providing services to such individuals we:

(a) personalize and individualize the intervention messages whenever possible.

(b) focus on alcohol use as one of a number of potential problem behaviors rather than focusing on alcoholism.

(c) focus on responsible alcohol drinking patterns rather than abstinence.

(d) create an atmosphere that facilitates interaction-oriented problem solving in all participants.

Clearly, what I am describing is an interaction oriented small group format. Interestingly, while the evaluative data gathered from a series of post hoc comparison studies of various ASAP educational efforts are anything but convincing, the evidence to date does suggest that of all the different educational models investigated, those programs employing a small group format reported lower DWI recidivism figures than any of the other programs (see Nichols, Weinstein, Ellingstad, & Struckman-Johnson, 1978).

Turning now to the more disrupted problem drinker, it is widely recognized throughout the alcoholism field that many alcohol dependent individuals are unwilling to accept the view of themselves and their condition that is espoused by therapists (and/or ASAP instructors) operating from the traditional disease concept. Clancy (1960) refers to this feature as "the procrastination of the alcoholic." While data on the extent of this rejectionist philosophy in ASAP referred alcohol

abusers are not available, it is likely that many ASAP clients have little difficulty rejecting out-right the relevance to them of the traditional concept of alcoholism. In doing so, they limit the extent to which they will benefit from the clinical treatment and/or educational experiences provided to them by those ASAP programs which strongly espouse this traditional approach.

The abstinence goal of many "traditionally" oriented ASAP programs also brings special problems for effective ASAP intervention programming. While there are many alcohol dependent individuals who admit to the need for "alcoholism" treatment and yet refuse to commit themselves to a pattern of lifelong abstinence, such refusals are the rule rather than the exception in the case of many DWI offenders. Miller and Caddy (1977) have recommended a set of contra-indications for employing both moderate drinking and abstinence-oriented drinking goals in the management of both short term alcohol abusers and alcohol dependent individuals. There now exists an impressive array of studies indicating that many alcohol abusers and even some alcohol dependent individuals show greater benefit from interventions in which abstinence is not considered to be the sine qua non of success (see for example, Caddy, Addington, & Perkins, 1978; Caddy & Lovibond, 1976; Lovibond & Caddy, 1970; Miller, 1978; Miller & Muñoz, 1976; Sobell & Sobell, 1973, 1976; and Vogler, Compton, & Weissbach, 1975).

Of perhaps even greater significance is the fact that these so-called "controlled-drinking" studies and others (see the reviews by Armor, Polich, & Stambul, 1978; and Lloyd & Salzberg, 1975), have indicated clearly the advantages to be gained from individualized behaviorally oriented treatment programming over the more traditional abstinence oriented counseling

approaches. As Emrick (in press) has concluded following his comprehensive review of the relative effectiveness of alcohol abuse treatments:

> "Several behavioral approaches have been demonstrated to have long-term beneficial effects and others show promise of having relatively durable effectiveness. A remarkable aspect of these interventions is that at least some of them appear to help alcohol abusers more by reducing problem drinking than by stopping drinking altogether. Patients who receive these treatments seem to be as likely to return to some drinking as do those who receive comparison approaches, but the nature of the drinking creates less problems with resultant improvement in other areas of functioning. More research should be conducted toward refinement of those behavioral treatments which help alcohol abusers reduce drinking and related problems." (p. 17)

I consider that in addition to the evidence reflected in the preceeding commentary, there is one further particularly compelling reason to explore the consequences of introducing an integrated multivariate behavioral perspective into ASAP programming. There now exists strong evidence suggesting that the focus on alcohol and alcoholism which exists throughout all ASAP programming may be serving to limit the value which could be derived from this large scale effort to reduce traffic accidents and fatalities. Alcohol abuse is only one characteristic found among high risk drivers. Other characteristics such as impulsivity, suicidal proclivity, paranoid ideation, depression, anxiety, and other personality and behavioral elements also would seem attributes of traffic accident

prone individuals (see Brown, 1968; and Selzer & Chapman, 1971). Yet, the focus on alcohol abuse (which often results in the virtual exclusion of many other characteristics of ASAP involved individuals) may be limiting the possibility of using the ASAP system to the fullest. A multivariate behavioral orientation would permit a greater expansion of the focus of the current intervention processes. Such an expanded focus also would permit an attack on the characteristics of individual ASAP participants which, together with their use of alcohol, may be seen as features likely to contribute to the unsafe driving practices of these individuals.

It is my opinion that the best evidence currently available requires that we begin to explore the use of Individualized Behaviorally Oriented Treatment (IBOT) Services in the management of the more seriously alcohol impaired DWI offenders. The IBOT approach typically begins with the client, and whenever possible at least one significant other, being involved in individual therapy designed to help him/her come to terms with the extent to which alcohol use and other factors have created the problems with which he/she must now deal. From that point, therapy begins to explore the extent to which drinking and the other life problems are integrated and an investigation (in terms of a multivariate behavioral analysis) of each client's drinking repertoire is conducted. If, in the course of this analysis, it becomes clear that the most realistic option for the client is that he/she cease drinking, then an individualized treatment plan is prepared with one goal being programmed abstinence. If, on the other hand, after serious review, the client and the therapist conclude that a program of restricted drinking may be a viable alternative

(see Caddy & Lovibond, 1976; Gottheil, 1976; Lovibond & Caddy, 1970; Miller & Muñoz, 1976; Sobell & Sobell, 1973, 1976; Vogler, Compton, & Weissbach, 1975) and that no definitive contra-indications of such an approach are present (see Miller & Caddy, 1977), then a restricted drinking goal may be initiated. If such an approach is instituted, the therapist, the client, and the significant others must make very specific contracts regarding the style and amount of drinking that would result in alcohol use without risk of abuse and it is the obligation of the client to keep to this contract. If such a contract is not adhered to, then a reevaluation of the client is required. It may be that this reevaluation leads to a continuation of the restricted drinking goal but if such a goal is not being met adequately, then the client is moved in therapy toward programmed abstinence.

It is not possible here to present in a concise packaged fashion the methodology of the IBOT approach. In every case the clinical procedures employed would be based on the unique needs of the individual client. There is a vast literature now available dealing with Behavior Therapy approaches (see the review by Rimm & Masters, 1974, for example) and the technology for individualized behavior therapy with alcohol abusing people has been growing steadily since the late 1960's. In the IBOT program, numerous techniques such as self-monitoring, stimulus control techniques, pre-planning, restricted-rate drinking, assertiveness training, relaxation training, blood alcohol concentration discrimination training, drink refusal training, alcohol education training, self-management training, habit reversal, cognitive restructuring, social support restructuring, marital therapy, individual problem solving, integrated conjoint

family therapy, and other forms of group and individual therapy, etc. would be employed by a specially trained staff on an as required basis.

Clearly, if such an approach is to be instituted widely in future ASAP programming, the present trend away from a predominantly highway safety focus and onto a clinical intervention focus will need to continue. Further, the increased sophistication required of individuals providing IBOT services to ASAP referred clients will require a commitment to increased training for the staff of ASAP treatment programming and increased funding for this training. No doubt there will be a number of workers currently involved in ASAP programming that will assert that what I am suggesting is beyond the scope of the present programs. I do not think so, however. The intervention approaches that I am suggesting will require some change of focus and philosophy from within the ASAP system but it is a change that I see coming. I should point out that here already exists a small number of treatment programs which are fully committed to the philosophy and the methodology of the IBOT approach with ASAP referred clients. Further, there are many other programs which already subscribe to certain components of the multivariate perspective and are seeking to move their services more in the direction of increasing sophistication. I suggest that the IBOT strategy offers a target toward which a number of these developing programs could orient. However, while I believe that the present research evidence is pointing us in the direction of the IBOT approach, I also believe that we would be well served to conduct a series of tightly controlled, small scale cost benefit analyses of the approaches I am advocating before we contemplate a serious widespread commitment to the IBOT methodology. Such a strategy will permit

us to develop ASAP intervention programming in response to empirical scrutiny rather than in response to unruly political or philosophical bias.

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Table 1

Rules for Performing Treatment Outcome Evaluations in the Alcohol Field

Pre-Treatment Measures

Baseline (pre-treatment) measures are needed to measure adequately and interpret treatment outcome data.

Measurement before and after treatment should cover the same time interval and be designed for comparability.

Measures should be standardized across subjects.

Follow-up tracking data: information which is necessary for contacting and following subjects and their respective collaterals over a long period of time should be obtained prior to the subject's discharge from a treatment program.

Treatment Outcome Measures

Adequate definition of criterion variables is essential.

Measures should be continuous and quantifiable (i.e., number of days missed work rather than majority of the interval employed).

Multiple measures of treatment outcome should be used (drinking behavior as well as other measures of life functioning).

Data should be presented for individual subjects as well as groups.

Predictors of varying levels of treatment outcome should be developed for each treatment modality.

Follow-Up Procedures

Ensure that full compliance with the practices of informed and voluntary consent is followed in the recruiting of subjects.

Brief subjects prior to discharge about the nature of the follow-up to be conducted--reasons for; type, frequence and duration of interviews; types of questions asked; and how the information will be used.

Use equal follow-up intervals for all subjects.

Use frequent follow-up contacts: it is suggested that such contacts can gather more sensitive outcome data and insure a higher follow-up retrieval rate.

Use multiple collateral information sources to verify self-reports and to help in the tracking of subjects.

Pay subjects and collateral informants whenever possible and collect the data at the convenience of subjects and their collateral informants (home interviewing is preferable).

Use record data to verify all quantifiable self-reports (i.e., incarcerations, days missed work, etc.).

Do not combine data from different sources (i.e., combining subject data with collateral data).

Train interviewers in skillful interviewing techniques.

Judicial Intervention: The Missing Element

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JUDICIAL INTERVENTION - THE MISSING ELEMENT

With the proliferation of rehabilitation programs, the concern of many interested persons and agencies, the vast resources being directed into alcoholism prevention and rehabilitation, why is there not a reduction in the recidivism rate?

Recent surveys have indicated that the majority of successful recoveries from alcohol abuse or alcoholism are motivated by either the family, the employer, or the court. Those suffering from alcohol abuse or alcoholism usually manage to hide the problem from employers until critical stages of alcoholism are reached, and most families are reluctant to act and may even cooperate in hiding the symptoms of the disease.

Surveys of recovering alcoholics reveal that courts have the opportunity to motivate these individuals toward alcoholism prevention and rehabilitation long before the employers are aware of the problem. And since recent research indicates that 80% of those persons arrested for alcohol-related offenses are alcohol abusers, not alcoholics, it therefore follows that judges are in a unique position to assist in alcoholism prevention as well as rehabilitation.

It has long been known that more than 50% of the criminal cases coming before a court are offenses either caused or influenced by alcohol consumption. These alcohol-related offenses run the gamut from the minor charge of public intoxication to the serious crime of first degree murder. A recent survey of the courts in a busy California metropolitan area reveals that over 65% of both civil and criminal cases coming before the Municipal Court are directly or indirectly caused or influenced by alcohol consumption. In the same busy area, but in the Court of General Jurisdiction, the survey indicated 85% of all civil and criminal cases were so caused.

In terms of offenses connected with the automobile, it is universally conceded that when all traffic violations are considered, if the number of fatalities is utilized as a criterion, that the violation of Driving While Intoxicated must be considered the most serious. Most of these offenders will appear before a judge where some action can be taken not only to deal with the immediate offense, but with the driver's whole drinking and driving pattern.

Why, then, are the courts not more productive in alcoholism prevention and rehabilitation? With the exception of a few outstanding court-oriented alcoholism prevention and rehabilitation programs, most courts are still using the traditional, non-productive jail and fine approach. A careful investigation of the relatively few successful programs indicates that success is directly related to an individual judge's

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education and motivation toward an enlightened approach in helping the individual escape from alcohol abuse or alcoholism through education and counseling, while utilizing community resources.

This approach is not new, nor is it unique. Ray Harrison, a Municipal Court Judge from Des Moines, Iowa, who was a recovering alcoholic; Eugene K. Mangun, Chief Presiding Judge of the City Court, Phoenix, Arizona, a man who had never tasted liquor; Robert Clifton, Judge of the Superior Court of Los Angeles, California; Lyle H. Truax, Judge of the Municipal Court of Vancouver, Washington - all pioneers in the field since 1955 - indicate that successful programs are possible if the judge is primarily motivated to help each individual who appears before him charged with an alcohol-related offense.

Few people have the power and authority over the alcohol abuser and alcoholic that judges have. Through the constructive use of this inherent power, judges can cause alcoholics and alcohol abusers to enter into early treatment. The judge need not sit back and watch the alcohol abuser progress to the chronic alcoholic stage, or the first offender DWI driver progress to the multiple offender. Instead, through the proper use of the tools of his office, he can direct the person toward a treatment best suited to the offender's needs.

It is safe to state, then, that in most cases the lack of successful programs in the majority of courts can be directly attributed to the lack of motivation and, to a lesser extent, to the lack of appropriate education of individual judges. Problems do exist in any judicial education program, not through a lack of "experts" in the field of rehabilitation, but because of a lack of basic understanding of the many problems inherent within the court structure and the means whereby credibility can be established with judges.

An example of a program conceived by knowledgeable people which tried to utilize the courts for rehabilitation, yet has not been that successful, was ASAP. The laudible goal of the Alcohol Safety Action Program (ASAP) was the reduction of the deaths and injuries on the highways due to the ingestion of alcohol. Why, then, wasn't this program more effective? There are two primary reasons. First, the majority of programs were limited basically to classroom instruction and group sessions, dealing almost entirely with the concept of modifying attitudes and behavior in regard to the consumption of alcohol. There was an almost total lack of attention paid to driving skills and to "hands-on" driving instruction

Second, in common with the majority of alcohol-related programs, almost all resource personnel of community programs were recovering alcoholics and, in common with most of us, when something has been successful for them, there is a strong bias to utilize the same form of treatment for everyone. Thus, in many cases, the social drinker and the moderate

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alcohol abuser were given the same treatment program as the chronic alcoholic. It is not surprising, then, that the evaluation of ASAP programs has shown that persons referred to treatment modalities utilizing these concepts have proven to be much healthier, both psychologically and physically, but there has been no reduction in the number of moving vehicle offenses for these people. Thus, ASAP has been moderately successful in dealing with the concept of alcohol ingestion, but has been completely unsuccessful in dealing with the concept of driver improvement.

Persons attempting to design a program of judicial education must have a complete understanding of the judicial complex and must keep the actual goal of a particular program paramount in order to avoid designing what is otherwise an excellant program with the wrong goal.

The key person in the entire process of court-oriented alcohol rehabilitation is the man the offender must appear before - the judge. If that judge is aware of the physiological and psychological effects of alcohol and how they relate to life impairment; if he is aware of available treatment programs - not only for the alcoholic but also for the alcohol abuser; if he is able to evaluate a treatment program for sound principles and effectiveness; if he is able to do all these things, then swift, fair, and firm adjudication of all alcohol-related offenses becomes the standard.

Few, if any, judges can make time in their over-crowded schedules for the individual research required to become truly knowledgeable in the areas mentioned. In addition, many judges lack the motivation to consider any form of judicial intervention except that of the traditional one of punishment. Therefore, there is a two-pronged problem: First, the judge must be motivated to view alcohol-related problems in a new manner; and second, the judge must be educated in innovative and effective ways of dealing with these problems.

Let us address the problem of motivation. Since many, if not most, judges consume some alcoholic beverage themselves, why is it so difficult for them to be empathic to the alcohol-related offense? Probably because they, in common with the general public, have been subjected to a very strong cultural bias against the alcoholic and a very strong media bias against the DWI/DUI offender. The person who usually appears before the judge for an alcohol-related offense, typically public intoxication, is not viewed as the alcoholic of the television or magazine advertisements, who is commonly pictured as a middle-class, somewhat successful American who has a drinking problem he cannot control. The defendant appearing before the judge typically is viewed much as he looks - as a derelict who is habitually drunk and therefore is more of a nuisance than anything else.

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The DWI/DUI offender, on the other hand, is typically viewed as a "bad guy." The public, the law enforcement agencies, the judiciary, and the legislature - all with some justification - view the person who drinks and drives as a menace and, as a menace, someone deserving of punishment. There is a great deal of truth in both of these stereotypes in that yes, the defendant who appears before the judge who is an habitual drunk is, in all probability, a skid-row type character, and the person who gets into his automobile and drives after consuming an excessive amount of alcohol is indeed a menace - not only to himself but to other drivers on the road. Thus, both of these persons are deserving of some type of punishment.

The problem arises when one considers the type of punishment. The majority of judges still utilize traditional modes of punishment rather than exploring innovative ways to reduce the number of recidivistic offenders in these areas.

The key word in the process of changing judicial attitudes is motivation. First, what is the motivation for their current behavior. Second, how does one motivate them to consider new modes of behavior? Almost all of our behavior is learned. If our actions are reinforced by our environment, we will continue those actions. If the actions are not reinforced, then those actions will be extinguished. Since the majority of society, in common with the judges, has unconscious associations of what a drunk is, or what a drunk driver is, the behavior of traditional punishment on the part of the judges is reinforced and applauded, both by the public at large and by peers. Therefore, there is very little motivation to change.

These attitudes can be changed if a process of judicial education is implemented. Given an atmosphere where present attitudes can be explored and the consequences of current actions realized fully, the majority of people - even judges - will reach a conclusion to change.

Utilizing specially prepared questionnaires, the attitude of the individual can be elicited, in terms of how he really feels toward the various alcohol-related offenses that appear before him. It is vital to know this attitude prior to attempting any form of attitude change. At the same time, it is also important to ascertain the judge's feelings toward such things as over-crowded courts, jammed judicial calendars, long delays, overwork of the judiciary, and the high cost of the total judicial process. Once these attitudes are known, it can be shown how the judge can act as a catalyst in reducing recidivistic offenders in terms of alcohol-related offenses. By mandating some type of rehabilitation program, as opposed to incarceration or fines, and in the case of DWI/DUI offenders, by creatively giving alternatives to arbitrary harsh fines or jail sentences, such alternatives should include an educational program concerning the abuse of alcohol and driver improvement involving "hands-on" instruction.

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This type of motivational session would be especially effective if it could be reached in a guided discussion type atmosphere, where several judges reach a consensus on specific programs that would be both innovative and effective. The motivation to change is much higher if the participants reach that decision themselves, rather than having it presented to them in some lecture type situation. In addition, there would be strong motivation to adopt a more innovative approach, since there is ego satisfaction in an approach that is prescriptive and preventative, rather than merely punitive.

This approach would be effective with the majority of judges; however, it would not correct every problem caused by those judges who permit and even encourage bail forfeitures on alcohol-related offenses; those judges who believe that fines and jail sentences are the only tools which they can utilize; those judges who believe that alcoholics must first want help before being able to take advantage of treatment; those judges who believe there are no treatment facilities in their communities; those judges who do not resist the negative influence of defense attorneys toward treatment; even the occasional judge who suffers from alcoholism and is thus very defensive and unable to work with alcoholics. Most of these problems can be overcome with the proper education and counseling.

At no time should there be an attempt to have the judge provide the diagnosis and treatment; rather, the judge should provide the motivating force to cause the individual to obtain treatment.

Most alcoholics and alcohol abusers are sensitive toward persons about them and with the help of the communication system of the "Muscatel Mafia" they usually know which judges can be "conned" and which "mean business." The most ineffectual judge, no matter how learned or well intentioned he may be, is the judge who makes empty promises to an alcoholic in an attempt to rehabilitate or to prevent recidivism. Most of the offenders know who these judges are, and also know that they can violate the terms and conditions of probation with impunity. Unfortunately, those judges who fail to punish where probation is violated, are usually the most popular with criminal defense attorneys and criminals. As a result, such judges merely reinforce criminal behavior, create recidivists, and tarnish and diminish the effectiveness of those progressive judges who try to provide protection to the public, while providing treatment for those persons with alcohol-related offenses.

Judicial education should be an ongoing process, but it must start somewhere. One such beginning is the attached model for a weekend educational siminar concerning alcohol and alcohol-related driving offenses.

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We have wasted far too much time in establishing some form of judicial intervention as the norm in alcohol rehabilitation rather than the exception. And, until it does become the norm, we will continue our current loss of productivity by alcohol abusers, and the loss of lives by drinking drivers. Once the judge's role is truly understood and utilized, one of the most efficient means of alcohol abuse prevention and alcoholism rehabilitation will be added to the arsenal of weapons fighting these problems.

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SAN DIEGO, CALIFORNIA 92101
(714) 233-5434

DAY ONE

I. Historical and Cultural Aspects of Alcohol and Drinking

A. Drinking throughout history and changing attitudes toward excessive drinking during various periods
B. Cultural pressures toward drinking
C. Religious and ethnic attitudes toward drinking.
D. Alcoholic content of popular beverages and why people buy them

II. Physiological and Psychological Aspects of Alcohol and Drinking

A. Effect of alcohol on central nervous system and depressant effects
B. Type of calories and effect of alcohol on nutrition
C. Body weight, tolerance factors, rate of consumption, and food as factors in how alcohol affects different persons
D. Types of drinkers
E. Alcohol impairment of mental abilities
F. Alcohol and judgment
G. Alcohol and motor skills
H. Blood alcohol level - What does it mean?
I. How does a person know he is intoxicated?

LUNCH

III. The Criminal Justice System and the Intoxicated Driver

A. The policeman's view of the intoxicated driver
B. The attorney's view of the intoxicated driver
C. The court's view of the criminal and civil liabilities a drinking driver may experience

IV. Practicum

A. Various drinks served with BAL tested after each drink and a record kept of individual BAL by participants
B. Video taped skill exercises before drinking and various blood alcohol levels

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DAY TWO

I. Review of Practicum

A. Review logs and video tapes with class discussion of motor impairment, judgment impairment, etc.

II. Alcohol, Highway Safety, and the Problem Driver

A. Key elements in a successful driving attitude and how alcohol affects them
B. Human factors involved in driving and how alcohol affects vision, reaction time, and motor skills
C. Physical forces acting on an automobile and how alcohol affects the driver's perception of these factors
D. Risk-taking and alcohol
E. Fatigue and alcohol

LUNCH

III. The Judge's Role

A. Practicum: Innovative judicial options
B. Group discussion of solutions
C. Model judicial oriented rehabilitation programs
D. One example of a model first offender DWI/DUI program: ADD LIFE
E. A court policy to develop community resources at no cost to the taxpayer

The Addicted Driver: A Probelm of Law or Medicine

Albert Logan, National Institute of Judicial Dynamics

THE ADDICTED DRIVER: A PROBLEM OF LAW OR MEDICINE?

By Albert B. Logan, Esq.

* * * *

In the United States more people are killed or maimed as the result of "drinking driving" than by all other crimes combined! We hear a great deal about efforts to control handguns as menaces to the public weal, but where is there any genuine or effective movement to control slaughter on the highways? The automobile has proven to be a far greater lethal weapon than firearms. And when that weapon is wielded by a driver whose capacity is impaired by use of drugs, including the drug ethyl alcohol, it becomes an instrumentality of death and destruction. That is horror story enough, without considering the damage to or loss of property and time caused by highway accidents totalling perhaps billions of dollars annually!

No one in the justice system can question that so-called "drinking driving" constitutes a crime so devastating that it has thus far defied the capabilities of the system to deter or even to prosecute it.

Why is this problem such an enigma? Why does the crime of operating a motor vehicle under the influence of drugs

involve a different approach by the justice system than the crimes of murder, rape, robbery, mugging, shoplifting, etc...?

The reason lies in the area of diverse and conflicting PUBLIC ATTITUDES. Characteristic of those attitudes are apathy, ignorance, the prevalence of the crime in "polite" society, the legality of some drug use, the inconveniences of enforcement (especially, license revocation), and the wide-spread attitudinal syndrome of "there but for the Grace of God go I". And these attitudes vary from community to community, from court to court, from jury to jury, from police officer to police officer, from prosecutor to prosecutor, from city father to city father, from legislator to legislator.

And this ambivalence characterizes the nature of the penalty applied to the crime. The fact is that society (and the justice system in particular) has not yet made a decision as to how to deal with this crime, what penalties are proper and effective, how to provide an enforcement capability, and whether or not this is a major crime (felony?) deserving of priority attention from the system.

Even though social attitudes generally facillate on this matter, the failure of the justice system to face the enormity of the crime realistically is even more appalling. Most conspicuously lacking is any uniform direction, and the absence of practical and specific guidelines, i.e., standards of criminal justice which take into consideration all of the intricate ramifications of this complex problem.

We can begin with the assumption that the presence of 0.10% of alcohol in the bloodstream of an individual constitutes prima facie, if not presumptive, evidence of driving

while under the influence or impaired by alcohol. However, we know that some people are impaired drivers with only 0.05% alcohol, whereas others with 0.15% are not that impaired. And in these times of prevalent multi-addiction, or common use of drugs other than alcohol, we must have guidelines to fit such persons into the category of criminal behavior, subject to the same implied consent restrictions generally existing for drunk driving.

For enforcement, society is dependent upon the sound judgment of police officers and prosecutors. We would like to assume (but we do not believe) that most of those public officials are sufficiently aware of the nature of intoxication and addiction to make intelligent decisions about arrest and prosecution. They and the judge (and sometimes the jury), pursuant to legislative mandate, must determine the punishment to be assessed against the criminal, what deterrant effect it should have on him and others, and how best to assure that he does not repeat this same crime. We assume at this juncture that all of those public officials have overcome the "but for the Grace of God" syndrome and have not permitted the inconvenience threatened the criminal to cloud their responsibility to enforce the law and to protect society from a crime having such enormous potential for death and destruction.

[illegible] to consideration of the problem of

When we get to consideration of the problem of recidivism, the possible recurrence of drunk driving by the same individual, we are faced with the most unique aspect of processing the crime of drunk driving. Is the defendant addicted to the drug, or is he just a spree drinker whose one arrest (plus a little driver education) is likely to deter him from further violations? If he is an addicted driver, it seems that the safety and welfare of society would be best served by seeing that he is treated for his addiction to the extent that he will not voluntarily or involuntarily use the drug again, while driving or otherwise. To achieve this latter objective, no facet of our society is so ideally equipped to provide the motivation as the justice system. It has the power, the application of force, to persuade the defendant that he is the victim of an illness, and that we must accept whatever treatment the court orders!

We are aware that today there are projects proposed to relieve an overloaded court system of the burdens of processing "victimless crimes." We can subscribe to some of these proposals. But we insist categorically that drunk driving (whether or not there is injury or an accident) is NOT such a victimless crime! The effects of such driving, nation-wide, are so serious and so deadly that this crime constitutes a problem of top priority in the American justice system.

Concerned judges have been taking steps, however, toward easing the judicial burden of this crime by utilizing various diversionary practices, including pre-trial probation, suspended sentences with probation, pre-sentence investigations and, sometimes, civil commitments to treatment. Such diversionary methods proliferated in states where de-criminalization took place upon adoption of the Uniform Intoxification and Alcoholism Treatment Act.

THERE IS MORE TO A DWI CASE THAN A BAC READING: A JUDGE'S RESPONSIBILITY TO THE DRINKING DRIVER

Presented by

Nathan Kirsh, New Jersey Department of Health

Prepared for presentation at the 1979 Alcoholism Forum Alcohol and Traffic Safety Session

May 1, 1979

Mark Twain once said, "One should never allow schooling to interfer with one's education". He reminds us that schooling and education are not always entirely compatible. Similarly, judges who hear DWI cases should never allow adjudication of the law to interfer with the intent of the law. They may not always be compatible.

Few judges who decide DWI cases are consciously or primarily concerned with highway safety to the extent wished for by the National Highway Traffic Safety Administration or by legislators responsible for enacting drunk driving laws. Understandably, a judge's major concern is with statutory adjudication, sentencing and expediting an overcrowded calendar. Emphasis on adjudication and administration alone often ignores the basic intention of drinking driving laws; that is, to effectively free our highways from the potentially dangerous drinking driver. By "effectively" we mean that the defendant will never again drink and drive.

For example, one of the factors that tend, in DWI cases, to make adjudication of the law incompatible with the intent of the law is the widespread use of chemical breath tests readings to prove intoxication by showing Blood Alcohol Concentration (B.A.C.). Obviously, in the adjudication process, BAC readings are extremely important and desirable. They make for speedy and less cumbersome trials. The proofs are presented in a cut and dried manner. Judges, however, in giving great weight to BAC readings, oftentimes tend to overlook revealing facts that could give them insights into a defendant's involvement with alcohol. They fail to concentrate on the question,

"Is this driver a potential danger?" These insights are necessary for a judge who, in the sentencing process, needs to be guided as to what sentence to impose that will best insure that the defendant will never again drink and drive. There is more to a DWI case than a BAC reading.

The aim of this paper is to convince judges that they can accommodate NHTSA goals of highway safety as well as statutory and administrative demands.

In DWI cases, application of the general principle that a judge should show more concern for the offender than for the offense is desirable. The defendant charged with drinking and driving is a very special kind of defendant. Individually, he represents but a fraction of those who drink and drive daily and never get caught.

The number of arrests for DWI, while representing a large portion of a court's calendar, represents but a small portion of all drinking drivers. A judge must realize that there are 120 million licensed drivers of 100 million cars in a society that consumes 18 to 20 billion dollars worth of liquor each year. It is estimated that only 9% of our population consumes sixty percent of all liquor sold. It may be assumed that a good many drinkers are also drivers. We do know that a major proportion of those who drink and drive are responsible for 16 million car accidents and over 50,000 highway deaths each year.

The individual defendant standing trial for DWI requires special attention. He has, more than any other alcohol-related

defendant, identified himself as a potential problem drinker. If he does, in fact, have a drinking problem, and we know that the nature of alcoholism is such that those afflicted must drink, then we must assume that unless something is done to alleviate this defendant's alcohol problem, he will again drink and drive. Merely adjudicating the DWI case without attempting to correct an alcohol problem defeats the intent of DWI statutes.

How may a court make compatible the statutory requirements of adjudication with the NHTSA requirements of highway safety? Every judge should understand the significance of a BAC reading. Every judge, during the process of the trial, should attempt to identify the potentially-dangerous drinking driver. Every judge should attempt to tailor a sentence aimed at helping the defendant overcome his dependency on alcohol.

A Word About Attitudes and Alcoholism

Alcoholism is not a moral problem but a medical one. It is recognized as a disease by the medical profession and by experts in the field. The very nature of alcoholism makes those afflicted powerless over alcohol. An alcoholic must drink. Pharmacologists, in explaining the action of the drug alcohol on the body, explain why this is so. However, the incidence of alcoholism can be curtailed. Alcohol-dependent persons do respond to treatment. The potential for rehabilitation is high.

Judges are readily able, with little effort, to identify the existence of a problem in a DWI defendant even though a defendant steadfastly denies that he has a problem, even in face of overwhelming evidence to the contrary. This "denial" is a major obstacle in dealing with problem drinkers. Like most of us, judges have been exposed to all the "myths" and "taboos" about problem drinkers. We are all subject to the stigmas attached to alcoholics. For that reason, we tend to ignore and keep secret the obvious alcoholism of our friends, relatives and associates. The term "alcoholic" or "problem drinker" connotes weakness, slovenliness, sneakiness, disgusting behavior, unreliability. Its abhorrent label makes denial of a problem a normal attitude. Who wants to be told he is an alcoholic?

On one hand, our laws harshly condemn the drinking driver. On the other hand, studies support the proposition that most people feel that a DWI defendant is not a"real" criminal but only a less fortunate fellow driver who got caught. Most of us, including some judges, have at some time got behind the wheel too intoxicated to have been a safe driver. As a result, too many of us, including judges, tend to empathize with a DWI defendant. This "but for the grace of God" attitude explains in part why convicted DWI defendants are less stigmatized than others and why judges are often unwilling to convict or jail offenders.

What too many judges fail to realize is the fact that, as reports from NIAAA tell us, anyone who drinks too much, who is under the influence, and with impaired judgment decides to drive has, to some degree, a drinking problem.

The Significance of a BAC Reading

It is well documented that most judges and police officers have no concept of the quantity of alcohol that must be consumed to reach blood alcohol levels of .10% and higher. The prevalent legal presumption of intoxication is .10% BAC. The National Safety Council estimates that the national average of BAC readings of arrested DWI defendants is .18% BAC.

A defendant with a .15% BAC has had a lot more to drink than "2 beers". An average 160 lb defendant with a BAC reading of .15% must have consumed in a two-hour period of drinking 86 proof liquor at least 9 one-ounce or 6 1 1/2 oz. drinks; that is at least one drink every 20 minutes for two hours. Most judges, when asked to estimate quantities of liquor needed to reach .10% or .15%, unvariably underestimate the amount. Judges just do not realize it takes a lot of drinking to reach a .10% or .15% BAC reading. A possible explanation is that judges tend to equate their own drinking capacity in empathy with their fellow drivers.

Most judges and law enforcement personnel do not know that any person with a BAC in excess of .10% has had a lot to drink. Few, for example, realize that:

To Reach	In a four-hour period drinking 1 1/2 oz. of vodka, gin, scotch, etc., or 12 oz. of beer or 5 oz. of wine, a 170 lb person would have to consume:(1)		
.08% BAC	5 Drinks	or one drink	Every 50 Minutes
.10% BAC	6 Drinks	or one drink	Every 40 Minutes
.15% BAC	8 Drinks	or one drink	Every 30 Minutes
.20% BAC And Up	10 Drinks And Up	or one drink	Every 25 Minutes Continually for Four Straight Hours

(1) Source: Rutgers Alco-Calculator

Could you, as a drinker, handle a martini every 30 minutes (8 drinks) for four hours straight and still consider yourself a moderate drinker? Probably not. It is apparent that a 170 lb drinker with a .15% BAC reading has had a lot to drink.

Examine also the relationship between the blood alcohol concentration of a driver and the probability of his becoming involved in a motor vehicle accident ("Grand Rapids Study", Department of Police Adm., Indiana University, 1964):

BAC Reading	Accident Probability
.05%	1 Time Greater than a Non Drinker
.10%	6 Times Greater than a Non Drinker
.15%	20 Times Greater than a Non Drinker
.17%	40 Times Greater than a Non Drinker

The BAC reading is a most useful indication to a person's drinking habits. Certainly, a judge can make a reasonable determination as to whether the defendant before him, based on a BAC reading, is a moderate or heavy drinker.

Nor do judges realize that few occasional or moderate social drinkers become involved in violating DWI laws. Moderate drinkers have a difficult time reaching a BAC in excess of .10%. It is very difficult for an inexperienced drinker to ever reach a .15% BAC or higher.

Gastrointestinal pain, nausea and vomiting are experienced as a BAC approaches .10%. Further drinking becomes so distasteful and uncomfortable that the social drinker stops. Vomiting rids the stomach of alcohol and prevents further absorption. The moderate drinker knows

he is too drunk, too sick to drive and doesn't. The heavy or experienced drinker, for reasons yet unknown, overcomes this discomfort and continues to drink and to reach higher BAC levels. A defendant with a BAC reading in excess of .15% has had a lot to drink and probably a lot of drinking experience. He may be a potentially-dangerous drinking driver.

Identifying a Potentially-Dangerous Driver

What can a judge look for when hearing DWI cases that may give him insight into a defendant's involvement with alcohol and the probability that the defendant may be a potentially-dangerous drinking driver? -- A Few Suggestions:

(1) Age of the Defendant

The youthful driver usually has had a shorter period of involvement with alcohol which may make his drinking and driving more dangerous since he may not have learned how to compensate for alcohol impairment as does the more experienced drinker driver.

(2) Time of Day of Arrest

Certainly, a defendant who is arrested at 10:30 a.m. should be more suspect than others. Late afternoon arrests may indicate a pattern of after work--before going home drinking. Weekday--early morning arrests may indicate more involvement than weekend arrests.

(3) Where and Why Drinking Took Place

Some different standards may apply to the arrested father who drank too much at his daughter's wedding reception from that of the husband who spent the night at a local gin mill and whose wife is waiting for him at home.

(4) Emotional State

A judge should question a defendant's explanation that he drank and drove because of pressures from his boss, his girlfriend, wife, mother, etc. This kind of dependency on alcohol to solve emotional problems is a characteristic of most problem drinkers. If the problems persist, the defendant will continue to drink. If he continues to drink, the problems will usually persist. The probability of drinking and driving is high. He may become a potentially-dangerous drinking driver.

(5) The Decision to Drive When Drunk

Research tells us that alcohol's first and foremost effect upon the brain is impairment of judgment. It is important for judges to remember this. As the facts of a case unfold, a judge will readily grasp the significance of judgement impairment from the facts presented. The seriousness of the degree of judgment impairment may give insight into the degree of a defendant's alcohol involvement.

For example, when an intoxicated defendant decides to drive when he is not required to do so, he may be a potentially-dangerous drinking driver - his judgment is impaired. In a recent New Jersey case, a defendant left a bar at closing time, 2:00 a.m., and was arrested for DWI on his way home. He was processed and released to his wife who came to take him home. On the way, he forced his wife from the driver's seat and drove. He was again arrested in another town and again charged with DWI. He was not released until he sobered up. Such a display of judgment impairment gives clear insight into this defendant's involvement with alcohol and with the probability of his again drinking and driving.

(6) The Importance of Probable Cause

A judge, in hearing facts of a case, should be sophisticated enough to understand that an experienced drinker may show little outward signs of intoxication when arrested. He may even do very well on non-driving performance tests given at headquarters in spite of a high BAC reading. An experienced drinker has learned to compensate his impairments in non-emergent situations. But he cannot compensate those involuntary effects of impairment in emergency driving situations. This fact accounts for most highway accidents. Involuntary reactions, such as loss of visual acuity in regard to distance, loss of peripheral vision, impaired stereopsis, lack of awareness of immediate danger, loss of reaction time, loss of physical coordination are all important.

Facts surrounding probable cause for a DWI arrest may be one most single important element in giving a judge insight into a defendant's possible drinking problem and into the probability that this defendant will or will not again drink and drive. What, how, when and where the defendant drove, calling his driving to the attention of the police and leading to his arrest, are most important facts. Every judge has had some very bizarre cases of impossible driving situations from possible confusion of going the wrong way on a road, to driving on railroad tracks in face of an oncoming train. The question a judge must ask himself is, "If this individual defendant drove in the manner described, what are the chances he will again drink and drive in the same or more dangerous manner?" If a judge feels that how a defendant drove was so unreasonable, so rash, he may well conclude that this defendant is a potentially-dangerous drinking driver.

(7) Observations at the Scene

Police officers' descriptions and observations of a defendant, at the scene of the DWI arrest, will give a judge insight into a defendant's alcohol involvement. Evidence that the defendant was drinking at the time of driving is significant. Few social or moderate drinkers continue to drink while driving. The condition of the car may tell us something of the condition of the driver -- riding on tireless wheel

rims, or as in one case -- a six foot tree limb had gone through the radiator shield down through the bottom of the engine and dragged as the car was being driven.

Facts reported by confrontation with the defendant -- degree of disorientation, unable to walk, speech, signs of urination or defecation -- are all important. From all the facts described about the defendant at the scene, a judge could well ask himself, "Can I trust this defendant on the road if this is what happens to him when he drinks?"

A Judge's Role in Sentencing

A judge should accept the responsibility that he can be an important factor in deterring DWI defendants from repeating the offense. He also has the authority and power to gain control over the potentially-dangerous drinking driver by directing him into treatment aimed at lessening the danger.

A court, however, is not a treatment center, nor is a judge a treatment expert. Judge's orders and sentences alone do not cure alcoholics. That is not their purpose. Nor is it the responsibility of a judge to define specifically the extent of a defendant's alcoholism. It is sufficient for a judge to make some determination that a problem exists, that the defendant before him may be potentially dangerous, and then to direct him into some treatment.

Not every arrested drunk driver is necessarily an alcoholic. Most are not. But every person who drives when drunk may be waving a

"red flag" telling the judge of a latent or existing alcohol problem -- that he needs some help.

A judge can and should make a first step attempt at forcing a drinking driver to accept the fact that, in spite of his denial, he may have a drinking problem; that but for the fact that the defendant's judgment was so impaired by alcohol, he would not be before the court; that but for the fact that he was drunk, he would not be facing sanctions.

Imposing penalties in sentencing without attempting efforts at rehabilitation denigrates the intention of DWI laws. In sentencing a defendant, who the judge believes may be a potentially-dangerous drinking driver, a judge can confirm his belief by examination of the defendant's driving record, criminal record, and a pre-sentence report. If a defendant has a high degree of involvement with alcohol, such involvement usually will be readily ascertained from these records.

Most judges would agree that sentencing the drinking driver has always been a difficult and an emotional problem. Incarceration rarely seems appropriate except in extreme cases when all else has failed. Revocation of licenses, while a necessary sanction, causes undue hardships on a defendant's family. Yet incarceration is sometimes necessary; revocation is often necessary.

In the sentencing process, a judge has a wide range of tools available to tailor a sentence to the specific needs of a defendant.

Sentencing Alternatives

Where it appears likely that the traumatic effect of the arrest and conviction alone will deter the defendant, the minimum statutory penalty may be imposed, and even partially suspended; or

Sanctions may be imposed, suspended, and the defendant ordered into probation and treatment; or

The sanctions may be imposed, enforced, and treatment ordered, as well; or

A defendant's sentence may be stayed pending his compliance with and completion of an ordered treatment program; or

The defendant, in lieu of jail, may be ordered into an in-patient alcohol treatment program; or

Sentence to partial confinement with work release time and ordered attendance at a treatment program with weekend confinement; or

Impose sanctions and order attendance in a treatment program with possibility of suspension of all sanctions or successful completion of the program; or

Total confinement where undue risk exists that the defendant is clearly a dangerous drinking driver not amenable to rehabilitation.

A judge must recognize his responsibility to highway safety goals inherent in all DWI laws.

THE DELPHI PROJECT ON THE VIEWS OF CRIMINAL JUSTICE OFFICIALS ON ALCOHOL SAFETY ADJUDICATION AND REFERRAL COUNTERMEASURE EFFECTIVENESS

Judge Rupert A. Doan
George D. Brandt

Prepared for Presentation to the 1979 Alcoholism Forum

May 1, 1979
Washington, D. C.

I. Project Background

The "Delphi Project on the Views of Criminal Justice Officials on Alcohol Safety Adjudication and Referral Countermeasure Effectiveness" (Delphi Project) was conducted in late 1976 and early 1977 by Judge Rupert A. Doan, Common Pleas Court, Cincinnati, Ohio and George D. Brandt, Washington, D. C. Its objective was to establish the varied perceptions of what judges and other criminal justice officials believe are the most or the least effective driving under the influence of intoxicating liquor (DUI) adjudication and referral (A&R) countermeasure actions. The project results were to allow assessments to be made about future DUI A&R development.

The Delphi Project was the central part of a larger study aimed at the development of DUI judicial countermeasure system (JCS) guidelines.1/ These guidelines were aimed at providing local criminal justice officials, especially judges of courts of limited jurisdiction, with a broad policy making framework in this field. This framework would relate to the structuring of prosecutor and judicial power in processing DUI cases. To develop the DUI JCS guidelines, the Delphi Project tested two DUI A&R effectiveness hypotheses through Alcohol Safety Action Project (ASAP) judges and other ASAP criminal justice officials (CJO) and non-ASAP judges.

The Delphi Project survey contained a list of DUI A&R countermeasures whose effectiveness is undetermined. For example, is it more effective to try, convict and impose mandatory sanctions on DUI (first or multiple) offenders than to plea bargain, reduce to lesser non-alcohol related charges and refer to treatment? Since research answers to this and other similar questions are not yet fully available, "perceptions" of effectiveness are very important to policy making.2/

Except for repeat offenses, DUI offenses are generally considered misdemeanors. Every State has a "separate court, court division or class of judges" who handle its DUI misdemeanor cases.3/ These courts and judges are called limited jurisdiction courts because of their limited civil and criminal jurisdictional authority. They range from major metropolitan courts, called municipal courts, to small town magistrates and rural justices of the peace.

Minimal formal adult probation services (assignment of probation counselors to each offender) are provided misdemeanants.4/ Most adult probation services are used with felony cases. Most jurisdiction legislatures restrict court power to grant probation by type of offense, length of prison sentence and prior criminal record. In the misdemeanor field several jurisdictions, such as California, Oklahoma and Texas, have enacted misdemeanor probation laws which effect DWI cases.5/ The lack of probation personnel in DUI cases usually results in a form of summary probation without supervision.

In the more populated areas, plea negotation is used as an alternative case processing technique to speed misdemeanor case processing. To avoid large numbers of bench or jury trials, the vast majority of

misdemeanor cases are disposed of by guilty pleas arrived at through plea negotiation. A 1976 NHTSA research report, which evaluated ASAP judicial systems, found that, even though a .10 blood alcohol concentration (BAC) is illegal per se or presumptive DUI in all States, plea bargaining at a BAC of .15% and lower was almost a national policy.6/ The study also found that, regardless of the "goodwill" expressed by court personnel toward highway safety, the principal goal was to "keep the courts functioning."7/ Only a few ASAPs, such as Cincinnati, were able to traditionally process the enlarged DUI caseload through use of streamlined administrative techniques, such as pre-trial conferences.

Usually the misdemeanor defendant agrees to plead guilty in return for the prosecutor's promise to reduce tthe DUI charge or recommend a lesser sentence to the judge. The reasons for extensive plea bargaining are legion and have been heavily documented. They range from internal factors, such as burdensome caseload and insufficient and poorly trained personnel to external factors, such as the imposition of harsh mandatory sanctions and the presence of prosecutors and defense attorneys in all of the large communities.8/

The use of alternative ASAP DUI case processing techniques, such as plea bargaining, has had three major effects. First, prosecutor and referral personnel tend to assume more of the traditional adjudication and sentencing functions of the judiciary. Second, the classification or screening of DUI offenders into drinker types and the monitoring of referrals is done by a number of officials, including prosecutors, judges, probation officers, public health officers, case coordinators, court clerks, volunteer probation officers, treatment personnel and secretaries. Also, screening may occur prior to conviction and after referral. Third, intrastate and interstate driving records and referral systems are undermined.9/

The Phoenix ASAP-developed, pre-trial diversion system (Prosecutors Alternative to Court Trial - PACT), which formalized plea-bargaining and referral to treatment, sharply reduced judge DUI case involvement and DUI recordation.

All DUI PACT first offenders were eligible for plea bargaining unless the offender's BAC was extremely high or very low. All individuals going through PACT receive a screening examination by "case counselors" to determine drinker type. In 1975 72.7% of all DUI defendants received some type of screening as compared to 30.4% in pre-PACT 1973.10/ After the Phoenix ASAP's inception in 1972, total DUI arrsts were up 60% in the first year alone. With the inaguration of PACT, DUI arrests during 1975 exceeded the first year record. The 11,729 arrests in 1976 represented a 75% increase from the 1971 year.11/ In PACT the

proseuctor delegated a major part of the case disposition function that was given him by the Phoenix Municipal Court to "case counselors" who determined defendant rehabilitation programs.12/ In 1975 81.7% of all DUI offenders were eventually referred to a rehabilitative program.13/

While the PACT program maintained its own records of prior program participation, the PACT reduced offense convictions, viz., prosecutor selected traffic violations based on driver license point system values, are not alcohol related. This means that statewide and national records do not contain information on the original DUI offense.14/

The Delphi method, which relies on expert judgment based on knowledge and experience, was employed to arrive at "perceptions" of DUI A&R countermeasure effectiveness.

II. The Delphi Method

Delphi which is most commonly used in forecasting the future, has many other applications including the exploration of different views of countermeasure effectiveness and policy options.15/ In the broadest sense, Delphi becomes a " 'meaningful' group communication process" which can be applied to any problem area.16/ Delphi meets "a demand for improved communications among larger and/or geographically dispersed groups which cannot be satisfied by other available techniques."17/ There are a number of generally recognizeable components to the Delphi method or process. They are as follows:

- Establish a panel or panels of experts. Empirical testing has found that expert judgment is more accurate when the consensus of a group of experts is obtained. Generally, committees are formed to obtain a group consensus, but there are a number of drawbacks to the committee approach.

- Judgments are obtained individually from each panel member, anonymously. Committees tend to spend a great deal of time considering irrelevant issues. Committees tend to pressure individuals into conforming with the putative group opinion. This group opinion, because of the biasing effect of personalities, may not represent the true group consensus.

- Anonymous, controlled feedback of group responses to each panel member. The panel is provided a summarization of the response of the panel through computing the consensus or lack of consensus on each item evaluated. All feedback is anonymous. Each participant can then compare his judgment with that of other experts.

- o A statistical group response will be obtained. There are generally two to four rounds of response, feedback, reconsideration of the initial response and a revised response. This results in the development of a group consensus (as expressed by the median) which becomes more accurate.

First, Delphi systematically solicits and collates "informed" judgments. Normally this is understood to mean that a panel (or panels) of experts is chosen to give their views on a particular subject. In this case, two panels (panels A and B) were chosen. "Informed" has a broader connotation than experts who are uniquely and specially qualified. Informed means a close familiarity with a particular subject which could include the "general practitioner." Most of the judges and other CJOs who served on the panels were "general practitioners" in the sense that they handled other misdemeanor and felony cases.

Panel A, which consisted of prosecutors, judges, probation officers and public defenders, were persons who had practical experience in dealing with ASAP DUI A&R countermeasures. It was composed of 25 officials: 11 probation officers, 7 judges (including one court administrator) and 7 prosecutors and defense counsel who made up a combined "other" category. Panel A was established by compiling a list of 111 CJOs from lists provided by the ASAPs. Panel B, which consisted of 22 limited jurisdiction judges, were from courts which handle DUIL cases, but were not located in ASAP sites. Panel B judges were selected from a membership list of 78 provided by the American Judges Association.

Second, Delphi obtains the anonymous expression of judgments from these informed persons. This allows individuals to express their views without fear of criticism or recrimination. Hopefully, this results in an accurate statement of an individual's views, instead of the biased views of the group or institution that the individual represents. In November 1976 a three page questionnaire and a DUI A&R countermeasure list was mailed to 189 prospective panel members. None of the 47 persons who served on the panels knew the names of the other panel members.

Third, Delphi provides controlled feedback of views. The areas of significant disagreement in the initial response are identified and the Delphi participants must compare their judgment with that of other informed persons from their field in the second round. While Delphi seeks to establish consensus, it also identifies lack of consensus. The discovery of consensus among a group of informed persons from the same discipline or between groups of informed persons, as in this project, is very valuable. It provides essential benchmarks in the field which can be useful in assessing future goals.

After analyzing the results from the initial questionnaire, a second Delphi questionnaire was mailed to the panelists in January 1977. This questionnaire indicated to each panel member their original rating and the average panel assigned rating. Panelists whose ratings differed from the average by more than one standard deviation were asked to reevaluate their previous effectiveness ratings. If a panelist chose to continue to deviate from the average, he was asked to give his reason for the deviation.

III. Project Design and Implementation

The Delphis project tested the following two hypotheses:

Hypothesis I

Non-ASAP judges that process DUI cases have a traditional view of their role. They rate improving adjudication and referral procedures, machinery and personnel countermeasure higher in effectiveness than (1) alternative case processing and sanctioning techniques, (2) case referral processing, and (3) effectiveness measures and uniform policies. ASAP judges and other ASAP CJOs hold the opposite view.

This hypothesis was based on the premise that the traditional Non-ASAP view of DUI case processing is essentially one of adjudication and referral procedures and machinery and the personnel involved in these activities, rather than the more complex and controversial alternative case processing, sanctioning, referral processing and effectiveness measures. It was believed that because of their experience ASAP judges and other ASAP CJOs would hold the opposite view.

Hypothesis II

All DUI CJO officials (Non-ASAP judges, ASAP judges and other criminal justice officials, viz., prosecutors, probation officers, court administrators, and public defenders) rate adjudication countermeasures, such as streamlined case disposition, additional qualified personnel and improved or reorganize machinery, higher in effectiveness than countermeasures that primarily improve DUIL case referral, such as providing for adequate referral and treatment capabilities and processing.

Hypothesis II is a corollary hypothesis to Hypothesis I. It assumes that if ASAP judges and other ASAP CJOs and Non-ASAP judges are given a choice between adjudication and referral countermeasures, adjudication countermeasures will be deemed most effective.

Panels A and B were created to rate the effectiveness of DUI A&R countermeasures. A 56 item countermeasures list was developed through ASAP site interviews and a National Highway Safety Advisory Committee report on DUI A&R. (See Attachment A). These countermeasures were then divided into the following two major categories and subcategories:

	No. of Items
I. Countermeasures that Primarily Improve DUIL Adjudication	
A. Streamline Case Disposition	5
B. Provide for Additional, Qualified Personnel	5
C. Improve or Reorganize Machinery	6
D. Develop Alternative Case Processing and Sanctioning Techniques	7
II. Countermeasures that Primarily Improve DUIL Case Referral	
A. Develop, Improve or Reorganize Machinery	8
B. Develop or Improve Procedures	5
C. Provide for Adequate Referral and Treatment Capabilities	7
D. Improve Processing	4
E. Develop Measures of Effectiveness and Uniform Plans and Policies	7
F. Develop Trained Health/Legal Personnel	2

The categorization of the countermeasures was done judmentally. There is some overlap between many of the subcategories and, to a lesser degree, between the categories. A case can be made for the inclusion of individual countermeasures within several subcategories. The overlap between subcategories within a category made it more difficult to get a good test of Hypothesis I, which compared effectiveness across categories and subcategories. Hypothesis II, on the otherhand, tested the two categories.

In addition to evaluating the effectiveness of the DUI A&R countermeasures, each panel member evaluated his level of knowledge with respect to each countermeasures.

The letter codes A-D on the questionnaire were converted to numeric codes 1-4 with "1" representing high effectiveness and "4" representing no effectiveness. Numbers "2" and "3" represent moderate and low effectiveness, respectively. To some extent, the countermeasures appeared in a haphazard order so that the panel members would think about each item individually. The letter codes H, K and G on the questionnaire were converted to numberic codes 1-3. "1" represented highly knowledgeable with direct action experience, "2" represented knowledgeable with limited direct experience and "3" represented only general knowledge with no direct experience. Also included on the initial questionnaire was a space for additional panel member recommended action items and a fund allocation section.

A purposive sample was taken from a total sample size of 189 persons for both panels. Since not all who received the initial questionnaire would serve on a panel, a combined panel target sample size of forty to sixty was considered adequate. Forty-seven eventually participated. Before the questionnaire was mailed, a test of it was conducted by Judge Rupert A. Doan with Hamilton County Municipal Court criminal justice officials. Minor revisions, based on their comments, were made to the questionnaire. A personal letter requesting panel participation was prepared by Judge Doan and sent with the questionnaire. It was too expensive and difficult to make a probability sample survey. It was assumed that the target sample size, while relatively small, would represent the views of a wide range of "informed" criminal justice officials.

The personal DUI A&R countermeasure ratings of the panelists which differed from the average by more than one standard deviation were marked in red. For the second Delphi questionnaire marked in red, the panelists were asked to reevaluate their previous effectiveness ratings. They were asked to 1) reaffirm their previous rating, 2) change their previous rating to conform with the group average, or 3) change their previous rating to a different rating. For each rating that continued to deviate from the average, the panel member was asked to indicate his reason for this deviation. In addition, there were eight "no consensus" action items the panelists were asked to reevaluate.

Forty-three out of forty-seven panelists returned their second round questionnaires. Two panelists telephonically indicated they would make no changes to their initial ratings and two did not respond. Those that did not response were assumed to be "no change" responses.

IV. Data Analysis

The total mean effectiveness rating of each countermeasure was determined separately for each panel. The mean knowledge level for each panel member was also computed. The mean effectiveness rating was recomputed on the countermeasures which were reevaluated in the second questionnaire. Separate mean countermeasure effectiveness ratings were calculated for Panel A judges, probation officers and prosecutors and defense counsel, who were combined in an "other" category.18/

Countermeasure categories and subcategories contained in Section III, Project Design and Implementation, were ranked according to the overall mean countermeasure effectiveness. Moreover, the panel comments on additional countermeasures and fund allocation were analyzed and documented.

The mean effectiveness and the standard deviation were calculated to determine the ten highest and ten lowest countermeasures in each panel.19/ The results of this calculation was used to decide the truth or falseness of the two hypotheses which were tested. (See Attachment B, High and Low Ranking, Panels A & B). The degree of consensus among panel members of the effectiveness of each action item was measured by the coefficient of variation as the most sensitive measurement of dispersion relative to the size of the mean.20/

A detailed ranking of each countermeasure by category and subcategory has also been prepared (See Attachment C, Panels A & B). A detailed narrative analysis of these results and further project documentation are contained in the unpublished research paper on "The Development of Driving Under the Influence of Intoxicating Liquor Judicial Countermeasure Guidelines."

V. Findings

Level of Knowledge

Each respondent rated his level of knowledge about each of the 56 A&R countermeasures included in the questionnaire. One knowledge category from the following was selected:

H - Highly knowledgeable in the subject area and have had substantial direct experience with the action item.

K - Highly knowledgeable in the subject area but have had only limited direct experienced with the action item.

G - Have only general knowledge of the subject area and have had no direct experience with the action item.

For all 56 countermeasures as a group, the distribution of respondents among the three knowledge levels was unequal but similar between the Panels. In Panel A 55% rated themselves in Class H, 21% in Class K, and 38% in Class G. In Panel B 54% rated themselves in Class H, 26% in Class K and 33% in Class G. A further breakdown, however, indicated that the ASAP Panel judges rated themselves 66% in Class H, 15% in Class K and 18% in Class G. Moreover, there is a considerable range in the level of knowledge expressed about individual countermeasures. Countermeasure mean averages will be indicated in Attachment C. In terms of percent, for example, 74% ranked themselves in Class H on requiring all DUI courts to be courts of record. On the other hand, only 40% considered themselves in Class H with respect to knowledge on the effectiveness of referral system management.

Mean Ranking of Effectiveness

The Referral Category countermeasure to "provide judges with past driving record information prior to sentencing on DUIL cases" received, by a substantial margin, the highest mean effectiveness rating of both Panel A and Panel B. The mean knowledge ratings of this countermeasure were also among the highest. The largest number of high ranking countermeasures in both panels are from the Referral Category.

Another of the top-five ASAP Panel countermeasures, in addition to the number one countermeasure driving record information, is from the referral "Improve Processing" subcategory. Two of the top-six Non-ASAP Panel countermeasures, in addition to the number one item, are also from the "Improve Processing" subcategory. They are as follows:

- Provide for Formal Probation Traditional Sanctions & Treatment for Problem Drinker Drivers - ASAP (#5) and Non-ASAP (#2)

- Provide for Probation Revocation Hearings - Non-ASAP (#3)

Of the remaining three top-five ASAP Panel countermeasures, two were from "Provide for Adequate Referral and Treatment Capabilities" and one was from "Develop or Improve Procedures" subcategories. They are as follows:

- Provide Necessary Treatment (#2)

- Provide PSI Indicated Rehabilitation (#3)

- Require Judicial Use of PSI Reports Prior to Sentencing (#4)

Of the remaining three top-six (five and six had the same mean effectivness rating) Non-ASAP Panel countermeasures, one was from referral and treatment, one was from procedures and the third was from reorganize machinery subcategories. They are as follows:

- o Provide Necessary Treatment (#5)
- o Screen Problem Drinker Drivers from Social Drinker Drivers Prior to Sentencing (#6)
- o Require PSI for All Second and Multiple Offenders (#4)

Significantly, neither panel rated any countermeasure from the Adjudication Category's "Alternative Case Processing and Sanctioning" subcategory among the highest in countermeasure effectiveness. In the top ranked ASAP Panel countermeasures there was a balance between referral and treatment capabilities and process. Limited overall high ranking emphasis was placed on Adjudication countermeasures. Slight emphasis was given to referral machinery, effectiveness measures and policies and health/legal training. In the top ranked Non-ASAP countermeasures there was considerable emphasis on referral process. Limited overall high ranking emphasis was placed on referral and treatment capabilities, effectiveness measures and policies and Adjudication countermeasures. Slight emphasis was given to referral machinery and procedures.

Interestingly, the ASAP Panel ranked judicial use of PSI reports prior to sentencing high, while the Non-ASAP Panel ranked the PSI requirement for all second and multiple offenders equally high. Both panels ranked necessary treatment for problem drinking cases as well as formal probation and traditional sanctions for these cases within the top five. Also, while the ASAP Panel ranked high the providing of PSI indicated rehabilitation, the Non-ASAP Panel ranked the screening of problem drinker for social drinker drivers high.

Both panels ranked extremely low countermeasures requiring "deferred sentences" and dismissal of the DUIL charge, using parajudicials to adjudicate non-jury DUIL cases, decriminalizing first offense DUIL and eliminating jury trials. The first two countermeasures are from the "Alternative Case Processing and Sanctioning" subcategory and the latter two are from the "Streamline Case Disposition" subcategory of the Adjudication category.

Consensus Among Countermeasures

The ASAP Panel countermeasures with the largest coefficients of variation, representing the lowest relative consensus, are: 1) require problem drinkers to be screened out from social drinker drivers prior to sentencing, and 2) provide for "deferred prosecution" where the DUIL charge is suspended pending participation in a rehabilitation program.

The Non-ASAP Panel action items with the largest coefficients of variation are: 1) require defense counsel to confer with referral system personnel to assist in the development of a client treatment program, 2) the diversion of all youthful DUIL offenders to retraining and rehabilitation programs, and 3) judicial imposition of summary or formal probation whenever there is referral to rehabilitation.

Highest relative consensus in ASAP Panel countermeasures are: 1) provide judges with past driving record information prior to sentencing, 2) require probation officers to be involved in the diagnosis and referral of problem drinker drivers, and 3) require judicial use of presentence investigation reports before imposition of sentence. Highest relative consensus in Non-ASAP Panel countermeasures are: 1) the same as ASAP Panel number 1 on providing judges with past driving record, 2) provide for parajudicials to adjudicate non-jury DUIL cases, and 3) require "deferred sentences" and dismissal of DUIL charge. While the highest ASAP Panel consensus was on countermeasures rated high in effectiveness, two of the three, viz., parajudicials and "deferred sentences", high Non-ASAP Panel consensus was on countermeasures rated low in effectiveness.

Low Consensus Countermeasures

Eight countermeasures were identified on analysis of the first-round of questionnaires as having a low degree of consensus: having a standard deviation of 1.15 and above. Several of the countermeasures were low in consensus for both the ASAP and Non-ASAP Panels. In the second-round questionnaire no value was reported for these countermeasures and all panel members were asked to reevaluate their effectiveness rating again. (Attachment A numbers 5, 9, 19, 20, 23, 43, 46 and 50).

For the ASAP Panel countermeasure number 43, install interlock safety system in referred offender vehicles, the reevaluation of effectiveness reduced the degree of consensus: both standard deviation and coefficient of variation increased in the second-round compared with the first-round. Except for ASAP Panel countermeasure number 20, imposition of mandatory sanctions on second and subsequent offenses, where the coefficent of variation remained the same, for the other seven action items, the Delphi process increased the consensus, as measured by both standard deviation and coefficient of variation.

Changes in rating of effectiveness of these eight countermeasures as a result of the Delphi process were small: four increased, three decreased and countermeasure 19 split with Panel A decreasing and Panel B increasing.

Delphi Process Effect on Countermeasure Consensus

While, as anticipated, the Delphi survey generally increased the consensus about the effectiveness of countermeasure, 19 of the 56 action items showed less consensus in the final round than in the first. Either the coefficient of variation or both the coefficient and the standard deviation had increased in these 19 in the second round.

Another general result of the Delphi survey was to raise the mean effectiveness rating in 43 of the 56 countermeasures. Three countermeasure effectiveness ratings remained the same.

Panelists were asked to indicate why they deviated from the average panel rating of effectiveness when they responded to the final round. Fifty-three percent of the 43 persons returning second round questionnaires made some comments about why they differed. Forty-two percent of the Non-ASAP Panel commented and 63% of the ASAP Panel. The comments from both panels indicated an opposition to (1) Federal or State funding, especially by the Non-ASAP Panel, (2) the limitation of discretion, except for several Non-ASAP Panel members, (3) technological responses to the drinking-driver problem, and (4) any major restructuring of the criminal justice system as it is currently set up to handle DUIL cases. Generally, the adage of "where you sit, determines where you stand" applies. There was limited system orientation and most of the comments were technical in nature. There was an expression that the system actors, e.g., judges, prosecutors, probation officers, defense counsel, were not fully qualified to resolve the referral interaction problems and that their primary qualification was a case processing one.

Effectiveness of Subcategories and ASAP Panel Official Position

Based on the average of the mean effectiveness ratings of the countermeasures composing each subcategory (See Attachment C), the subcategory rated by far the most effective by both panels is "Improve Referral Processing" of the Referral Category. There is no close ranked subcategory to the Referral Processing sub-category. At the other end of the scale, the ASAP Panel ranked alternative case processing and sanctioning and case disposition categories of the Adjudication Category the lowest. The Non-ASAP Panel ranks these same two subcategories, in inverse order, the lowest. These subcategory rankings correspond to the individual action item rankings of high and low effectiveness. (See Mean Ranking of Effectiveness and Knowledge, above).

Also based on the average of the mean effectiveness ratings of the ASAP Panel Official Position (viz., judges, probation officers, prosecutors and defense counsel), the effectiveness ratings were generally similar. However, the prosecutors and defense counsel rated the case disposition subcategory a rank higher in effectiveness than the judges and probation officers and the developing or improving referral procedures a rank lower in effectiveness.

Distribution of Funds by Major Activities

There were limited differences within each panel and between the panels in allocating funds to three major activity areas: adjudication, case referral and classifying offenders according to treatment needs. Both panels suggested a 30% to 36% allocation for each activity area. The most difference was between the ASAP Panel which recommended 35% of the funds to adjudication and the Non-ASAP Panel which recommended 36% for classifying offenders according to treatment needs.

ASAP Panel Official Position had some effect on the suggest distribution of funds. Judges, prosecutors and defense attorneys wanted 40% to 45% of the funds to be allocated to adjudication, while probation officers wanted 25%. On the other hand, the probation officers wanted 36% of the funds allocated to classifying offenders according to treatment needs, as compared with 21% by the judges. Both the judges and probation officers were in fairly close agreement on percent of money to be allocated to referral: 35% judges and 37% probation officers.

VI. Conclusions

Generally, Hypotheses I and II were disproven by the Delphi Project results.

Contrary to Hypothesis I, Non-ASAP judges rated DUI case referral processing countermeasures higher in effectiveness than the adjudication and referral procedures, machinery and personnel countermeasures. In accordance with Hypothesis I, Non-ASAP judges rated alternative case processing and sanctioning techniques, and effectiveness measures and uniform policies countermeasures lower in effectiveness than adjudication and referral procedures, etc. Contrary to Hypothesis I, ASAP judges and other ASAP CJOs held the same countermeasure views as Non-ASAP judges.

Contrary to hypothesis II, both Non-ASAP judges and ASAP judges and other ASAP CJOs rated DUI referral countermeasures, such as providing for adequate referral and treatment capabilities, higher in effectiveness than adjudication countermeasures, such as streamlined case disposition.

Non-ASAP judges and ASAP judges and other ASAP CJOs clearly perceive referral countermeasures to be much more effective than adjudication countermeasures. With a few notable exceptions, such as all DUI courts should be courts of record (ASAP Panel) and all DUI judges lawyers (Non-ASAP Panel), neither panel gave high effectiveness ratings to adjudication countermeasures. The prosecutors and defense counsel tended to rate certain streamline case disposition countermeasures, such as reduce backlog to zero and decriminalize first offense, more effective than either the judges or probation officers.

Six of the panels' top eleven countermeasures, most of which are from the Referral Category, are the same. A "preferred" referral system can be constructed from these highly rated countermeasures. The cornerstone of the referral system is the number one ranked countermeasure: availability to judges of past driving record information prior to sentencing on DUI cases. The other referral system countermeasures are:

- o Provide for judicial use of formal probation, in addition to fines and jail, alcohol safety schools and out-patient rehabilitation programs, including Alcoholics Anonymous, for problem drinker drivers and alcoholics.

- o Require the development of a uniform judicial case referral system in multi-judge DUI courts.

- o Provide whatever rehabilitation or treatment programs for DUIL offenders that are indicated by the presentence investigation.

- o Provide necessary treatment for problem drinking cases.

- o Provide for immediate DUI probation revocation hearings on violation of terms.

For this type of traditional referral system to be effective requires the DUI offenders' driver records to be accurate and complete. As the computer saying GIGO (garbage in-garbage out) indicates, the quality of the information put in the driver record is critical. To insure the accuracy and completeness of driver records calls for a case processing method which records all DUI dispositions as alcohol related. With the exception of jurisdictions such as New Jersey, with a two tier drinking driving law, plea bargaining, case reduction and referral to treatment does not result in a DUI driver record entry. Such an entry becomes only a way for a local jurisdiction to identify those who have already been through its treatment or education program.

The DUI referral system constructed from the Delphi Project follows a traditional criminal justice pattern. It places heavy reliance on formal referral processes, such as the past driving record, presentence investigation, formal probation, treatment and probation follow-up, and penal sanctions for problem drinker drivers. It does not contain alternative case processing methods that are used in many jurisdictions. This discrepancy between the "preferred" referral system construct and "real world" practices may represent an "idealized" referral system as much as an "effective" one. A system with which limited court judges and other CJOs feel philosophically comfortable.21/

The DUI referral system construct is linked to a perceived ineffective adjudication and sanction system. The Delphi panels found alternative case processing and sanctioning countermeasures, which many of them employ, ineffective: deferred prosecution, deferred sentences, formalized plea bargaining and charge reduction, and the imposition of mandatory sanctions on second and subsequent offenders. The panels also rated as ineffective a number of innovations to streamline case processing that have been successfully tried by a number of jurisdictions: pretrial conferences, establish supreme court rules, and decriminalize first offense DUI.

This perception of effective of one part of the DUI JCS and not another may reflect a closed system outlook on the part of the Delphi panels. The DUI judges and CJOs are so familiar with the problems of adjudication that they may doubt that adjudication can ever be effective. Considerable practitioner pessimism is a well-known result of the daily grind of misdemeanor court. The judges also may believe that fairness, and not effectiveness, is adjudication's only legitimate goal.

The adjudication and sanctioning components of the JCS are very important to the effectiveness of the referral component. Inadequate adjudication and sanctioning components will detrimentally effect any referral component. It is not enough to construct a "preferred" effective referral system without also constructing complimentary and effective adjudication and sanctioning components. Effectiveness needs to be viewed from an overall DUI JCS perspective.

Essential to the development of effective adjudication and sanctioning components is the research testing, evaluation and comparison of traditional DUI A&R countermeasures with alternative or streamlined countermeasures. The California evaluation of the effect of multiple DUI offender license suspension or referral to treatment is a case in point. It determined that alcohol abuse treatment offered no advantage over mandatory license controls. This supported the traditional countermeasure approach of 1) the retention of accurate DUI conviction records, 2) postconviction treatment referral, rather than preconviction, and 3) the use of license restriction action along with treatment.22/

To put the "preferred" referral system into effect will require the resolution of a number of major adjudication and sanction policy issues, such as streamline case disposition, e.g. pretrial conferences, qualified personnel, e.g., DUI judge training in alcoholism, reorganize machinery, e.g., all DUI courts shall be courts of record, alternative case processing, e.g., deferred prosecution, and alternative sanctioning, e.g., lesser penalities for first offense and severe penalities for multiple offenses.

DUI CJOs have a major stake in the outcome of these issues. They must give guidance to their State legislative bodies on these thorny policy issues.23/ This guidance will permit legislatures to properly structure judicial, prosecutorial and referral authority. The resolution of these policy issues will only occur if judges, proseuctors, probation and public health officers, and defense counsel pool their knowledge and experience. Areas of disagreement and conflict will need to be identified and means of resolution explored.

DUI A&R countermeasure professional standards or guidelines and operational models will facilitate A&R understanding, cooperation and development.24/ The research testing and comparing of A&R countermeasures will provide vital "real world" effectiveness "feedback" to professional standard setting and model implementing organizations. This "feedback" should help judges and CJOs face up to why their "preferred" referral system is not the "real" referral system.

The construction of complimentary and effective adjudication and sanctioning components to the "preferred" referral system will require major emphasis on streamlined case disposition, additional, qualified personnel, the reorganization of misdemeanor courts and the development of effective sanctions. Without this emphasis the "preferred" referral system is unrealistic and unachievable. If complimentary and effective adjudiction and sanctioning components are not constructed, unacceptable and perceived ineffective alternative case processing techniques will continue to be the predominate methods employed.

References

1. Unpublished paper entitled "The Development of Driving Under the Influence of Intoxicating Liquor Judicial Countermeasure Guidelines" submitted in April 1977, by George D. Brandt to the College of Public Affairs, American University, Washington, D.C., in partial fulfillment of the requirements for the degree of Masters of Public Administration.

   Mr. Brandt, who is employed as Chief, Adjudication Branch, Driver Licensing and Adjudication Division, Traffic Safety Programs, National Highway Traffic Safety Administration, U.S. Department of Transportation, undertook this research apart from his official duties. The views expressed in this paper are those of Judge Rupert A. Doan and Mr. Brandt and do not necessarily reflect those of the U.S. Department of Transportation.

2. In "An Evaluation of the Department of Transportation's Alcohol Safety Action Projects," Levy, Voas, Johnson and Klein, Journal of Safety Research, Winter 1978, Vol. 10, No. 4, 174, it was concluded that reductions in nighttime fatal crashes and high blood alcohol content drivers on the road in some of the ASAPs "resulted from increased general deterrence to drunk driving by social drinkers ... through the threat of increased enforcement, instead of the rehabilitation of problem drinkers."

   A December 1978 report to the California legislature on "An Evaluation of Alcohol Abuse Treatment As An Alternative To Drivers License Suspsension Or Revocation" concluded that the treatment effect of imposing mandatory license suspensions (12 months) on multiple DUI offenders had a superior impact on traffic safety indicators than alcohol abuse program participation. The report was jointly prepared by the California Department of Motor Vehicles and Department of Alcohol and Drug Abuse.

   The two departments felt that this evaluation couldn't be generalized to first offender programs. The number of DUI first offenders in California is twice as great as the multiple offender population and their recidivism rate is 50% less. The department's questioned whether based on the limited potential payoff, the expense of administering extensive treatment or imposing mandatory licensing action on DUI first offenders could be justified. According to the evaluation a first offender program would have to target 100,000 drivers to potentially impact 6,000 case for approximately the same impact only 55,000 multiple offenders would have to be targeted.

   California is one of the half dozen jurisdictions that does not mandate a license suspension for drivers convicted of their first DUI offense. It is also one of the few jurisdictions which required a limited presentence investigation of second DUI offenders. While the California courts have discretion to order a six month license suspension, it is imposed in only approximately

0.2% of the cases. Prior to enactment of the legislation evaluated by the two departments (Senate Bill 330), second and third DUI convictions resulted in a mandatory license suspension or revocation, respectively. SB 330 permitted offender participation in an alcohol abuse treatment program in lieu of this mandatory license action. Interestingly, 23 of the 38 jurisdictions with laws that authorize the issuance of some form of hardship license issue the hardship license to DUI offenders, usually first offenders.

3. James J. Alfini and Rachel N. Doan, "A New Perspective on Misdemeanor Justice," Judicature, April 1977, Vol. 60, No. 9, 425.

4. H. Ted Rubin, "New Directions in Misdemeanor Probation," Judicature, April 1977, Vol. 60, No. 9, 435.

5. See e.g., Cal. Penal Code Sections 1203(a) and 1203.10.

6. "Evaluation and System Description of ASAP Judicial Systems," Volume I, Technical Report, Institute for Research in Public Safety, Contract DOT-HS-4-00958, 1976, 90.

7. Supra note 6 at 127. Douglas C. Dodge in an article entitled "Plea Bargaining Revisited" in the State Court Journal, Fall, 1978, Vol. 2, No. 4, 13, says that no jurisdiction has completely eliminated pleas of guilty. He suggests that instead of elimination of the practice of plea bargaining, the practices may have been displaced to an earlier stage of the criminal justice process. He identifies four displacement types: "a) more realistic assessment and chargining; b) prosecution of or emphasis on only a portion of the caseload; c) precharge bargaining; or d) routinizing the bargaining process." The prosecution emphasis on DUI cases at .15% BAC or above is an example of an emphasis on only a portion of the caseload and routinization.

8. In the last several years plea bargaining has received extensive research attention. Considerable evidence has accumulated to indicate that with the "introduction of severe penalties, the various actors in the enforcement-adjudication-sanctioning process, whether police, judge, prosecutor, counsel or defendant--adjust their behavior either individually or collectively in such a way as to subvert the imposition of the formal penalties." "Traffic Offense Sentencing Processes and Highway Safety," Volume II, Technical Report, PRC Public Management Services, Inc., Contract DOT-HS-400970, 1977, 8-4.

While a few jurisdictions have limited or in some instances completely prohibited plea bargaining, the prohibition policy in Alaska is the only clear demonstration that plea bargaining of felony cases can be substantially reduced without swamping the criminal justice system. There is limited empirical evidence on the effect of such a prohibition with DUI and other misdemeanor cases.

"A Study of Plea Bargaining in Municipal Courts of the State of New Jersey," conducted in 1974 by the Northeastern Regional Office of the National Center for State Courts, focused on the New Jersey Supreme Court's prohibition of plea bargaining while intoxicated (DWI) and driving while impaired law. (NJSA 39:4-50 (A) and 39:4-50 (B) New Jersey enacted its driving while impaired law to mitigate the harshness of DWI law. The prohibition and a pre-prohibition reporting requirement resulted in a substantial jump in the percentage of cases going to trial. While the municipal courts were learning to cope with the increased number of trials, one negative fairness result was a reduction in average DWI trial time from 47 minutes in 1973 to 36 minutes in 1974.

The Center supported the retention of the two tier New Jersey law as conducive to a high alcohol related offense conviction rate. It also favorably referenced 1974 Massachusetts legislation which vitiated a mandatory 1 year license suspension by providing for offender participation in a driver education program. According to the Center, the major argument for passage of this legislation was the reluctance of judges and juries to convict for DUI due to the perceived harshness of the sanction. A 1978 "Report to the Governor and the General Court on the Driver Alcohol Education Program" by the Massachusetts' Division of Alcoholism, Department of Public Health found the 1974 legislation "more effective since large numbers of offenders are being adjudicated under its provisions and intentions."

9. Supra note 6 at 97-99, 107-108 and 113-115.

10. Supra note 6, Vol. 5: Phoenix, Arizona Case Study, at 54.

11. Thomas R. Clay and Paul R. Swenson, "Selective Enforcement of Drunken Driving in Phoenix, Arizona," Journal of Safety Research, Fall 1978, Vol. 10 No. 3, 130, 134.

12. Supra note 10, at 47-48.

13. Supra note 10.

14. Supra note 10, at 47.

15. Turoff, Murray, "Delphi and its potential impact on information systems," AFIPS Conference Proceedings, Vol. 39, Fall Joint Computer Conference, AFIPS Press, Montvale, New Jersey, November, 1971, pp. 317-326.

16. Id., at 317. The Delphi technique has been used in the criminal justice field to determine police values and judges' views about weighted workload measures. Terry L. Cooper, "The Delphi Project on Police Values," Presentation to the Academy of Criminal Justice Sciences, March 22, 1973, Omaha, Nebraska and David P. Doane, "Court Case Weights Using The Delphi Method: Report On An Experiment In Michigan Circuit Courts," Unpublished Study, Oakland University, February 1976. It has also been used to obtain a consensus of experts on the effectiveness of traffic accident countermeasures. Highway Safety Needs Study, "Evaluation of Traffic Accident Counteremasures By The Highway Safety Needs Study Advisory Panel," Volume II, Appendix B, Research Triangle Institute, November 1975.

17. Supra note 15, at 319.

18. The formulas used are found in Langley, Russell, Practical Statistics, Drake Publishes, Inc., pp. 62-65 (1971). The method used to calculate the arithmetic mean is to (1) determine the frequency of the values, i.e., numberic code, (2) choose an assumed mean X, (3) subtract the assumed mean from each value to get the difference (plus and minus differences are separated), (4) multiply the frequency by the difference, (5) add up the plus values and the minus values, (6) subtract the minus total from the plus total and call the answer "A" = $E(x-x_0)$ (7) add up the total number of observations (n) in the frequency column, and (8) calculate the arithmetic mean using the following formula:
$X_0 + \frac{A}{n}$.

19. Id. To calculate the standard deviation, each differences value will be multipled by its corresponding value of frequency times difference. All of the values added up will give an answer called "B" = $E(x-x_0)2$. All these answers are plus since a minus number multipled by another minus number gives a plus answer. The standard deviation can then be calcualted from the following formula: standard deviation =
$\frac{B - \frac{A2}{n}}{n - 1}$, squared.

20. Supra note 18. The coefficient of variation is equal to the standard deviation divided by the mean and ranges upward from zero.

21. Fairfax, one of the ASAP jurisdictions, evolved from a deferred prosecution alternative to a deferred sentence alternative case processing method. From early 1972 when the Fairfax ASAP became operational until early 1975 the prosecutor, assisted by the ASAP Probation Office, made a pre-trial determination of the defendant's suitability for referral to rehabilitation. DUI cases were continued and successful completion of rehabilitation resulted in reduction or dismissal. From 1972 through 1975 an estimated 80% of 14,000 DUI arrests were placed in the ASAP program. In 1975 the judges, rather than the prosecutors, began to take a more active role in determining referrals to ASAP.

The Virginia legislature in 1975 established a statewide ASAP by which a court "with or without a finding of guilt by the court or jury", could refer the accused DUI offender to a rehabilitation program. Before the court made such a referral, it was required to consider whether the accused had previously participated in any other alcohol rehabilitation program. (Section 18. 2-271 Code of Virginia.)

In 1976 the Fairfax courts spelled out the following DUI ASAP referral policy:

"o All defendants requesting ASAP entered a guilty plea on the original charge prior to being granted ASAP participation.

o Rather than a continuance, the defendant's imposition of sentence was suspended for six months.

o Participation in ASAP was limited to those persons who had not previously participated in the program and whose BAC was .23% or less."

In 1976 51.6% of 3,310 cases screened by the courts were referred to ASAP; 34.9% were tried; 12.9% were referred directly to treatment; and .6% were unknown or continued. In 1976 25% of the 3,711 final dispositions were convicted of DUI; 63% were reduced, usually to reckless driving and 4% were nolle prossed or dismissed. See Technical Summary, Annual Report 1976, Fairfax Alcohol Safety Action Project, DOT-HS-067-1-087, June 30, 1977, 6-9.

In 1978 the Minnesota Legislature, based on the experience of its Hennepin County ASAP, changed the terminology of its DUI presentence investigation law to "alcohol problem assessment." Two reasons were given for this change. They are:

> "The first was to accomodate a court which might choose a somewhat different sentencing technique and which might therefore technically conduct the investigation post-sentence; and second, to accurately reflect the nature of the investigation and its scope, differentiating it from more wide-ranging presentence investigations conducted following convictions for other crimes."

Special 1978-79 Supplement to Final Report, Hennepin County Alcohol Safety Action Project, DOT-HS-048-1-064, April 1979, 1.

22. Supra note 2.

23. In its 1978 Fourth Annual Report to the Governor and the Virginia General Assembly, the Virginia Department of Transportation Safety, said that the statewide ASAP law had "undergone several changes from its original text in 1975, and is projected to be further amended as the need arises." The Department sees its role as one of determining and establishing "the proper balance between an appropriate law-enforcement deterrent policy and the referral of defendants into appropriate education/treatment programs."

    In February 1978 the Virginia General Assembly created a commission to study all aspects of the drinking and driving statutes of Virginia. One part of the study was a questionnaire sent to law enforcement, prosecutors, judges and local ASAP directors designed to provide the Commission with information on DUI court procedures and possible legislative revisions. On the question of conviction of DUI first offenders prior to referral 40% of the general district court judges (the court of first impression), 51% of the prosecutors and 72% of the prosecutors and 72% of the police favor such a requirement. The vast majority favored conviction of multiple offenders prior to referral.

24. NHTSA has been heavily involved in the last year in looking at the adequacy of DUI A&R professional standards and the development of model health/legal systems. "Comparative Analysis of Alcohol Highway Safety Judicial Standards and Existing Professional Standards," Institute for Research in Public Safety, Volumes I & II, DOT-HS-7-01625, December 1978; and, "Development of a Model Alcohol Safety Health/Legal Delivery System," Highway Safety Research Institute, DOT-HS-7-01812, June 1979.

ATTACHMENT A

LISTING OF DUIL* ADJUDICATION AND REFERRAL ACTION ITEMS

A. Action Items that Primarily Improve DUIL Adjudication

DESCRIPTION

1. Reduce DUIL scofflaws to less than 10% of the total number of arrests
2. Reduce DUIL case backlog to zero by the end of each calendar year
3. Improve judicial involvement in DUIL sentencing through feedback of results
4. Provide for pretrial conferences in DUIL cases to improve case disposition
5. Provide for DUIL judge selection based on the modified Missouri plan[1]
6. Provide for parajudicials to adjudicate non-jury DUIL cases
7. Provide for legal defenders in all DUIL cases
8. Require all DUIL judges to be lawyers
9. Decriminalize first offense DUIL
10. Provide for increased DUIL judgeships based on weighted caseload ratios
11. Require DUIL case processing to be within a judicial framework instead of in an administrative agency such as the New York Administrative Adjudication progra
12. Provide for full judicial sanction discretion, including license suspension
13. Provide for "deferred prosecution" where the DUIL charge is supended pending participation in a rehabilitation program
14. Require "deferred sentences" and dismissal of the DUIL charge if there are no repeat violations within six months
15. Provide for formalized plea bargaining and reduction of the DUIL charge to a lesser charge on the condition the offender participates in a rehabilitation program
16. Provide for judicial imposition of lesser penalties for first offense DUIL and imposition of severe penalties for multiple DUIL offenses.
17. Eliminate mandatory sanctions except for habitual offenders
18. Require all DUIL courts to be courts of record

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* DUIL means driving under the influence of intoxicating liquor and includes DUI and DWI, driving while intoxicated.

[1] The plan by which judge selection is made by a Governor from an Advisory Committee recommended list and the selected judge runs against his own record at election time

19. Provide State financing of the DUIL courts

20. Require the imposition of mandatory sanctions on second and subsequent offenses

21. Require DUIL judge training in alcoholism and alcohol abuse and the use of presentence investigators (PSI)

22. Establish State Supreme Court rules of judicial superintendence for DUIL case processing

23. Eliminate jury trials

B. Action Items that Primarily Improve DUIL Case Referral

DESCRIPTION

24. Provide judges with past driving record information prior to sentencing on DUIL cases

25. Provide whatever rehabilitation or treatment programs for DUIL offenders that are indicated by the presentence investigation

26. Require that problem drinker drivers be screened out from social drinker drivers prior to sentencing

27. Require that probation officers be involved in the diagnosis and referral of problem drinker drivers

28. Require the judicial sanctioning decision, including punishment and rehabilitation, to be spelled out in every DUIL conviction

29. Increase the time available for presentence investigations to a minimum of thirty (30) minutes a case

30. Increase the judicial time available to make DUIL sanctioning and referral decisions

31. Provide for a minimum level of 70% of judicial referral of DUIL offenders to retraining and rehabilitation

32. Provide for DUIL case referral follow-up through use of probation officers

33. Provide for probation officer training in alcoholism and alcohol abuse

34. Require that all DUIL referrals to retraining and rehabilitation be made part of the State driver license record

35. Establish within a State office of alcoholism the primary responsibility for

minimizing the effects of alcoholism and interfacing with the DUIL case referral system

36. Provide for referral system and rehabilitation costs through a special tax on alcohol beverages or offender charges.

37. Provide for immediate DUIL case probation revocation hearings on probation officer report of violation of probation conditions.

38. Provide the necessary treatment to deal with those causes that are identified as the basis for the offender's drinking problem

39. Develop and apply a repeat violator sentencing policy

40. Establish one agency to perform presentence investigations, make referrals and supervise the rehabilitation caseload

41. Increase judicial referrals of offenders with high blood alcohol concentrations

42. Use proxy measures, such as the number of problem drinker drivers identified and referred, to establish referral system effectiveness

43. Installation of an alcohol interlock safety system in vehicles of referred offenders to prevent the persom from starting his vehicle if his blood alcohol content is above the legal limit.

44. Require the development of a uniform judicial case referral system in multi-judge DUIL courts .

45. Provide for referral system management either jointly by the alcoholism and probation offices, reporting to the judiciary, or a semi-autonomous management agency staffed by a professional manager

46. Provide for Federal funds to initially establish local DUIL referral systems

47. Require a presentence investigation of all accused second and subsequent DUIL offenders

48. Require judicial use of presentence investigation reports before imposition of sentence

49. Provide for the diversion of all youthful (18-25 years old) DUIL offenders to retraining and rehabilitation programs

50. Provide for a mandatory minimum 2-day jail sentence for all offenders to be served on weekends or weeknights in conjunction with a diagnostic and retraining referral programs

51. Require defense counsel to confer with referral system personnel to assist in the development of an effective, tailored treatment program for his client

52. Require the development of a specific probation services plan, along with the presentence investigation, before the judicial imposition of formal probation

53. Require judicial imposition of summary or formal probation whenever there is referral to rehabilitation

54. Use public health investigators to conduct presentence investigations and recommend referral

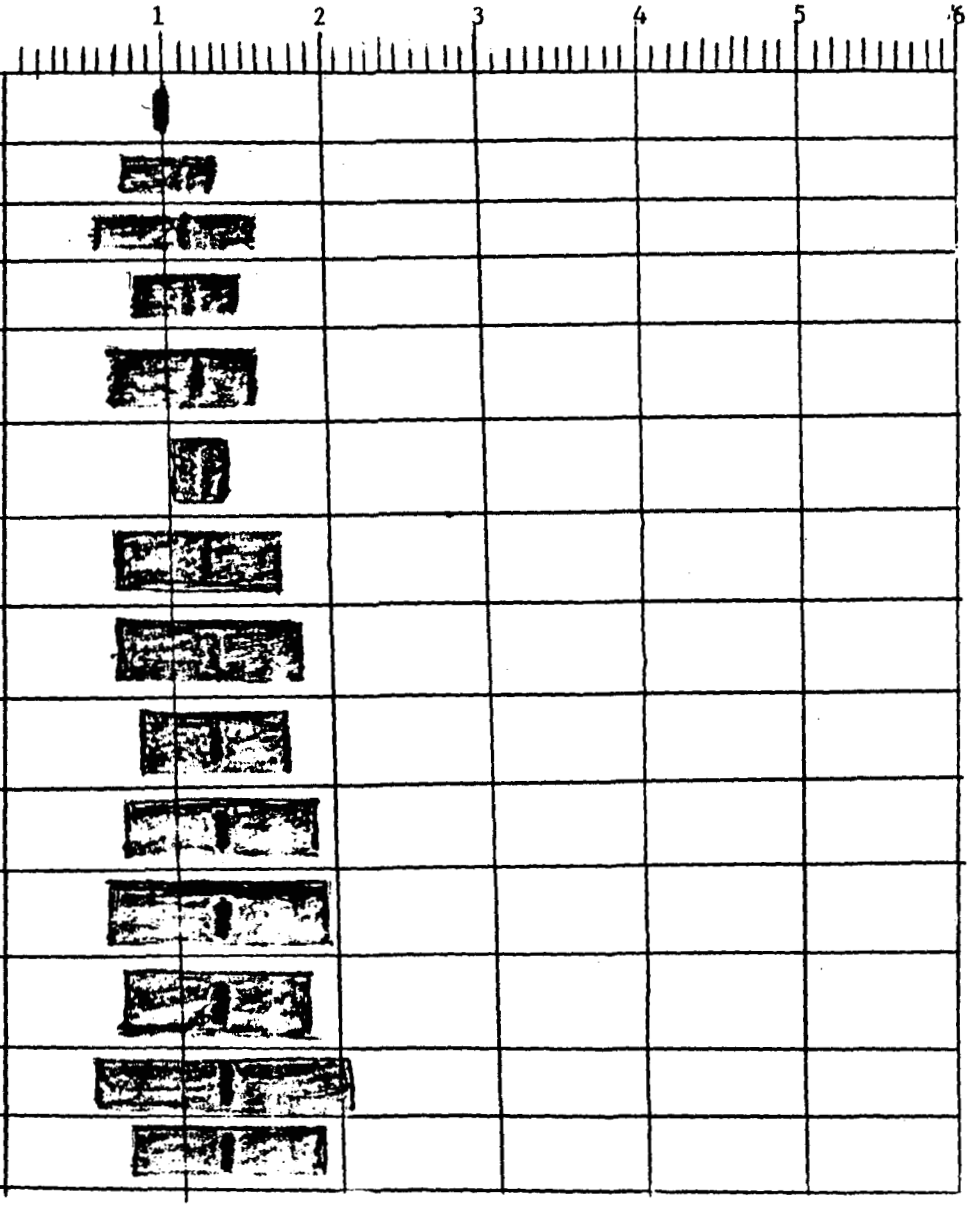
55. Installation of an operating time recorder in vehicles of referred offenders who are issued limited drivers licenses to monitor vehicle use and discourage vehicle use during restricted or unlawful times.

56. Provide for judicial use of formal probation, in addition to fines and jail, alcohol safety schools and out-patient rehabilitation programs, including Alcoholics Anonymous, for problem drinker drivers and alcoholics.

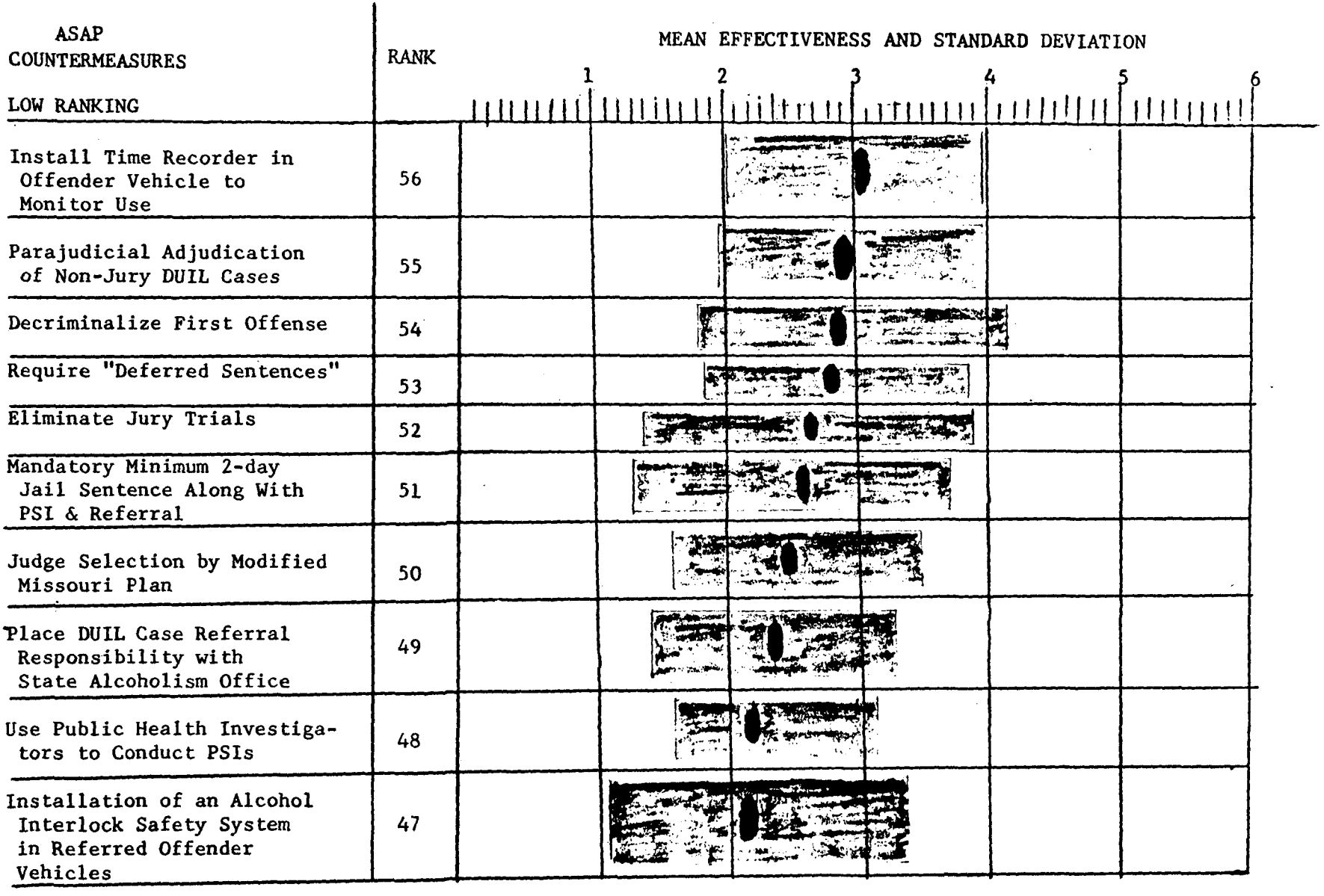
ATTACHMENT B

MEAN EFFECTIVENESS AND STANDARD DEVIATION

ASAP COUNTERMEASURES HIGH RANKING	RANK
Past Driving Record	1
Provide Necessary Treatment	2
Provide PSI Rehabilitation	3
Require Judicial Use of PSI	4
Provide for Formal Probation, Traditional Sanctions & Treatment for PDD	5
Require Probation Officer in PDD Referral	6
Provide for Probation Revocation Hearings	7
One Agency to Conduct PSIs, Refer & Supervise	8
Develop Uniform Referral System in Multi-Judge Courts	9
Provide for Probation Officer Training in Alcoholism	10
All DUIL Courts-Courts of Record	11
Require Summary or Formal Probation on Referral	12
Reduce Backlog to Zero	13
Reduce DUIL Scofflaws	14

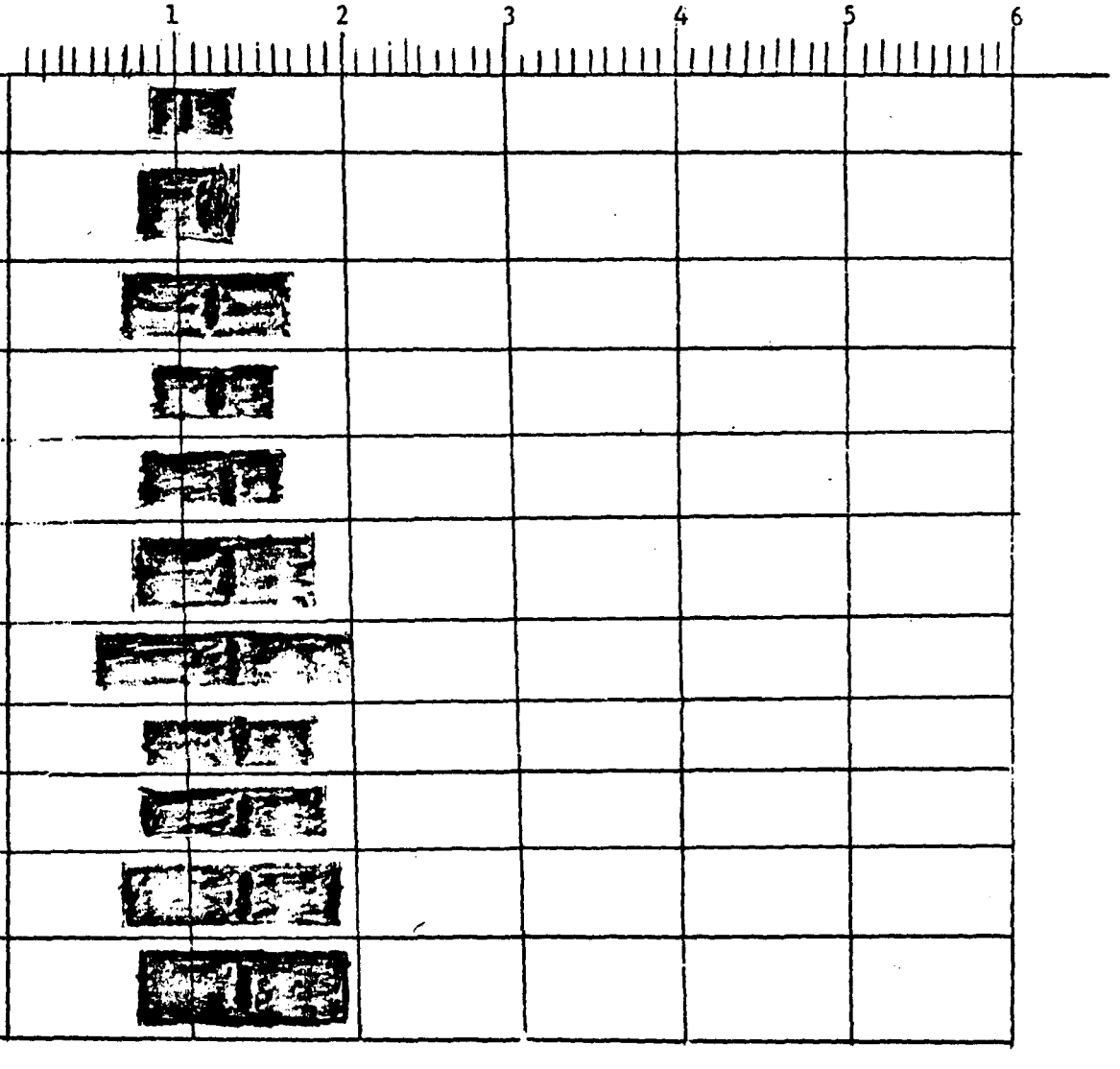


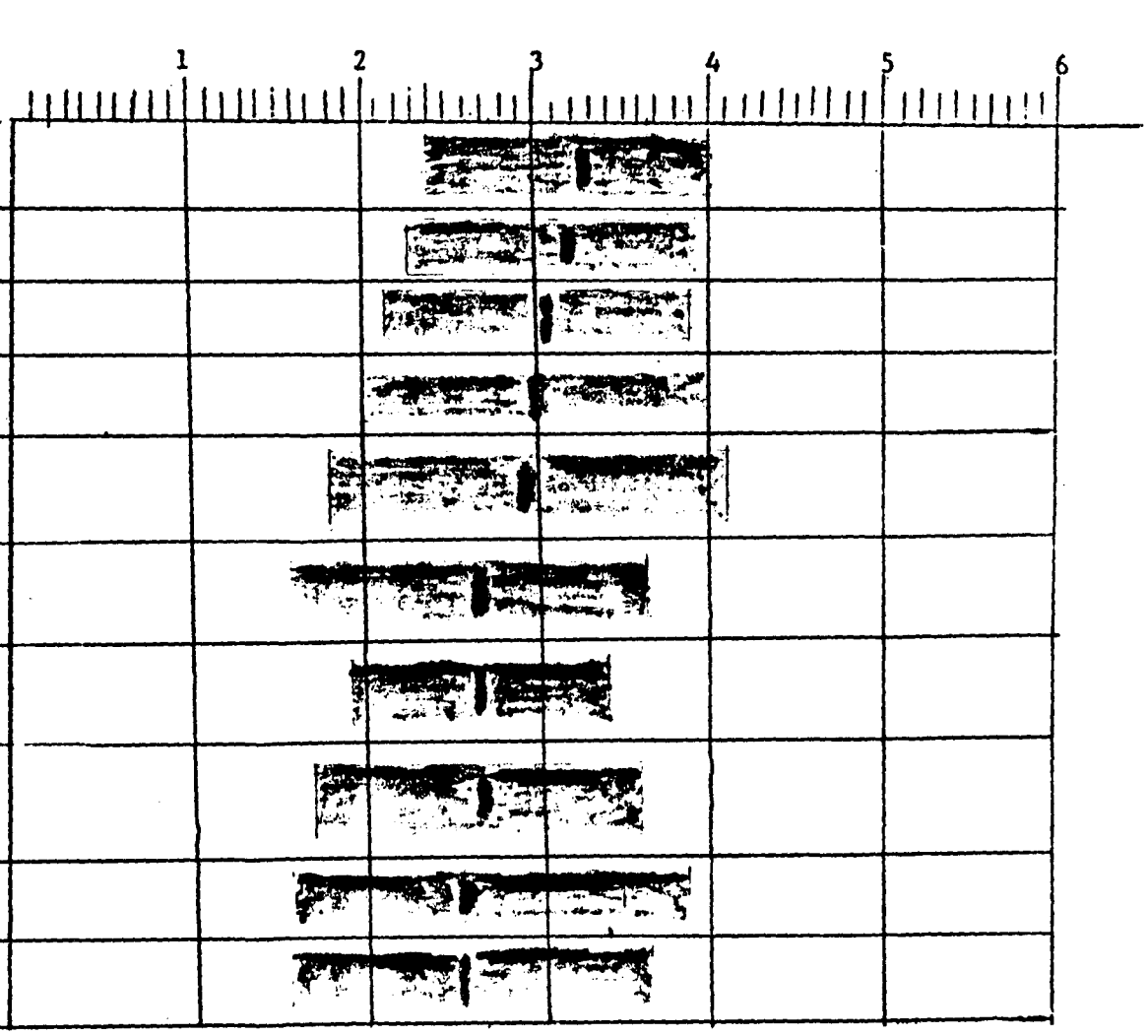
ATTACHMENT B



MEAN EFFECTIVENESS AND STANDARD DEVIATION

NON-ASAP COUNTERMEASURES HIGH RANKING	RANK
Past Driving Record	1
Provide for Formal Probation, Traditional Sanctions & Treatment for PDD	2
Provide for Probation Revocation Hearings	3
Require PSI for All Second and Multiple Offenders	4
Provide Necessary Treatment	5
Screen Problem Drinker Drivers from Social Drinker Drivers Prior to Sentencing	6
All DUIL Judges Lawyers	7
Provide PSI Rehabilitation	8
Full Judicial Sanction Discretion	9
Develop & Apply a Repeat Violator Sentencing Policy	10
Develop a Uniform Referral System in Multi-Judge Courts	11



NON-ASAP COUNTERMEASURES LOW RANKING	RANK	MEAN EFFECTIVENESS AND STANDARD DEVIATION
Parajudicial Adjudication of Non-Jury DUIL Cases	56	
Require "Deferred Sentences"	55	
Use Public Health Investigators to Conduct PSIs	54	
Decriminalize First Offense	53	
Mandatory Minimum 2-day Jail Sentence Along with PSI & Referral	52	
Install Time Recorder in Offender Vehicle to Monitor Use	51	
Provide for a Minimum of 30 Minutes Per PSI	50	
Place DUIL Case Referral Responsibility with State Alcoholism Office	49	
Eliminate Jury Trials	48	
Increase Available Judicial Time for DUIL Sanctioning	47	

ATTACHMENT C

Panel A 1

ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean	Official Position: Judge	Official Position: Probation	Official Position: Other*
ADJUDICATION							
Streamline Case Disposition							
2	Reduce Backlog to Zero	13	1.30	1.63	1.33	1.55	1.00
4	Pretrial Conferences	25	1.52	1.28	1.43	1.45	2.00
9	Decriminalize First Offense	54	2.92	1.81	3.14	3.27	1.71
22	Establish Supreme Court Rules	44	2.00	2.16	2.14	1.82	2.00
23	Eliminate Jury Trials	52	2.64	2.00	2.84	2.36	2.57
Provide for Additional, Qualified Personnel							
5	Judge Selection by Modified Missouri Plan	50	2.45	2.45	2.14	2.27	3.20
7	Legal Defenders in All DUIL Cases	31	1.62	1.40	2.14	1.73	1.42
8	All DUIL Judges Lawyers	20	1.42	1.36	1.14	1.73	1.14
10	Increase DUIL Judgeships	23	1.48	1.83	1.57	1.50	1.29
21	DUIL Judge Training in Alcoholism	17	1.38	1.44	1.00	1.27	1.57
Improve or Reorganize Machinery							
1	Reduce DUIL Scofflaws	14	1.30	1.57	1.33	1.18	1.16
3	Feedback Sentencing Results	18	1.40	1.32	1.43	1.18	1.71
11	DUIL Case Processing within Judicial Framework	30	1.59	2.08	1.83	1.82	1.33
12	Full Judicial Sanction Discretion	22	1.46	1.36	1.43	1.64	1.57
18	All DUIL Courts - Courts of Record	11	1.28	1.36	1.71	1.09	1.14
19	State Financing of DUIL Courts	41	1.96	2.00	2.00	1.82	2.00
Alternative Case Processing and Sanctioning							
6	Parajudicial Adjudication of Non-Jury DUIL Cases	55	2.96	2.44	3.14	1.90	2.00
13	Provide for "Deferred Prosecution"	28	1.56	1.84	1.57	1.45	2.14
14	Require "Deferred Sentences"	53	2.86	1.79	2.71	3.18	2.50
15	Provide for Formalized Plea Bargaining & Charge Reduction	45	2.04	1.21	2.00	2.18	2.00

* Because of the small numbers, prosecutors and defense counsel are included together.

Note: DUIL means driving under the influence of intoxicating liquor and includes DUI and DWI.

ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean	Official Position: Judge	Official Position: Probation	Official Position: Other
16	Lesser Penalties for First Offense/Severe for Multiple	27	1.52	1.40	1.43	1.36	1.71
17	Eliminate Mandatory Sanctions for Habitual Offenders	37	1.76	1.48	1.71	1.82	1.71
20	Imposition of Mandatory Sanctions on Second & Subsequent	46	2.12	1.32	2.57	1.82	2.14
REFERRAL							
Develop & Improve Referral Machinery							
30	Increase Available Judicial Time for DUIL Sanctioning	43	1.98	1.84	1.43	2.00	1.50
32	Use Probation Officers for DUIL Referral Follow-up	26	1.52	1.46	1.43	1.60	1.43
35	Place DUIL Case Referral Responsibility with State Alcoholism Office	49	2.36	2.32	2.17	2.10	2.71
40	One Agency To Conduct PSIs, Refer & Supervise	8	1.25	1.64	1.14	1.10	1.33
45	Referral Management jointly by Judiciary or Semi-Autonomous	39	1.84	1.92	1.57	1.10	1.33
47	Require PSI for All Second and Multiple DUIL Offenders	24	1.50	1.40	1.43	1.20	1.14
49	Divert All Youthful DUIL Offenders to Rehabilitation	38	1.77	1.92	1.14	1.30	1.71
50	Mandatory Minimum 2-day Jail Sentence Along with PSI & Referral	51	2.58	1.84	2.72	2.20	2.71
Develop or Improve Procedures							
26	Screen Problem Drinker Drivers (PDD) from Social Drinker Drivers Prior to Sentencing	15	1.38	1.28	1.00	1.60	1.48
34	Require Referrals to be Indicated on Driver Record	32	1.64	1.84	1.57	1.31	2.14
41	Increase Referrals of High BAC Offenders	21	1.44	1.44	1.29	1.55	1.57
48	Require Judicial Use of PSI Reports Prior to Sentence	4	1.12	1.28	1.00	1.09	1.29
55	Install Time Recorder in Offender Vehicle to Monitor Use	56	3.04	2.95	3.17	2.91	2.86

ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean	Official Position: Judge	Official Position: Probation	Official Position: Other
REFERRAL							
Provide for Adequate Referral & Treatment Capabilites							
25	Provide PSI Indicated Rehabilitation	3	1.11	1.16	1.00	1.09	1.29
27	Require Probation Officer Involvement in PDD Referral	6	1.20	1.32	1.14	1.36	1.14
36	Impose Special Tax on Alcohol Beverages for Referral Costs	36	1.76	2.40	1.86	1.20	2.57
38	Provide Necessary Treatment for Problem Drinking Cases	2	1.08	1.56	1.14	1.20	1.20
43	Install Interlock Safety System in Referred Offender Vehicles	47	2.20	2.88	2.00	2.00	2.14
46	Provide for Federal Funds to Initially Establish DUIL Referral Systems	34	1.65	1.52	2.00	1.64	1.57
54	Use Public Health Investigators to Conduct PSIs	48	2.29	2.52	2.29	1.30	2.00
Improve Referral Processing							
24	Provide Past Driving Record Information to Judges Prior to Sentencing	1	1.00	1.16	1.00	1.00	1.00
37	Provide for Immediate DUIL Probation Revocation Hearings on Violation of Terms	7	1.20	1.68	1.00	1.09	1.57
53	Require Summary or Formal Probation on Referral	12	1.28	1.44	1.14	1.18	1.71
56	Provide for Formal Probation, Traditional Sanctions & Treatment for PDD	5	1.16	1.28	1.00	1.00	1.29
Develop Effectiveness Measures & Uniform Plans							
28	Require Sanctioning Decision to be Spelled Out in Every Conviction	35	1.68	1.28	1.71	1.64	1.71
29	Provide for a Minimum of 30 Minutes Per PSI	16	1.38	1.64	1.14	1.36	1.83

Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean	Official Position Judge	Official Position Probation	Official Position Other
31	Provide for a Minimum Referral Level of 70%	40	1.91	1.80	1.86	1.36	1.60
39	Develop & Apply a Repeat Violator Sentencing Policy	29	1.59	1.28	1.43	1.55	1.57
42	Use Proxy Measures, such as Number of PDDs Referred, to Determine Effectiveness	42	1.96	1.92	2.17	2.09	2.00
44	Develop a Uniform Referral System in Multi-Judge Courts	9	1.25	1.52	1.33	1.18	1.43
52	Develop Probation Services Plan Prior to Formal Probation	19	1.40	1.68	1.29	1.45	1.43
Develop Trained Health/ Legal Personnel							
33	Provide for Probation Officer Training in Alcoholism	10	1.28	1.44	1.29	1.18	1.58
51	Require Defense Counsel to Confer with Referral System Personnel	33	1.64	2.12	1.71	1.71	1.60

Non-ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean
ADJUDICATION				
Streamline Case Disposition				
2	Reduce Backlog to Zero	37	2.20	1.60
4	Pretrial Conferences	21	1.59	1.50
9	Decriminalize First Offense	53	3.00	1.96
22	Establish Supreme Court Rules	38	2.24	1.77
23	Eliminate Jury Trials	48	2.59	1.45
Provide for Additional, Qualified Personnel				
5	Judge Selection by Modified Missouri Plan	43	2.38	2.59
7	Legal Defenders in All DUIL Cases	32	1.91	1.41
8	All DUIL Judges Lawyers	7	1.27	1.18
10	Increase DUIL Judgeships	45	2.48	2.23
21	DUIL Judge Training in Alcoholism	22	1.59	1.68
Improve or Reorganize Machinery				
1	Reduce DUIL Scofflaws	40	2.24	1.14
3	Feedback Sentencing Results	12	1.39	1.48
11	DUIL Case Processing within Judicial Framework	14	1.40	2.36
12	Full Judicial Sanction Discretion	9	1.28	1.41
18	All DUIL Courts - Courts of Record	16	1.45	1.23
19	State Financing of DUIL Courts	44	2.45	1.95
Alternative Case Processing and Sanctioning				
6	Parajudicial Adjudication of Non-Jury DUIL Cases	56	3.25	2.36
13	Provide for "Deferred Prosecution"	23	1.59	1.27
14	Require "Deferred Sentences"	55	3.14	1.64
15	Provide for Formalized Plea Bargaining & Charge Reduction	41	2.27	1.32

Non-ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean
16	Lesser Penalties for First Offense/Severe for Multiple	26	1.67	1.19
17	Eliminate Mandatory Sanctions for Habitual Offenders	35	2.14	1.59
20	Imposition of Mandatory Sanctions on Second & Subsequent	31	1.81	1.27
REFERRAL				
Develop & Improve Referral Machinery				
30	Increase Available Judicial Time for DUIL Sanctioning	47	2.58	1.45
32	Use Probation Officers for DUIL Referral Follow-up	27	1.67	1.55
35	Place DUIL Case Referral Responsibility with State Alcoholism Office	49	2.64	2.52
40	One Agency to Conduct PSIs, Refer & Supervise	25	1.64	1.77
45	Referral Management Jointly by Judiciary or Semi-Autonomous	33	1.95	2.14
47	Require PSI for All Second and Multiple Offenders	4	1.19	1.68
49	Divert All Youthful Offenders to Rehabilitation	20	1.55	1.77
50	Mandatory Minimum 2-day Jail Sentence Along with PSI & Referral	52	2.95	2.00
Develop or Improve Procedures				
26	Screen Problem Drinker Drivers (PDD) from Social Drinker Drivers Prior to Sentencing	6	1.24	1.45
34	Require Referrals to be Indicated on Driver Record	15	1.43	1.64
41	Increase Referrals of High BAC Offenders	24	1.59	1.68
48	Require Judicial Use of PSI Reports Prior to Sentence	17	1.45	1.68
55	Install Time Recorder in Offender Vehicle to Monitor Use	51	2.68	2.95

Non-ASAP Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean
REFERRAL				
Provide for Adequate Referral & Treatment Capabilities				
25	Provide PSI Indicated Rehabilitation	8	1.27	1.84
27	Require Probation Officer Involvement in PDD Referral	28	1.70	1.50
36	Impose Special Tax on Alcohol Beverages for Referral Costs	34	2.05	1.64
38	Provide Necessary Treatment for Problem Drinking Cases	5	1.24	1.52
43	Install Interlock Safety System in Referred Offender Vehicles	36	2.14	2.64
46	Provide for Federal Funds to Initially Establish DUIL Referral Systems	42	2.32	2.14
54	Use Public Health Investigators to Conduct PSIs	54	3.05	2.59
Improve Referral Processing				
24	Provide Past Driving Record Information to Judges Prior to Sentencing	1	1.05	1.09
37	Provide for Immediate DUIL Probation Revocation Hearings on Violation of Terms	3	1.18	1.50
53	Require Summary or Formal Probation on Referral	13	1.40	1.64
56	Provide for Formal Probation, Traditional Sanctions & Treatment for PDD	2	1.09	1.36
Develop Effectiveness Measures & Uniform Plans				
28	Require Sanctioning Decision to be Spelled Out in Every Conviction	29	1.73	1.64
29	Provide for a Minimum of 30 Minutes per PSI	50	2.68	1.82

Countermeasures by Category, Subcategory and Number	Name	Total Rank	Total Mean	Knowledge Mean
31	Provide for a Minimum Referral Level of 70%	39	2.24	1.75
39	Develop & Apply a Repeat Violator Sentencing Policy	10	1.36	1.41
42	Use Proxy Measures, such as Number of PDDs Referred, to Determine Effectiveness	46	2.48	1.65
44	Develop a Uniform Referral System in Multi-Judge Courts	11	1.36	2.18
52	Develop Probation Services Plan Prior to Formal Probation	19	1.52	1.90
Develop Trained Health/ Legal Personnel				
33	Provide for Probation Officer Training in Alcoholism	18	1.50	1.64
51	Require Defense Counsel to Confer with Referral System Personnel	30	1.73	2.23

AN HONEST IMPLIED CONSENT LAW

Richard W. Hall, B.S., LL.B.
Village Prosecutor
Park Forest, Illinois

April, 1979

FALSE LAW-SCIENCE RELATIONSHIP:

Illinois was the last state in the union that yielded to federal pressure to pass an implied consent law. The eleventh hour enactment bore little resemblance to the prior legislative drafts or similar laws adopted by other states--except that it was based on the same false law-science relationship that pervades all implied consent laws. It is doubtful that the Illinois legislature, or for that matter, most other legislative bodies, ever were aware of, or considered, the following scientific truths when passing such laws:

a. *"that in actual law-enforcement practice, when a breath sample is analyzed for alcohol, the quantity found cannot be used to calculate the simultaneously existing actual blood concentration without making assumptions having uncertain validities in any given case because they have not been assessed."* (1)

b. (The recommended scientific procedure for breath analysis:) *"The officer will run a blank (i.e., a sample of room air) to make certain that there is no contamination of the ampoule or apparatus. In the test ampoule he obtains a reading of the breath of the accused as described earlier. He then runs the standard concentration of alcohol in air (i.e., a simulator test) in the test ampoule to check the calibration and overall operation of the apparatus and sensitivity of the ampoule. When the officer presents satisfactory agreement on <u>duplicate</u> analyses, blank determinations and standards, it is as certain that no error was made as it is with any laboratory analysis."* (2)

c. *"The two-test concept is very hard to sell to the prosecution and law enforcement agencies mainly because of the problem of differences between sequential tests. These differences are not errors but are inherent in the biological makeup of human beings. If defense lawyers would handle the two-test concept scientifically and would not use it as a means of destroying the evidence, I am sure that this concept would be acceptable."* (3)

d. *"Many of us * * have long urged that two tests be taken and if they agree within 10%, the average be used but that if they do not agree within 10% that both figures be reported. Bradford in Santa Clara County, California, has his operators run tests until two do agree within 10%. * * Such knowledge can place doubt on any single analysis."* (4)

e. *"Trying to decide as to whether a subject is on the rising or descending portion of the curve is useless. To really decide this would require a series of tests over an hour or so."* (5)

f. *"The illegal behavior is the basis of the citation and the action is then <u>corroborated</u> by the BAC."* (6)

In light of these scientific truths, it is indeed <u>inconceivable (7)</u> that our laws have incorporated concepts that erroneously infer or state:

° (THAT BREATH TESTING INSTRUMENTS ACCURATELY REPORT BLOOD ALCOHOL CONCENTRATIONS:)

Chart I taken from an American Medical Association Journal

article indicates that in a series of tests made on ten subjects, the variations between comparative samples of breath and blood varied by as much as -25% to +53%. From the beginning of the use of breath testing instruments, the famous medical committee affidavit supporting use of the testing devices merely stated they "will give comparable and reliable results for *estimating* the concentration of alcohol in the blood." (8)

° (THAT A SINGLE BREATH-TEST PROCEDURE IS INFALLIBLE AND INCAPABLE OF ERROR:)

The basis for duplicate tests is best stated:

"There are several factors that can alter the content of alcohol in the sample obtained. A falsely high answer would be obtained if there were liquid alcohol in the mouth from a recent drink. This effect disappears in less than 15 minutes and thus can be eliminated as a hazard by having the subject in the operator's presence for this length of time. Some mouthwashes and liquid breath sweeteners contain alcohol and the same precautions must be observed. Vomiting and regurgitation (and a belch) during the period when there is still a very high concentration of alcohol in the stomach could have the same effect. However, operators are trained to watch for these conditions and, for the most part, drivers are examined when there is little alcohol in the stomach. When suspected, DUPLICATE SAMPLES ARE TAKEN FIFTEEN MINUTES APART. Agreement of the two answers eliminates this possibility." (Insert by author) (9)

To realize the potential error from a belch, consider Chart II which compares the relative concentration of alcohol in lung fluids when a breathalyzer reads 0.10% (presumed level of intoxication) to that found in common alcoholic beverages. A spray of alcohol vapors in the mouth of an individual, from a belch or an external source, will cause an increased breathalyzer reading for several minutes thereafter. Without the second test, how can the breathalyzer operator determine that the alveolar air sample has not been contaminated by mouth alcohol?

° (THAT A SINGLE BREATH TEST HAS PROBATIVE VALUE IN PROVING ANY ELEMENT OF THE DWI OFFENSE:)

The basic elements of the corpus delicti of the DWI-alcohol offense are: (10)

a. Defendant was driving or in actual physical control of a vehicle;

b. at the place or places defined in the complaint;

c. while under the influence of intoxicating liquor

and the fourth element that is commonly overlooked is:

d. that all of the foregoing elements were concurrent in time.

Because the breath test is not concurrent in time with the occurrence, the result must be regarded as corroborative evidence, at best.

° (THAT A BREATH TEST (OR BLOOD TEST) ADMINISTERED IN A POLICE STATION CAN SOMEHOW ACCURATELY DEFINE A BLOOD ALCOHOL CONCENTRATION AT THE TIME OF AN OFFENSE:)

The general publication of the graph shown in Chart III led to a great deal of misconception pertaining to relating a blood alcohol test result to a prior occurrence. Those who were

misled (11) failed to comprehend that the graph depicted a theoretical curve that did not take into account biological variables familiar to those who had conducted induced intoxication cases. These variables are shown in the graph on Chart IV which shows: (a) the variations in the curve that are possible as oxidation and absorption occur at unpredictable rates; (b) the impossibility of predicting past or future alcohol levels from any two blood alcohol test results; and (c) the effects of food in the stomach on the initial rate of absorption (12).

To demonstrate the error that arises from inferring that the test result in the station defines a condition at the time of the occurrence on the road, assume that Dave and George both consumed the beverage and food, if any, in a tavern and that each had an accident on their way home from the tavern at 7:15 P.M.. Assume further that each was arrested about a half hour later and at the time of their arrest each had an odor of alcohol on their breath and as a result of the accident each exhibited behavior that would be supportive of probable cause for a DWI arrest. If both were administered a breath test at 8:45 P.M., the following comparisons could be made regarding actual breath tests taken at the time of the occurrence to those following the DWI arrest:

	7:15 P.M.	8:45 P.M.
DAVE:	0.125% BAC	0.105% BAC
GEORGE:	0.048% BAC	0.082% BAC

DAVE wouldn't suffer much from the erroneous inference, but GEORGE could stand a good chance of conviction of the DWI offense in some states, although he would have been entitled to a presumption of sobriety had he actually been tested at the time of the occurrence.

Whereas burn-off (oxidation) rates of alcohol in the human body average out to defineable values, there are wide variations in absorption rates. Delays in testing offenders coupled with erroneous inferences raised from the presumptive statutes, always work to the disadvantage of the arrested person.

THE TREND:

These false law-science concepts have been tolerated, perhaps even nurtured, over the years, as desperation efforts were made to encourage easy identification, arrest and prosecution of society's plague--the drunken driver--the ends justifying the means. During the same period, there has been greater enlightenment concerning the failure of traditional sanctions to alleviate this plague--and a greater awareness of the enormity of the problem and more intelligent approaches that offer a better promise towards possibly reducing highway crashes and saving lives.

Whereas in the past it may have been considered expedient to arrest the drunk, convict the drunk, revoke the drunk's driving privileges, and have the drunk return to the highway as an uninsured drunk; it now appears to be more provident to arrest the drunkenness as well as the drunk, and let the recovered alcoholic keep the driving privilege as well as his insurance--while keeping court jurisdiction over the defendant for a prolonged period as motivation towards sobriety while driving a motor vehicle.

COUNTER-CURRENTS:

To arrest the drunkenness of an offender requires first a recognition of that problem by the offender. To accomplish this recognition requires the assistance of a skilled therapist. The skilled therapist requires a detailed report of the arrest occurrence, among other things, from which to make a valid diagnostic evaluation and recommendations for treatment. Present day per se and implied consent laws have *negated* the gathering of this vital detailed information as the laws gravitate towards further reliance on the false law-science relationship.

Whereas in the past, the gravamen of the DWI offense was established by the detailed observations of the arresting officer at the scene of arrest, *corroborated* by other evidence such as chemical test data, everything has now turned topsy-turvy and the chemical test data has become primary evidence of an offense, and the gathering of detailed physical evidence has been cast into oblivion. To illustrate, consider this excerpt from the case of State -vs- Clark, 532 P. 2d 1142:

> "--that there is no reliable correlation between blood alcohol content and observable symptoms and that *all* persons are suffering impairment at 0.10 percent or more. * * The evidence concerning defendant's observable mental and physical condition *should not be considered* either as evidence of his blood alcohol content or as to the credibility of the chemical analysis offered as evidence."

Sensing the injustice of this position of "presumed guilt" from chemical test data, wary legislators and some judges have placed extraordinary standards and conditions upon administering chemical tests or admitting their results into evidence. Defense

attorneys have joined the fray and have employed forensic experts to expose the false law-science relationship. It has now become expert against expert, for those who can afford it (13), with resultant proliferation of false scientific dicta in appellate reports (14). Confusion reigns as court calendars are backlogged with DWI cases even from a pathetically low arrest rate (See Chart V.). Court administrators ponder what would ever be done if DWI arrests were increased 400%--a realistic expectation. Police balk at any effort to bring chemical test procedures within scientific guidelines. Enforcement personnel support the false law-science relationship, and further extensions thereof, in an effort to placate the police and hopefully increase DWI arrests, coercion of offenders to take breath tests, and conviction statistics. With some confidence, it can be stated that in some areas of the country, DWI enforcement is in disarray.

To bring order and progress to DWI enforcement programs, it will first be necessary to "get back to basics". There has been so much forensic error committed, that implied consent and per se laws will now have to be amended so as to *explicitly* state a true law-science relationship (see appendix). These amendments must include:

a. A concise statement that the usual presumptions are to be considered as interpretive of the test result at the time the test is given, and not as a standard of guilt of any offense (15)

b. That all test results are admissible in evidence subject to challenge for accuracy or any inference to be made therefrom (16);

c. That test results should be regarded as corroborative evidence of other facts that establish the corpus delicti of the DWI offense or as rebuttal evidence pertaining to affirmative defenses;

d. That the method for administering breath tests follow the scientific analytical procedure of two blanks, two breath samples and at least one standard test;

e. That only tests performed within 120 minutes measured from the DWI occurrence be considered as possibly probative of the DWI offense; stated as 120 minutes from an on-view arrest situation and 90 minutes from arrest for any other offense; and

f. That the refusal case be heard as a summary proceeding following the DWI case, with judicial discretion to impose a penalty of suspension of driving privileges *up to one year's duration.*

These amendments, and others consistent with them, will provide the following immediate benefits:

- A required return to gathering detailed on the scene evidence helpful to the prosecution as well as being useful in any diagnostic evaluation of defendant;
- Decrease the amount of police time and court time involved in processing the DWI offender;
- Relax requirements pertaining to recertification of testing officers and calibration of testing equipment;

- Termination of convictions based on the false law-science relationship;
- Increased numbers of arrested persons taking the chemical test with concurrent improvement of chances of identifying persons suffering some pathological condition simulating alcohol intoxication or identifying persons under the influence of some substance other than alcohol; and
- Better justice.

A fair approach to the significance of the chemical test, taken in consideration with other information contained in a detailed *open* file is conducive to an admission of guilt of the DWI offense. Admissions of guilt are precursors to time-saving diversion procedures that include diagnosis, treatment and behavioral attitude change without additional involvement of police time. That should be the objective of any worthwhile enforcement program. It is imperative that laws dealing with problem drinking drivers be kept within bounds that permit the development of treatment programs which can effect behavioral change. At the present time there does not appear to be any cure for alcoholism nor any known remedial program that supersedes all others. What works well in one community may not work well in another. Each community should be left to work out its own solution to local alcohol problems without state interference. Although progress is being made, not much has changed since the 1968 U.S. Supreme Court case of *Powell -vs- Texas* (17) which contained the following statement:

"Although numerous kinds of therapy and intervention appear to have been effective with various problem drinkers, the process of matching patient and treatment method is not yet highly developed. There is an urgent need for continued experimentation, for modifying and improving existing treatment methods, for developing new ones, and for careful well-designed evaluative studies. Most of the facilities that provide services for alcoholics have made little, if any, attempt to determine the effectiveness of the total program or of its components."

SUMMARY:

Implied consent and per se laws should be amended so as to state correct scientific principles. Such amendments will return enforcement procedures to a reliance upon detailed data collected by the police at the scene of the arrest of the DWI offender, only to be corroborated by the chemical test data.

The detailed arrest information and data from a correctly performed breath test is essential to convincing the offender of guilt of the DWI offense--a precursor to entry into any time saving diversionary program, and is also valuable in making a diagnostic evaluation of alcoholism. The diversionary programs offer greater hope for improved enforcement than traditional sanctions, and laws must not be passed that would impede this process, nor the development, modification or improvement of community based programs for dealing with problem drinking drivers.

CHART I

COMPARATIVE ANALYSIS - BREATH, BLOOD, BRAIN FLUIDS

MILLIGRAMS PER CENT

	BREATH	BLOOD	SPINAL FLUID
1.	213	284	294
2.	348	330	338
3.	171	175	164
4.	267	252	268
5.	233	244	276
6.	155	183	179
7.	135	84	99
8.	196	173	194
9.	196	224	244
10.	356	232	236

RESULTS OF COMPARATIVE TESTS REPORTED IN ARTICLE WRITTEN IN JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, VOL. 220, P. 865 (1972) BY JORGE VIAMONTES, M.D., ET AL., ENTITLED: ALCOHOL IN BREATH, BLOOD AND CEREBROSPINAL FLUID.

CHART II

STRENGTH OF ALCOHOL IN MOUTH

A. AFTER CONSUMING BEER: 189 CC/GALLON

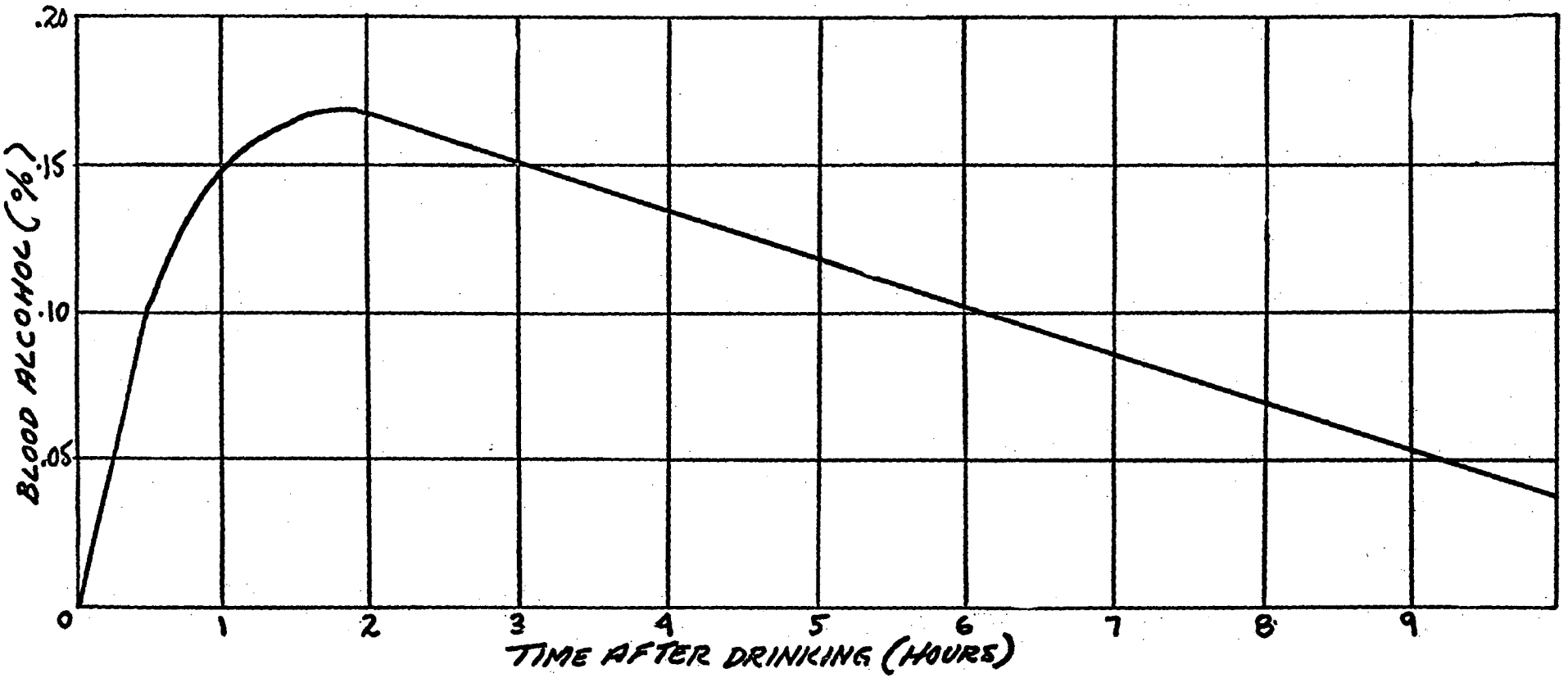
B. AFTER CONSUMING CHIANTI WINE: 492 CC/GALLON

C. AFTER CONSUMING CUTTY SARK WHISKEY: 1627 CC/GALLON

AT .10 % BLOOD ALCOHOL - 6.5 CC/GALLON

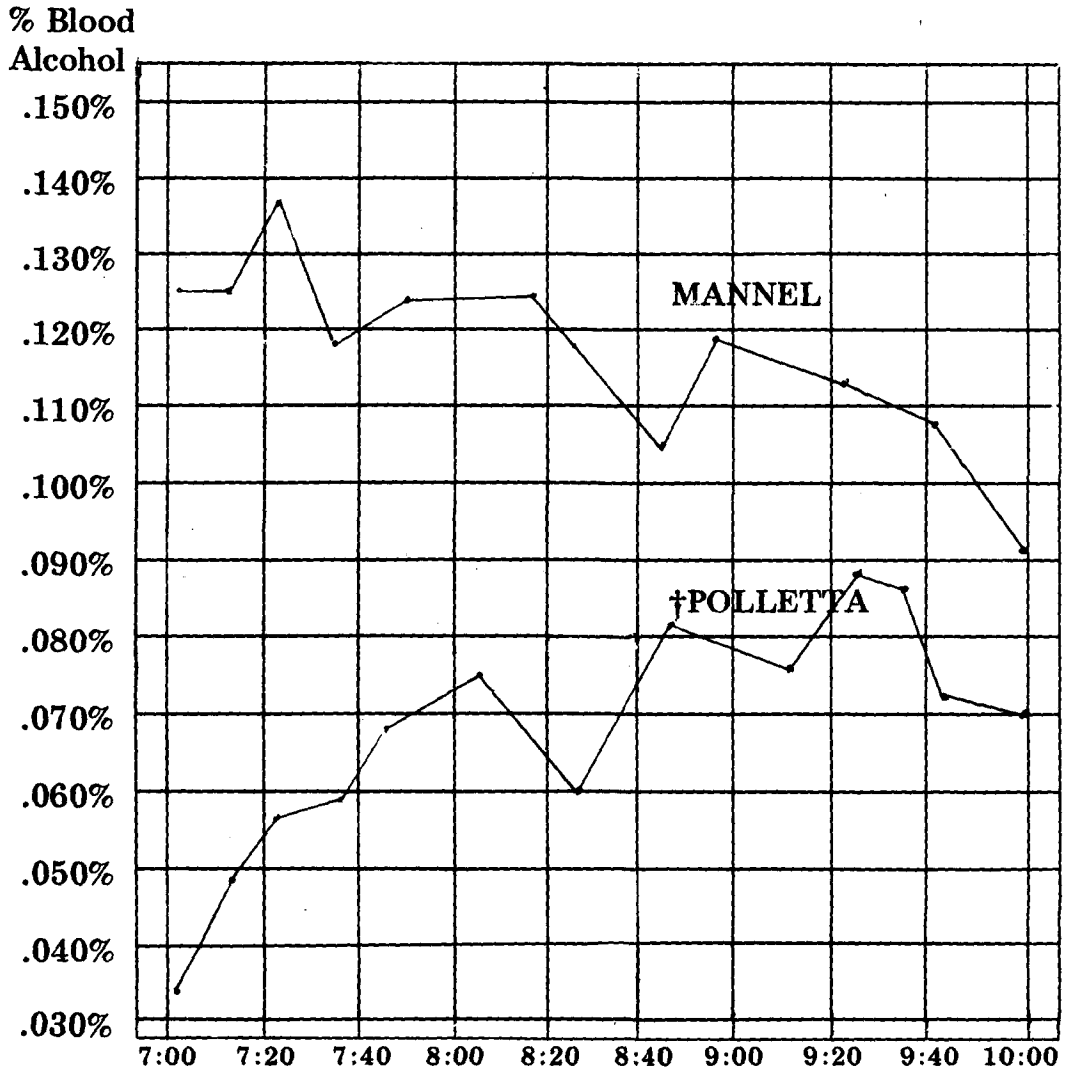
(STRENGTH OF ALCOHOL IN LUNG FLUIDS)

CHART III



ELIMINATION BY BOTH MECHANISMS, ORIDATION AND EXCRETION
ELIMINATION VARIES FROM PERSON TO PERSON
AVERAGE 150 POUND PERSON CAN ELIMINATE ABOUT ½ FLUIDE OUNCE OF ABSOLUTE ALCOHOL PER HOUR OR .015% PER HOUR.
ABOVE CHART SHOWS BLOOD ALCOHOL CURVE FOLLOWING THE DRINKING OF 8 OZ. OF WHISKEY.

CHART IV



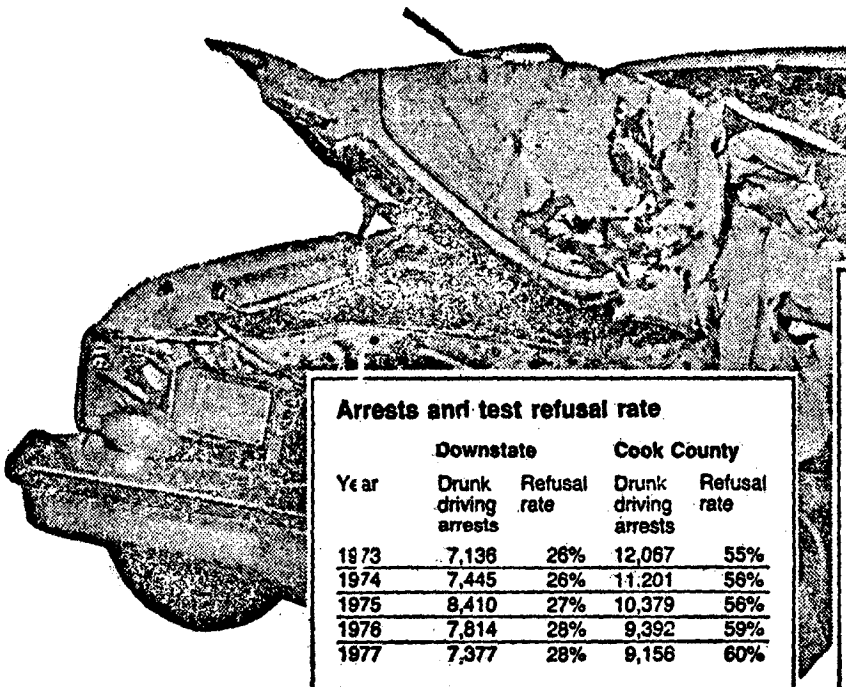
DAVE MANNEL 180*
Empty Stomach
Drank 300 cc
86.8 Proof Alcohol
Started 6:05
Stopped 6:35

GEO. POLLETTA 170*
Full Stomach
Drank 300 cc
86 Proof Alcohol
Started 6:05
Stopped 6:35

†Drank 25 cc more alcohol after this test

CHART V

Drunk driving in Cook County and Illinois

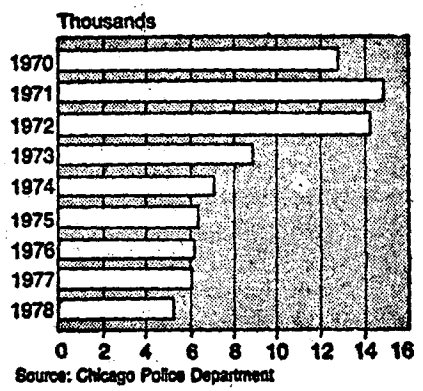


Arrests and test refusal rate

	Downstate		Cook County	
Year	Drunk driving arrests	Refusal rate	Drunk driving arrests	Refusal rate
1973	7,136	26%	12,067	55%
1974	7,445	26%	11,201	56%
1975	8,410	27%	10,379	56%
1976	7,814	28%	9,392	59%
1977	7,377	28%	9,156	60%

Source: Illinois Department of Public Health

Drunk driving arrests in Chicago



Source: Chicago Police Department

Reprinted, courtesy of the Chicago Tribune.

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3. - 6: Letters to author from Robert F. Borkenstein, Inventor of the Breathalyzer, Center for Studies of Law In Action, Indiana University, Bloomington, Indiana--dated February 23, 1973 and February 27, 1974.

7. M. F. Mason & K. M. Dubowski, supra; 9, 33

8. Breathalyzer Model 900 Instruction Manual, pp. 35, 36

9. Borkenstein & Smith, *The Breathalyzer and Its Applications*, Medicine, Science and the Law, October 1961

10. *People -vs- Williams*, 279 N.E. 2d 735, 737 (1972)

11. Dimond, Paul R., *A Reappraisal of Implied Consent and the Drinking Driver*, 3 Prospectus 139: 150-151

    Furrh, Daniel L., *Illinois New Implied Consent Law*, Illinois Bar Journal 61: No. 5, 242, 243 (Jan. 1973)

12. Richard W. Hall, *The Significance of Two Test Blood Alcohol Analysis*, 26 Illinois Police Association Official Journal, Vol. 59 (June 1973)

13. *State -vs- Whiting*, City Court of Tucson, Arizona; 5 National Traffic Law News 703 (1978)

14. Typical false forensic statements:

    "The test showed a blood alcohol level of 0.20 milligrams %" *People -vs- Hitch*, 527 P. 2d 361

    "The known solution must be what it purports to be, namely a 0.10 percent solution of alcohol and water." *State -vs- Ghylin*, 222 N.W. 2d 864

    "The blood-breath ratio is numerically expressed 2000:1" *State -vs- Mills*, 328 A. 2d 410

    "Medical studies demonstrate that the majroity of ingested alcohol is absorbed by the body within 15 to 20 minutes." *People -vs- Schrieber*, 119 Cal. Reptr. 812

    "A removal and reinsertion (of the ampoule in a breathalyzer) would affect subsequent readings because of the concept of refraction." *State -vs- Bryan*, 336 A. 2d 511

    See: *State -vs- Prociuk*, 368 A. 2d 436

15. *City of Cuyahoga Falls -vs- Mikolajczyk*, 187 N.E. 2d 197 (1962)

16. *People -vs- Bobczyk*, 99 N.E. 2d 567 (1951)

    McKay -vs- Texas, 235 S.W. 2d 173 (1950)

17. *Texas -vs- Powell*, 392 U.S. 514

APPENDIX

AMENDED ILLINOIS IMPLIED CONSENT LAW

(Ch. 95½, par. 11-501.1)

Sec. 11.501.1 Suspension of license - Implied Consent. (a) Any person who operates or is in actual physical control of ~~after-September-30,-1972,-drives~~ a motor vehicle anywhere within this State thereby consents, under the terms of this Section, to take and complete an ~~a-test-or-chemical~~ analysis of his or her breath to determine the alcoholic content of his or her blood when made as an incident to and following his or her lawful arrest, evidenced by the issuance of a Uniform Traffic Ticket, for an offense as defined in Section 11-501 of this Act or a similar provision of a municipal ordinance. Within a reasonable time following any such arrest, an arresting ~~a-police~~ officer shall request the person arrested to submit to such analysis of his or her breath upon a breath testing instrument approved by the Department of Public Health in consultation with the Director of the Department of Law Enforcement, which will automatically display the test results visually to the arrested person and provide for an automatic printed test record. ~~A-test~~ An analysis shall consist of 2 breath ~~analyses~~ tests taken not less than 15 minutes apart, followed proximate thereto by a standardizing test to demonstrate the accuracy of the testing equipment at the time of such analysis. Each printed recording shall also contain an automatically printed record of the blank air sample test reading of the testing device made immediately prior to the recording of each breath test result for the tested person. Each recording shall contain the date and time

on which the test was given, which may be manually printed on the recording.

The officer shall make an oral statement and concurrently deliver to the arrested person a printed notice supplied by the Secretary of State in the English and Spanish languages and any other languages deemed appropriate by the Secretary of State which shall advise the arrested person:

(1) that by his driving or being in actual physical control of a motor vehicle in this State an individual he has consented to take and complete an analysis a test consisting of 2 breath analyses tests which shall be administered not less than 15 minutes apart, to determine the alcoholic content of his or her blood when such an analysis test is made as an incident to and following the his lawful arrest for an offense of driving a motor vehicle while under the influence of intoxicating liquor,

(2) that he an individual may refuse to submit to either such analysis tests and that his or her refusal to submit to either analysis test within 30 90 minutes after receiving the notice may will likely result in the suspension of his or her privilege to operate a motor vehicle for 3-months-on-his first-such-arrest-and-refusal-and-for-6-months-on-his-second and-each-subsequent-such-test-and-refusal-within-5-years; a period of up to one year's duration.

(3) that he an individual may consult with an attorney or other person by phone or in person within that 30 90 minutes,

(4) that his the individual's failure to submit to and complete the analysis test may be admitted in evidence against him the individual in any hearing concerning the suspension, revocation or denial of his or her driver's license or permit,

(5) that he an individual will receive a duplicate original or a photocopy of the results record of any such analysis test to which he the individual submits at the request of the police, at the time the individual is released on bail,

(6) that the results of any such test may be introduced in evidence against the individual him to corroborate support other evidence tending to prove the charge of driving while under the influence of intoxicating liquor, and

(7) that a test result reading of 0.10% or more by weight of alcohol in the blood establishes a presumption that the person tested of being is under the influence of intoxicating liquor, at the time the test is given, and

(8) That the individual he may secure additional chemical tests at the individual's his own expense, and that such tests should be taken as soon as possible and are customarily available from hospitals, medical laboratories and physicians, and

(9) that once the individual indicates a refusal to submit to the requested analysis, the police will not thereafter make the test available to the individual.

~~(9) that upon his request full information concerning the results of such test he took at the request of the police~~

officer-will-be-made-available-to-him-or-his-attorney.

After being so advised, and after being issued a copy of a Uniform Traffic Ticket for an offense as defined in Section 11-501 of this Act or a similar provision of a municipal ordinance, the arrested person may study the written notice and may consult with an attorney, or other person, by phone or in person; but refusal to submit-to commence the test analysis within 30 90 minutes after being given the written notice shall constitute a refusal to take the test analysis. Failure to consult counsel shall not excuse or mitigate the effect of the refusal to take or complete the analysis test. No test under this section shall be given to any person without the written permission of that person; willful refusal to give such written permission, however, shall constitute refusal to submit to the test within the meaning of this Section.

If the arrested person is detained in the custody of the police after such analysis test has been administered, the police shall, whenever practicable, at the request of the arrested person, facilitate the prompt securing of an additional chemical test by a qualified person of the arrested person's choice and at his own expense as authorized by paragraph (f) of Section 11-501, and to transport the subject to a location within the police district when the subject has been charged under a municipal ordinance, or to a location within the county of arrest where services are available as defined in paragraph (f) of Section 11-501. If these-services-are-not-available-in-the-county-of-arrest,-then

transportation-shall-be-to-the-next-adjacent-county-where-the services-are-available.

(b) Any such analysis test made as an incident to and following the lawful arrest shall be performed according to uniform standards and procedures adopted by the State Department of Public Health in cooperation with the Director of the Department of Law Enforcement and an advisory committee of not less than three members from the academic and forensic community having skills and knowledge pertaining to analytical procedures used by the police for measuring ethyl alcohol Superintendent-of-State-Police. Such standards and procedures shall include:

(1) Rules and regulations for examining and licensing any individual who shall administer any such tests.

(2) Procedures for revoking the license of any such individual.

(3) Rules and regulations for examining and certifying to the periodic accuracy of calibration of any breath testing instrument.

Any-license-issued-to-any-individual-to-conduct-such-tests shall-expire-one-year-from-date-of-issuance-and-any-individual who-desires-to-be-licensed-again-must-be-re-examined. Any such breath testing instrument must have been tested for accuracy of calibration and certified accurate pursuant to such rules and regulations no more than 30 120 days prior to the day the arrested person is requested to submit to the test upon the instrument.

(c) Evidence of a refusal to ~~submit to the test or chemical~~ complete an analysis under this Section is ~~inadmissible~~ admissible only in a summary proceeding by the same judge, and prosecuted by the same authority, and following any hearing or disposition of the charge of driving under the influence of intoxicating liquor brought against the arrested person. ~~in any civil action or proceeding other than a hearing on the suspension of a person's privilege to operate a motor vehicle as provided under the provisions of this Section. Evidence of a refusal to submit to the test under this Section is inadmissible in an action under Section 11-501 of this Act; or in an action for violation of a local ordinance prohibiting driving a motor vehicle while under the influence of intoxicating liquor.~~ No evidence based upon a test or chemical analysis of breath shall be admitted into evidence in a proceeding under Section 11-501 or similar municipal ordinance unless corroborated by an automatically printed recording of the reading of the testing device and unless administered within 120 ~~150~~ minutes following such lawful arrest of the person tested for an on-view offense witnessed by the arresting officer, and within 90 minutes following the arrest of the person for an offense not witnessed by the arresting officer.

No evidence of any test taken pursuant to this Section is admissible in any criminal proceeding except in a proceeding under Section 11-501 or similar misdemeanor ordinance. No evidence of any test may be submitted in any a proceeding described in Section 11-501 until probable cause is shown that

the person was operating a motor vehicle in the State of Illinois while under the influence of intoxicating liquors.

(d) The arresting officer shall serve upon the arrested person at the time of release from custody, and thereafter file with the Clerk of the Circuit Court for the county in which the arrest was made, concurrent with the Uniform Traffic Ticket charging the arrested person with driving while under the influence of intoxicating liquor, a sworn statement naming the person refusing to take and complete the test analysis requested under the provisions of this Section. Such sworn statement shall identify the arrested person, his or her driver's license number and current residence address and shall specify the refusal of that person to take the ~~test~~ and complete the requested analysis and the time, place or places where such request was made. Such sworn statement shall include a summary statement that the arresting officer had reasonable cause to believe the person was ~~driving the~~ operating or in actual physical control of a motor vehicle within this State while under the influence of intoxicating liquor and that such analysis ~~test was~~ would have been made as an incident to and following the lawful arrest for an offense as defined in Section 11-501 of this ~~Act~~ Code or a similar provision of a municipal code, and in compliance with the provisions of this Act ~~and that the person, after being arrested for an offense arising out of acts alleged to have been committed while so driving refused to submit to and complete a test as requested orally and in writing as provided~~

in-paragraph-(a)-of-this-Section. The sworn statement shall be regarded as a complaint by the People or municipality indicated in the concurrently filed charge of driving while under the influence of intoxicating liquor, that prays for the suspension of the person's driving privileges for a period of up to one year.

The-Clerk-shall-thereupon-notify-such-person-in-writing that-his-privilege-to-operate-a-motor-vehicle-will-be suspended-unless,-within-28-days-from-the-date-of-mailing-of the-notice,-he-shall-request-in-writing-a-hearing-thereon. If-such-person-fails-to-request-a-hearing-within-such-28-day period,-the-Clerk-shall-so-notify-the-Secretary-of-State-who shall-automatically-suspend-such-person's-driver's-license; the-privilege-of-driving-a-motor-vehicle-on-highways-of-this State-given-to-a-nonresident,-or-the-privilege-which-an unlicensed-person-might-have-to-obtain-a-license-under-the Driver's-License-Act,-as-provided-in-Paragraph-(a)-of-this Section.

If-such-person-desires-a-hearing,-he-shall-file-a complaint-in-the-Circuit-Court-for-and-in-the-county-in-which he-was-arrested-for-such-hearing. The Clerk shall thereupon file said complaint with other charges pending against the arrested person, making all offenses returnable to court at the same time. The arrested person shall be regarded as a defendant under this section and may request particulars regarding the complaint before any hearing on the complaint. Such hearing shall proceed in the Court in the same manner

as other civil proceedings, except that the scope of such proceedings shall cover only the issues of whether the person was placed under arrest for an offense as defined in Section 11-501 of this Act Code or a similar provision of a municipal ordinance, whether the arresting officer had reasonable grounds to believe that such person was driving while under the influence of intoxicating liquor, whether the person was informed orally and in writing as provided in paragraph (a) that his or her privilege to operate a motor vehicle would be suspended if he or she refused to submit to and complete the test analysis and whether, after being so advised, he or she refused to submit to and complete the test upon request of the officer. If the Court finds the issues favorable to the prosecution, judgment shall be entered suspending the driving privileges of the defendant for a period not to exceed one year; and otherwise, the defendant shall be discharged. The decision of the trial court shall be subject to appeal by either party.

Immediately upon the termination of the Court proceedings, the Clerk shall certify any judgment suspending driving privileges to ~~notify~~ the Secretary of State as in cases of convictions for traffic offenses ~~of-the-court's-decision~~. The Secretary of State shall thereupon suspend the driver's license, the privilege of driving a motor vehicle on highways of this State given to a non-resident, or the privilege which an unlicensed person might have to obtain a license under the Driver's License Act, of the arrested person ~~if-that-be-the~~ consistent with the decision of the Court. If the Court

recommends that such person be given a restricted driving permit to prevent undue hardship, the Clerk shall so report to the Secretary of State.

(e) ~~Regardless of whether such person files a complaint in the Court for a Court proceeding as provided in Paragraph (d) of this Section;~~ Whenever a driver's license is suspended under this Section, the Secretary of State may, if application is made therefor by the person whose license is so suspended, issue such person a restricted driver's permit, to prevent undue hardship, in the same manner, under the same conditions and with the same limitations specified in Section 6-205 of this ~~Act~~ Code, provided the defendant waives all right of appeal of the Court's finding and that such finding does not contain any direction not to issue the restricted permit.

~~If the person has had a Court hearing as provided for in Paragraph (d) and if the Court recommended that such person be given a restricted driver's permit to prevent undue hardship; this recommendation shall be made a part of the hearing before the Secretary of State.~~

Any person who is dead, unconscious or who is otherwise in a condition rendering him or her incapable of refusal, shall be deemed to have withdrawn the consent provided by this Section.

The presumptions stated in sub-section (c) of Section 11-501 of this Code are defined as being interpretations of test results at the time the tests are given and not as standards of guilt of any offense. All test results are

admissible in evidence upon the trial of any offense described in Section 11-501 subject to challenge of accuracy of any inference to be made therefrom. Test results should be regarded as corroborative evidence of other facts that establish the corpus delicti or as rebuttal evidence pertaining to affirmative defenses.

Notwithstanding any other provision of Subsection (i) of Section 11-501 of this Act Code, the Court may, in lieu of a sentence of imprisonment for a conviction under Section 11-501, or a similar misdemeanor ordinance, order any person to serve a term of not less than 2 days in a hospital, alcoholic or rehabilitation center, or other such agency or institution, under such terms and conditions as may to the Court be appropriate.

Seminars on Alcohol and Highway Safety for State and Local Legislators

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SEMINARS ON ALCOHOL AND HIGHWAY SAFETY FOR STATE AND LOCAL LEGISLATORS[1]

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Background

In 1970, the National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation began its extensive, nationwide program to demonstrate the efficiency and effectiveness of a systematic, health/legal approach to solving the problem of the drinking driver. I am sure all of you are quite familiar by now with the Alcohol Safety Action Program (ASAP) concept.

NHTSA has successfully demonstrated, in 35 jurisdictions across the United States, that a coordinated and integrated approach can produce a health care delivery system in which the problem drinker and/or alcoholic can be readily identified and processed, through the courts, into a rehabilitation program.

As the ASAPs evolved in the period 1971-1974, NHTSA recognized the need to make state and local lawmakers aware of the elements that comprised the new system, and the kinds of laws required to assure that the ASAPs could accomplish their goals. For this reason, my company was contracted to develop seminar materials suitable for presentation to state and local lawmakers. The primary purposes of the project described in this paper were to:

1. Inform the legislators of the national, state, and local picture of alcohol abuse and its effects on driving behavior and subsequent highway accidents.

2. Make the lawmakers aware of the research data that support the alcohol countermeasures legislation recommended by NHTSA.

[1]The development and pilot test of the legislators' seminar materials was supported by the U.S. Department of Transportation, National Highway Traffic Safety Administration, Manpower Development Division (Contract No. DOT-HS-4-00985).

3. Assure that legislators understand the potential impact that new laws would have on their state's alcohol-related traffic accidents.

4. Provide the basis for a plan of legislative action to draft and pass laws which structure the ASAP's drinking driver control system.

The seminar materials developed under this contract were specifically aimed at achieving these purposes.

Materials Development

Rather than describe the materials development in detail, this paper will focus on a description of the seminar content and the application of the resulting materials, and will outline recommended procedures for successful conduct of alcohol/highway safety seminars for lawmakers at all levels.

The project staff and two consultants, Dr. G. Scrimgeour and Mr. M. Wagner, agreed from the inception of the contract that the principal aim of the legislators' package was not instruction, but attitude change. For this reason, the approach usually taken to the design of an instructional system was tempered with input from the psychological literature on persuasion and group dynamics. The resulting seminar format and content are less formal than usual, but were found to be far more effective and acceptable to the audience.

The primary objectives of the seminar were to give the participants:

1. An accurate description of the problem.

2. A reason to act.

3. A systematic method for implementing alcohol countermeasures.

In most states legislatures are in session only Monday through Wednesday of each week that the legislature sits. Committee meetings are scheduled for Thursdays, and Fridays are generally uncommitted, to allow the legislators to conduct state- or district-related business. The project staff was aware of the difficulty of obtaining more than 12 hours of the legislators' time, and realistically planned for the seminar to be conducted from 6:00 p.m. - 10:00 p.m. on a Thursday evening, and continued from 8:00 a.m. until 5:00 p.m. on a Friday.

Because the nature and scope of the seminar was quite similar to that required for the ASAP Judicial and Prosecutors' Seminars, the decision was made to draw upon existing materials for the first three units of instruction covering: (1) the physiological aspects of alcohol,

(2) a history of the alcohol/highway safety problem, and (3) a description of the health/legal approach used by the ASAPs.

The content of the final unit of the seminar was dictated primarily by the need to communicate, in as much detail as possible, the need for and rationale behind each of the legislative items proposed by NHTSA in it's 1973 reformulation of Highway Safety Standard No. 8: Alcohol and Highway Safety.

The structure and sequence of the final seminar, and the objectives of each, are as follows:

Unit 1: Alcohol and Impairment

- Produce a general acceptance of Blood Alcohol Concentration (BAC) as an accurate measure of impairment.
- Understand the predictable kinds of impairment which occur at specific BACs.
- Recognize the factors which affect the extent of which an individual is impaired by alcohol.

Unit 2: Alcohol and Highway Safety

- Illustrate the magnitude of the alcohol/highway safety problem nationally and locally.
- Identify countermeasures which traditionally have been used to handle the problem.

Unit 3: The Proposed System

- Provide an accurate description of the Problem Drinking Driver (PDD).
- Make participants aware of the increased risks of driving at high BAC levels.
- Introduce the "systems approach" to alcohol countermeasures, as used by the ASAPs.

Unit 4: Enabling Legislation

- Acquaint legislators with the alcohol countermeasures being proposed at the federal level.
- Insure awareness of the current picture across the 50 states and how their state compares.

The legislators are most familiar with the lobbyists' tactics of presenting "all the facts", but only one point of view. Fortunately,

few satisfactory arguments can be mustered against removing the problem drinking driver from the road, and all participants could be expected to be genuinely in favor of the ends pursued by the legisative items. The means to those ends, however, could justifiably be questioned since the states' rights could be compromised if the federal standard was espoused exclusively. The seminar materials, therefore, present both sides of all issues carefully, to assure that the legislators do not get the impression that the seminar is a lobbying effort geared to promote the federal message. To overcome this hurdle, the materials were designed to present supporting data in as fair a manner as possible, illustrating both sides of each issue.

In consultation with NHTSA and our two consultants, ASA's staff developed the materials for Unit 4, Enabling Legislation. In this unit, the participant (Legislator) is first given a brief history of the need for traffic laws and some background on the NHTSA Standards, and then the specifics of the proposed new Standard No. 8, Alcohol and Highway Safety are explicated. These are:

- .10 BAC illegal per se law
- Preliminary breath screening
- Arrest without a warrant for DWI offense committed out of officer's presence
- Pre-sentence investigation in DWI cases
- Mandatory and alternative sanctions
- Limited licenses for DWI offenders
- BAC tests on all drivers/pedestrians who die as a result of a crash
- BAC tests on all surviving drivers in accidents fatal to others

Each legislative issue was then documented in model form, its rationale explained, and arguments for/against were noted. Next in Unit 4, a listing was provided of the states which have passed the legislation in question, along with a discussion and, in all cases, sample statutes and the present law in the host state. A sample page of Unit 4 is illustrated in Exhibit 1.

Developmental Test

ASA has always found that a developmental test of instructional materials is warranted to assure that the package will communicate with its intended audience. We, therefore, arranged for a test of the draft seminar materials to be conducted in Pittsburgh, Pennsylvania, to be attended by state legislators from the local area.

In preparation for this test, 22 Pittsburgh-based legislators were invited to the seminar. Although this group size would ordinarily be considered too large for seminar purposes, it was reasonable to invite 22 since we anticipated acceptance from only 50 percent of the invitees. Resource personnel representing the judiciary, the District Attorney's office, the state police, and alcohol rehabilitation agencies were asked to be present to provide the legislators with state and local data on the system presently being used to control the problem drinking driver.

Although commitments to attend the seminar had been received from eight Pennsylvania legislators, only one person, a former House Transportation Committee Chairman, was on hand for the start of the seminar. Please remember that 22 were invited, and 8 had accepted our invitation. The first evening session was canceled and two of the project staff members and the state legislator spent the next few hours trying to reach the legislators who had been invited, plus another 15 Pittsburgh-based lawmakers. The net result of this recruitment effort was attendance by four state legislators, only one of whom was present for the entire 9:00 a.m. - 5:00 p.m. session.

Two critical factors were discovered in this test:

1. The legislators' commitments to attend must be viewed as tentative in all cases, despite their written and/or verbal acceptance of invitations.

2. To assure attendance of responsible members of the two houses, cooperation and interest of at least one Senate and one House member are necessary.

As a result of our experience with the state legislators in the developmental test, the staff decided that several measures must be taken to preclude this happening again. As a first effort, careful groundwork would be laid to assure the legislators' attendance. Plans for this included: (1) a site visit to the state capitol to identify a "champion" in each legislative house, one who would foster interest among his colleagues in attending the seminar, and (2) arrangements to be made with Highway Safety personnel in each state. The second modification necessary was the restructuring of the seminar to include more formal lecture, since we had discovered that the discussions we'd originally planned took far too long. After these two issues were resolved, the pilot test states were selected, and all arrangements were subsequently

made with the states' Governor's Representatives.

Pilot Test I-- Maryland

The first pilot test of the legislators' seminar materials was carried out in the state of Maryland, one of the two states in the U.S. in which the law still defined intoxication as 0.15 percent blood alcohol concentration, rather than 0.10 percent as do the other 48 states. The site visit to the state capitol of Annapolis one month prior to seminar conduct was most successful. ASA obtained the cooperation of an active and interested member of the House Judiciary Committee, Mr. Steven Sklar, who volunteered to "Champion" the cause of the alcohol/highway safety seminar. In addition, the state's Secretary of Transportation was also contacted and he agreed to open the seminar proceedings. Incidentally, Mr. Harry Hughes is now Governor of Maryland, and his interest in this area has remained high.

A total of 41 legislators were invited, including the leaders and the Chairmen of the Transportation, Public Safety, and Judiciary Committees of both houses. Commitments to attend were received by mail from 11 of these, but only seven legislators attended the seminar.

The seminar began, as planned, with a hospitality hour and a controlled drinking demonstration. The attendees were permitted to request any type of drink they chose, but were then asked to pour the alcohol themselves into an empty glass. They were instructed to pour the amount they felt was a "normal" drink for them. The project staff member then measured the alcohol which the legislator had poured. To the surprise of all the "normal" drink poured ranged from 1.5 to 3.25 ounces, rather than the 1.0 ounces usually expected for a standard drink. The attendees appeared slightly embarrassed, and poured their subsequent drinks somewhat less generously. Breath testing equipment was provided and all participants were asked to estimate their BAC levels before being tested. They typically overestimated their levels by 50-75 percent.

The first unit, Alcohol and Society, was presented immediately after dinner, and consisted of showing the 40 minute film, "The Drinking American". Unfortunately, the film was viewed as too temperance-oriented by the legislators. It was eliminated from the second pilot test seminar for this reason.

On the second day, the legislators were most interested in discussing the proposed laws. Resource personnel, especially the district court judge, contributed greatly to the legislators' understanding of how the drinking driver control system actually operated in their state. This provided the lawmakers with a better picture of how the laws they have passed actually work in practice. The final unit was then presented, outlining the enabling legislation required for most efficient and effective operation of the health/legal approach to control of the drinking driver.

The presentation of the model alcohol countermeasures legislation in this manner was extremely effective, because it is analogous to the "give-and-take" which transpires during the legislative session. The overall evaluations of attending legislators were extremely favorable, and five of the seven indicated their intentions to introduce legislation similar to the model items proposed.

Pilot Test II--Iowa

The second pilot test was conducted in the state of Iowa, in the conservative midwestern section of the United States, often called the "Bible Belt". The choice of Iowa as a pilot test site was made primarily on the basis of the expressed interest of one State Senator who had tried unsuccessfully to pass several alcohol-related laws in the period 1972-1974.

Again, with the aid of the state-level Highway safety Office in Iowa invitations were sent to 53 members of the House and Senate Transportation and Judiciary Committees, plus the leaders of both houses. The seminar's "champion" Senator invited an additional 27 legislators. Of the 70 persons invited, 14 attended the seminar.

Overall Conclusions

Given the positive reactions received from the participants at both official pilot tests in the states of Maryland and Iowa, it must be concluded that the legislators' seminar project was successful in attaining it's primary objective--that of raising the legislators' consciousness of the alcohol/highway safety problem. Proof of this lies in the subsequent introduction of alcohol/highway safety bills by the legislators who attended the seminars.

The most significant conclusion reached by the seminar staff, and NHTSA personnel is that the seminar, as originally conceived, was the most effective way to communicate alcohol/highway safety information to state legislators. Caution must also be given, however, that the preparations and scheduling are most critical to seminar success. The use of a state-level agency director as a host, and the recruitment of "champions" from one or both legislative houses is an absolute requirement. Without them, the seminar will be poorly attended, if at all.

Specific recommendations resulting from the above conclusions can be summed up as follows:

1. Scheduling. The most propitious time for conduct of the legislators' seminar is immediately before the legislative session begins in November or December. If at all possible, the seminar should be linked with pre-session committee meetings (e.g., Transportation,

Public Safety, etc.). At least 60-90 days preparation time should be allotted to allow the administrative and instructional staffs to prepare the materials/facilities properly.

2. Host. A state-level Highway Safety Agency should be the seminar sponsor and host. Their counsel and aid should be sought in all phases of seminar planning, preparation, conduct, and follow-up.

3. Location. If the seminar is scheduled to coincide with pre-session committee meetings, this fact will determine its location. In any case, the physical environment should be pleasant, quiet, and of sufficient distance from the state assembly houses to keep participants from exhibiting "dilletante" behavior (i.e., dropping in/out throughout the seminar).

4. Group Size. An optimum group of participants is 10-12, but up to 18 legislators can be accomodated if the instructor is skilled in the techniques of group dynamics. Each participant should represent a committee which will have some influence on passage of alcohol countermeasures legislation.

5. Resource Personnel. The types of resource personnel required for successful seminar conduct are:

    a. The Judiciary

    b. The Prosecutor's Office

    c. State/Local Police

    d. The State Toxicologist

    e. Alcohol Rehabilitation Agency

    f. The Department of Motor Vehicles

With the release of this seminar package in 1975, NHTSA made available to the states a powerful tool for change. Our experience has shown that if the information flow is continuous and the data provided are tailored to the specific state, legislators who have been exposed to the alcohol/highway safety seminar materials will recognize the need for the necessary alcohol countermeasures laws.

Proof of this is the 1976 passage of a comprehensive alcohol/highway safety legislative package in Iowa, which incorporates the ASAP health/legal concept. A statewide ASAP system has been introduced in Iowa, and is functioning extremely well. In Pennsylvania, the 1978 legislative

session, enacted a PSI law and is currently establishing a statewide program to conduct DWI schools in a standardized manner.

Unfortunately, on the other side of the coin, the state of Maryland has not lowered its BAC from .15 to .10, despite the yearly introduction of this bill by a state Senator who attended the seminar in 1975. Obviously, we win some -- but we lose some as well.

States Which Have Preliminary Breath Screening Law

- Florida
- Indiana
- Maine
- Minnesota
- Nebraska
- New York
- North Carolina
- North Dakota
- South Dakota
- Vermont
- Virginia

Discussion of Existing Laws in the States

Not all the laws clearly delineate the circumstances under which an officer may request an individual to submit to a test. Some laws, such as the Nebraska statute, are broadly written and permit a breath test to be demanded when the officer has reasonable grounds to believe that the driver has committed any moving traffic violation.

The Nebraska law reads:

> *Section 39-727.03.*
> *Any law enforcement officer who has been duly authorized to make arrests for violation of traffic laws of this state or ordinances of any city or village may require any such person to submit to a test of his breath for alcohol content if the officer has reasonable grounds to believe that such person has alcohol in his body, or has committed a moving traffic violation, or has been involved in a traffic accident. Any person who refuses to submit to such breath test or whose breath test results indicate an alcohol content of ten-hundredths of one per cent or more shall be placed under arrest.*

In other states the statutes have a provision authorizing a test demand only when the officer has reason to suspect the driver of being under the influence of alcohol.

Maryland Law

None at present. However, House Bill No. 11, presented to the legislature in the 1975 session reads, in part, as follows:

> *Section 6-205.1 (. . .).*
> *(c) It shall be the duty of any police officer who stops or detains any person who he has reasonable grounds to believe is or has been operating or attempting to operate a motor vehicle under the influence of alcohol, or who*

The Visual Detection of Driving While Intoxicated

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THE VISUAL DETECTION OF DRIVING WHILE INTOXICATED

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On-the-road detection of driving while intoxicated (DWI) involves the observation and interpretation of visual cues by police patrol officers. The effectiveness of DWI detection is a function of the degree to which the officer can see and recognize cues indicative of DWI, and the extent to which the observed cues discriminate between DWI and driving while sober (DWS). What cues occur frequently enough to be useful? Which cues most accurately discriminate between DWI and DWS? This study was conducted to answer these and related questions, and to provide the police patrol officer with a practical guide to DWI detection.

This paper describes the initial phase of a two-phase project on the visual detection of DWI. The overall purpose of the project is to develop and test procedures for enhancing on-the-road detection of DWI. The emphasis of the first phase was on the identification of visual cues and on the development of detection procedures that effectively discriminate between DWI and DWS. The second phase will consist of a field test of these procedures.

THE DWI DETECTION PROBLEM

Only a very small proportion of persons DWI are arrested for this offense--only about one in 2000 (Summers and Harris, 1978). Reasons for a low arrest rate might include limitations on enforcement resources, lack of enforcement motivation, inability to detect DWI, and others (Arthur Young & Company, 1974; Oates, 1974). However, research has shown that even when persons DWI have been observed by police officers who were highly motivated to arrest for DWI, the arrest rate was relatively low (Beital, Sharp, and Glauz, 1975).

As determined from roadside breathtesting surveys conducted throughout the United States (Lehman, Wolfe, and Kay, 1975), about six percent of drivers at night have a blood alcohol concentration (BAC) equal to or greater than 0.10. About 15 percent have a BAC equal to or greater than 0.05. Thus, if DWI were defined at the BAC $\geq$ 0.10 level, the probability of detecting DWI from a random stop would be 0.06; at BAC $\geq$ 0.05, the probability would be 0.15. Visual cues which are capable of discriminating between DWI and DWS can serve to increase detection probabilities above these chance levels. Thus, the key to enhanced DWI detection is determination of the relative discriminability of visual cues which are likely to be observed in association with DWI.

RELATED RESEARCH

Many studies have investigated the effect of alcohol on driving behavior; they have employed laboratory apparatus, driving simulators, and instrumented vehicles in the field. However, the results are only indirectly relevant to the objectives of the present project. Although substantial evidence has been developed to indicate that alcohol-induced driver impairment is exhibited mainly in four driving functions--steering control, velocity control, time-sharing of attention, and information processing--the findings have not been specific enough to permit the identification and assessment of visual detection cues. Examples of this research have been summarized by Heimstra and and Struckman (1973) and Perrine (1974, 1975).

Lists of cues have been developed through interviews with police officers experienced in DWI detection (Carnahan, Holmes, Keyes, Stemler, and Dreveskracht, 1974). The resulting listings have been both comprehensive and logically organized; however, they have been of only limited use for DWI detection. Without the availability of information about the relative frequencies of cue occurrence or relative cue discriminability, there has been no basis for the development of practical guidelines for employment of the visual cues for DWI detection.

ANALYSIS OF DWI ARREST REPORTS

An analysis was completed of a sample of 1288 DWI arrest reports from nine different police agencies throughout the United States. A total of 3658 visual detection cues were reported in the sample, an average of about three cues per arrest. Frequency distributions prepared from the data, combined with the results of previous research and cue listings obtained from experienced patrol officers, provided the basis for a preliminary listing of 129 visual cues potentially useful for DWI detection.

ON-THE-ROAD DETECTION STUDY

An on-the-road study of DWI detection was conducted to determine the relative discriminability and frequency of occurrence of visual detection cues, under conditions typically encountered by patrol officers. Trained observers accompanied police officers on patrol and recorded instances of driving behavior and vehicle actions that deviated from normal. In each instance, the police officer stopped the vehicle and measured the BAC of the driver with a portable breath tester. In addition to cue descriptions and BAC level, the observer recorded the circumstances and conditions under which the stop was made, and other driver characteristics. Since the data-collection effort required conducting pre-arrest breath tests of drivers, the study was conducted in two states, Indiana and North Carolina, that permitted, by statute, pre-arrest breath testing.

A total of 643 DWI detection events was observed and recorded, 378 in Charlotte, North Carolina, and 265 in Fort Wayne, Indiana. The sample was found to be comparable to the national sample of 1288 DWI arrests in several basic respects: time of day of stops, location (urban vs. rural) of stops, and sex of the driver. The main way in which the detection study sample differed from the arrest report sample was in the distribution of the BAC levels of the drivers. In the detection study it was necessary to obtain a sufficiently broad range of BAC levels among drivers stopped to permit a meaningful analysis of cue discriminability. Thirty-nine percent of the drivers had a BAC < 0.05; 23 percent had a BAC in the range from 0.05 to 0.10; and 38 percent had a BAC ≥ 0.10. In contrast, 96 percent of the sample of DWI arrests reported drivers with BAC ≥ 0.10.

Analyses of the 1681 cue occurrences recorded during the 643 detection events included: computation of cue frequencies, calculation of cue discriminability values, study of cue co-occurrence, assessment of cue order of appearance, and correlational analyses to determine the impact on cue occurrence of alternative detection strategies, characteristics, and conditions. As part of the analytical effort, cues were recombined and redefined, ultimately, into a set of 23 visual cues that accounted for 92 percent of the cue occurrences in the detection study. The 23 cues are listed in Table 1; frequency of occurrence, P(BAC ≥ .10), and P(BAC ≥ .05) are presented for each cue. A field test to verify these findings is planned in phase II of this research.

DWI DETECTION GUIDE

A DWI detection guide was developed to facilitate the application of research findings to the on-the-road detection of DWI by police patrol officers. The extent of competing demands placed upon patrol officers--the variety of situations likely to be encountered, the stringent demands on available time, the need for rapid response, and the large amount of other information that must also be learned and retained--suggest that the findings of this study be presented for use simply and directly. Therefore, the DWI detection guide was developed to transform the research findings into a practical aid for DWI detection. Because the empirical results were not necessarily simple or free of subtlety, extrapolation and judgment were exercised during this process. Guide development was governed by the following criteria:

- Account for the largest number of detection events with the smallest number of detection cues.
- Enhance the discriminability of available detection cues.
- Employ a probabilistic output.
- Accommodate multiple cue occurrences.
- Accommodate alternative enforcement statutes and policies.
- Emphasize simplicity, practicality, and ease of use.

The resulting detection guide is presented in Figure 1. The guide, together with cue definitions, can be put into the form of a simple performance aid for use by patrol officers. It is anticipated that use of the aid can be implemented through one or a series of brief training sessions conducted during roll-call at the start of patrol shifts. This approach will be field tested in the second phase of the project.

CONCLUSIONS

1. Alcohol-induced driver impairment is exhibited mainly in four driving functions--steering control, velocity control, time-sharing of attention, and information processing.

2. Although the potential number of visual detection cues is very large, most detection events can be accounted for by a relatively small number of cues.

3. Typically a detection cue is observed with one or more other cues. However, there are few subsets of specific cues that occur frequently together.

4. There are large differences among visual detection cues in the frequency with which they occur with DWI, and in their ability to discriminate between DWI and DWS.

5. In general, the conditions under which cues are observed have relatively little influence on cue occurrence.

6. Patrol strategy (general patrol vs. patrol with DWI emphasis) greatly affects the relative frequencies with which cues are observed.

7. The DWI detection guide, developed from study results, will facilitate the application of research findings to on-the-road detection of DWI by police patrol officers.

8. A field test is required to evaluate the impact of the detection guide, prior to any widespread implementation or use of the guide.

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Table 1. Final Set of Visual DWI Detection Cues

VISUAL CUE	*OCCURRENCE (TIMES IN 100)*	*P(BAC ≥ .10)*	*P(BAC ≥ .05)*
Stopping (without cause) in traffic lane	3	.69	.90
Following too closely	3	.62	.76
Turning with wide radius	3	.60	.83
Appearing to be drunk	5	.58	.75
Driving on other than designated roadway	4	.57	.79
Straddling center or lane marker	6	.57	.78
Almost striking object or vehicle	5	.56	.71
Slow response to traffic signals	2	.50	.55
Headlights off (at night)	2	.48	.67
Signalling inconsistent with driving actions	4	.47	.71
Weaving	11	.47	.69
Tires on center or lane marker	7	.47	.67
Drifting	8	.46	.70
Swerving	4	.45	.73
Accelerating or decelerating rapidly	6	.44	.67
Slow speed--more than 10 MPH below limit	2	.44	.66
Fast speed--more than 10 MPH above limit	6	.37	.55
Failing to respond to traffic signals or signs	5	.36	.53
Braking erratically	1	.35	.74
Stopping inappropriately other than in lane	2	.33	.61
Turning abruptly or illegally	2	.31	.58
Driving into opposing or crossing traffic	2	.30	.54
Driving with vehicle defect(s)	2	.29	.43

DWI DETECTION GUIDE

1. *The number to the right of each cue listed below is the percentage of nighttime drivers expected to have a BAC equal to or greater than (≥) 0.10, if that cue is observed.*

STOPPING (WITHOUT CAUSE) IN TRAFFIC LANE	**70**
FOLLOWING TOO CLOSELY	**60**
TURNING WITH WIDE RADIUS	**60**
APPEARING TO BE DRUNK	**60**
DRIVING ON OTHER THAN DESIGNATED ROADWAY	**55**
STRADDLING CENTER OR LANE MARKER	**55**
ALMOST STRIKING OBJECT OR VEHICLE	**55**
SLOW RESPONSE TO TRAFFIC SIGNALS	**50**
HEADLIGHTS OFF (AT NIGHT)	**50**
SIGNALLING INCONSISTENT WITH DRIVING ACTIONS	**45**
WEAVING	**45**
TIRES ON CENTER OR LANE MARKER	**45**
DRIFTING	**45**
SWERVING	**45**
ACCELERATING OR DECELERATING RAPIDLY	**45**
SLOW SPEED (MORE THAN 10 MPH BELOW LIMIT)	**45**
FAST SPEED (MORE THAN 10 MPH ABOVE LIMIT)	**35**
FAILING TO RESPOND TO TRAFFIC SIGNALS OR SIGNS	**35**
BRAKING ERRATICALLY	**35**
STOPPING INAPPROPRIATELY (OTHER THAN IN LANE)	**35**
TURNING ABRUPTLY OR ILLEGALLY	**30**
DRIVING INTO OPPOSING OR CROSSING TRAFFIC	**30**
DRIVING WITH VEHICLE DEFECT(S)	**30**

2. *If one additional cue is observed, add 5 to the larger of the two percentage values to obtain the expected percentage of drivers with BAC ≥ 0.10. If two or more additional are observed, add 10 to the largest percentage to obtain the expected percentage of drivers with BAC ≥0.10.*

3. *To obtain the expected percentage of drivers with BAC ≥0.05, add 20 to the percentage obtained for drivers with BAC ≥0.10.*

Figure 1. DWI detection guide.

R. I. D. E. A Prevention Programme for Drinking Driving

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ABSTRACT

A drinking-driving programme introduced in one borough of Toronto, Canada, is evaluated. Based on evidence from previous campaigns judged effective, it combined a highly visible "random" spot-check enforcement component with copious media publicity and a drinking-driving educational component. A three-wave telephone survey showed significant increases in public knowledge of drinking and driving and of the programme in the experimental area. The subjective perception of arrest risk was increased for the "average driver" but not for "myself". Unfortunately, only indirect evidence was available on driver behaviour and this tended to indicate fewer impaired drivers on the road. Finally, police reported alcohol-related accidents and injuries indicated an overall downward trend in Toronto, but the urban nature and restricted size of the experiment's geographic unit, as well as similar changes in control areas and contaminations to the data rendered the analysis highly ambiguous. Thus, the programme experienced some positive although by no means conclusive indicators of success.

PAPER PRESENTED AT NATIONAL ALCOHOLISM FORUM, WASHINGTON, MAY, 1979

R.I.D.E. (REDUCE IMPAIRED DRIVING IN ETOBICOKE): A PREVENTION PROGRAMME FOR DRINKING DRIVING

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Accident statistics from industrialized countries indicate that traffic accidents are the major cause of death among people under forty years of age. These traffic accidents are generally due to a variety of factors, and it is often the interaction of two or more variables that result in the occurence of an accident. Thus, statements attributing causality to a certain variable are often tenuous and misleading.

One variable, however, that has consistently been implicated as a cause of traffic accidents, is alcohol consumption. It is estimated that 45% of all drivers killed on Canadian roadways have blood alcohol concentrations over the legal limit of .08% (Transport Canada, 1975). Although the relevant rates differ from country to country, the general findings from a number of studies are consistent: drivers with high blood alcohol concentration are over-represented in fatal and serious injury collisions in comparison with samples of uninvolved drivers (Stroh, 1972; United States, Dept. of Transportation, 1974).

The seriousness of this problem of alcohol involvement in traffic

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2. The author would like to acknowledge the contributions of Dr. Pamela Ennis, the members of the R.I.D.E. Committee, the Metropolitan Toronto Police Department and Godwin Chan.

accidents in industrialized countries poses a considerable challenge to the development of legal, educational and other countermeasures. Numerous attempts have been made to counter drinking-driving. Most can be categorized into the three distinct stages of intervention, primary, secondary and tertiary.

Primary intervention attempts to reduce the incidence of new cases in the population. Primary intervention strategies try to divert or dissuade a large proportion of society who are potential drinking drivers from undertaking such a behaviour. These objectives are met by educational media programmes which would involve such strategies as the use of various news media to increase public awareness and affect public opinion about the problem of drinking and driving, the use of classroom instruction on drinking-driving to be conducted in schools and driver education programmes, and so on (Ennis, Stern, Boyle and Markle, 1976).

Secondary intervention aims at preventing a drinking driver who is already on the road from having an accident. This intervention would involve police enforcement, specifically the detection of impaired drivers.

Tertiary intervention is concerned with reducing recidivism. This form of intervention is a court sentence which may take the form of a traditional disposition like a fine, or may involve some attempt at rehabilitating the offender.

Unfortunately, epidemiological studies have demonstrated that most persons arrested for impaired driving offences are first-time arrestees for that offence. However, this does not mean that they are first-time offenders, for the risk of apprehension is low. It is estimated that the risk of apprehension may be as low as one in 2,000 drinking-driving occurrences

(Ennis, Stern, Boyle and Markle, 1976). Thus tertiary intervention is not sufficient to reduce the drinking-driving problem.

The present paper describes a demonstration project called R.I.D.E. (Reduce Impaired Driving in Etobicoke) that aims at using primary and secondary intervention. The programme's purpose is to deter that large sector of the population who are potential drinking-drivers, as well as to detect and apprehend drinking-drivers who are already on the roads.

The Rationale Behind the R.I.D.E. Programme

The rationale for the R.I.D.E. programme is based on the model of general deterrence which is a term used to describe the preventive effect that actual or threatened punishment has upon potential offenders (Andeneas, 1952). From the drinking driver perspective, it is assumed that the threat of fines, imprisonment and loss of drivers' licences will affect the drivers' decisions as to whether or not they should drink and drive. Yet it must be realized that not only are the penalties per se important but the individual's perception of his probability of being detected while drinking and driving, is of crucial importance for deterrence to be effective. Thus, for general deterrence to be effective, the perception of probability of detection must increase, which occurs by both increasing the subjective probability of being caught by means of a public education programme and increasing the objective probability by increased police activity.

However, the detection of the drinking-driver is really a chance event and only the worst cases are likely to be brought to the attention of the police. A number of studies (Chi, Ferrence and Whitehead, 1973; Hyman, 1968; Perrine, Waller and Harris, 1971; Voas, 1973) have shown that most drivers

apprehended for impaired driving have B.A.C.'s in the extremely high range (0.15% or more) and therefore can definitely be presumed to have been drunk. Generally, drinking-drivers are detected because of some unusual driving behaviour or involvement in accidents. Yet other drinking-drivers, potentially just as dangerous, go undetected because they do not fit the classical pattern (Borkenstein, Trubitt and Lease, 1960). Although these drivers may not show signs of physical incoordination, their decision-making may still be severely impaired. A routine patrol in which only classical drinking-drivers are detected and removed from the roads is not totally fulfilling its preventative function.

Increased detection of the drinking-driver can be achieved in two ways: 1) by use of special highly trained patrols to supplement routine enforcement of impaired driving laws; and 2) by the establishment of road blocks where vehicles are stopped randomly to check for drinking-driving violations (Ennis, 1977). The latter method was used by the R.I.D.E. programme. It was felt that a system of rotating spot-checks at high visibility and high drinking-driving accident locations would increase both the objective probability of detection and in turn increase the driver's perception of increased probability of detection. Increased detection of drinking-drivers alone, however, has little impact on traffic safety (Clay and Swenson, 1978).

In addition, it is realized that in order for behaviour change to occur, people need to know the law pertaining to drinking and driving. Individuals must accurately perceive the seriousness of the offence and be aware of possible penalties for deviant behaviour (Ennis, 1977). Yet studies of the perceptions of impaired driving laws indicate that people are relatively ignorant of the legislation and its consequences (Borkenstein, Joiner, Klette

and Picton, 1971; Zylman, 1971).

Thus, what is required for the reduction of drinking-drivers, are strategies of primary intervention to educate drivers about drinking and driving, the relevant laws and penalties, and strategies of secondary intervention in which the risk and perception of risk of detection is heightened through random spot-checks.

At least two successful drinking-driving 'campaigns' are on record. These were The Lackland Accident Countermeasure Experiment (Barmack and Payne, 1964) and The British Road Safety Act of 1967 (Ross, 1972). Both of these employed the two necessary (primary and secondary) intervention "ingredients", discussed above.

A large scale countermeasure programme based on this rationale was developed by members of the Addiction Research Foundation in conjunction with the Metropolitan Police and Etobicoke Safety Council (Nield, Ennis and McCready, 1978). The R.I.D.E. programme consists of two components; education and spot-check enforcement.

The R.I.D.E. programme was expressly designed with the chain of events which turned out to be effective in the above mentioned programmes in mind (see Hall and O'Day, 1971) (see Figure 1). An evaluation component was added to assess each step. Public awareness, knowledge and risk perception were assessed by means of a telephone questionnaire. Impaired driver charges and alcohol-related accidents and injuries were indirectly assessed by police impaired charges and accident data and police questionnaires.

INSERT FIGURE 1 ABOUT HERE

This report presents the one year evaluation of the programme.

Step 1(a) The Enforcement Component of R.I.D.E.

Commencing October 1, 1977, for the first 12 months of the 18 month period, spot-checks were being held at over 100 locations in Etobicoke (Police district 2). These locations were chosen on the basis of high visibility, high traffic flow and high frequency of traffic accidents and offences. Spot-checks are carried out 7 days a week for 16 hours per day from 10.00 a.m. to 3.00 a.m. Each day two shifts of officers (3 for the 10.00 a.m. - 6.00 p.m. shift and 6 for the 6.00 p.m. to 3.00 a.m. shift) establish spot-checks at up to 20 randomly chosen sites which last a minimum of one hour at each location.

Special cars with portable R.I.D.E. signs inform motorists that R.I.D.E. spot-checks are in progress. The officers randomly stop motorists (under the authority of the Ontario Highway Traffic Act which allows on officer to determine whether the driver is in possession of a valid drivers licence) and they identify themselves as part of the R.I.D.E. programme, explain its objectives, and ask for the driver's licence and often for proof of insurance or registration. At times, officers may radio in to police headquarters to determine whether the stopped motorist has any outstanding charges or fines against him.

During this process, the R.I.D.E. officer watches the driver for signs of drinking. If the officer suspects that the driver has been drinking due to the odor of alcohol, open bottles of alcoholic beverages in the vehicle, an admission of drinking, or having recently left a place where alcoholic

beverages are likely to be found, he requests that the driver take the A.L.E.R.T. (Alcohol Level Evaluation Roadside Tester) device. The A.L.E.R.T. device has been calibrated so that a 'failure' on the roadside test corresponds to over 80 milligrams per 100 millilitres of fluid (the blood alcohol level over which it is illegal in Canada to drive). In these cases, the drivers are taken to the police headquarters for a breathalyzer, as only the readings from this more sensitive instrument are admissible as evidence.

Generally, the entire spot-check procedure takes a few minutes and very few motorists are required to provide a breath sample and charged with drinking-driving charges. However, it is not the goal of the programme to produce massive increases in the arrest rate. Rather, it is felt that it is more beneficial to contact as many borough residents as possible through these spot-checks, so that a large sector of the potential drinking-drivers might be deterred from combining these two activities in the future.

General Statistics of the R.I.D.E. Programme

As of September 30, 1978, 132,550 cars have been stopped by the R.I.D.E. spot-checks. A.L.E.R.T. tests were administered to 1,579 drivers or 1.19% of all drivers stopped. Of those who had taken the A.L.E.R.T., 667 individuals passed, 519 were warned, meaning that their B.A.L.s were between approximately 50 - 80 mg., 342 failed, 41 refused the test and information was missing for 10 individuals. Two hundred and twenty individuals were charged with various drinking-driving offences, 1,236 were not, and information was missing for 123 cases.

Step 1(b) Publicity About Enforcement and The Law

The R.I.D.E. sign on the cars was a reasonably modest, electrically

lit taxi-type roof sign with simply the letters R.I.D.E. The impact of it was substantial since 30.6% of the first post-test experimental area telephone survey respondents reported "police activity" as their initial source of knowledge about the programme. Recognizing "police activity" as "R.I.D.E activity" depended largely on the presence of the sign as people drove by.

There was a planned mailing campaign of a pamphlet about the programme to every household in the borough in the first two weeks of the programme. The first post-test telephone survey indicated that only 22.7% of the households remembered receiving it, and there was some doubt regarding the effectiveness of the type of commercial distribution used. At the spot-checks, the pamphlets were also handed out to motorists stopped, but only 9.9% named the pamphlet as their initial source of information about the programme.

Unexpectedly, newspapers, magazines and electronic media became the primary method for publicizing the programme although there was no paid advertising for it except the pamphlet. Forty-one percent of the borough's post-test respondents reported media as the prime information source. The Toronto evening paper received advance notice of the impending programme through a leak and ran it as its large front page headline, as it did again later when initial results were released. The clipping file for the programme so far includes 168 items, and media interest in general has remained high.

Step 2 Public Awareness and Knowledge

To determine whether or not the educational campaign has been successful in increasing public knowledge of drinking-driving and awareness of the R.I.D.E. programme, a telephone survey was conducted. One hundred and

fifty randomly chosen Etobicoke residents were contacted in September 1977 before R.I.D.E. commenced and another 150 Etobicoke residents were called in November after the major educational thrust had occurred and an additional 150 Etobicoke residents were called in July 1978. A comparison group of 150 in September 1977, 150 in November 1977 and 150 in July 1978 from the rest of Metro were also contacted. The sample, consisted of 116 males and 184 females for pre test 1, 114 males and 186 females for post test 1 and 112 males and 188 females for post test 2, with an average age of about 40.

The preliminary results of the survey were analyzed for four factors. Three 3 (time of survey) x 2(place of residence) analyses of variance were carried out to assess "total knowledge" (number of correct responses on the survey questions), "The average person's risk of getting caught, were he to drink and drive", and "your risk of getting caught, were you to drink and drive". In addition, a 2 (time of survey)x 2(place of residence) analysis of variance was done on the frequency of "yes" responses for the question "Have you heard of the R.I.D.E. programme?".

For the "total knowledge" factor, a total score of seven was possible on the five drinking-driving knowledge questions. The mean knowledge scores for Etobicoke and Metro residents on the pre-test and post-tests 1 and 2 are graphically depicted in Figure 2. Results of the analysis of variance indicated a main effect for place of residence ($F = 29.203$; $df = 1$; $p < .001$) and time of survey ($F = 6.119$; $df = 2$; $p < .005$). However, these main effects must be qualified by the significant borough of residence by time of test interaction ($F = 7.903$; $df = 2$; $p < .001$). The Turkey HSD comparison of means procedure (Winer, 1962) indicated that the total knowledge score for Etobicoke

for post-test 1 ($p < .01$) and post-test 2 ($p < .01$) were significantly higher than the pre-tests. Post-test 1 was also significantly higher than post-test 2 ($p < .01$). There were, however, no significant differences for any of the time periods for the rest of Metro. In addition, there were no significant differences between Etobicoke and Metro at the pre-test, but Etobicoke scores were significantly higher than Metro scores at both post-test 1 ($p < .01$) and post-test 2 ($p < .01$). This would suggest that although some of the information about drinking-driving has been lost since the major education thrust in October 1977, the Etobicoke residents still have maintained a significantly higher total knowledge score, when compared to the rest of Metro. In addition, significantly more Etobicoke residents as compared to Metro residents had heard of R.I.D.E. at both post-test times 1 and 2 ($f = 357.686$; $df = 1$; $p < .001$).

INSERT FIGURE 2 ABOUT HERE

Step 3 Increased Risk Perception

Included in the public knowledge survey were two questions designed to estimate the subjective apprehension of risk on the part of the Etobicoke residents. The two questions queried about "my risk of being caught" and "the average man's risk of being caught".

There were no significant differences for the question regarding "my risk of being caught". However, there were significant differences for "the average man's risk". The mean "average man's risk of being caught" for Etobicoke and Metro residents by time of test is graphically portrayed in Figure 3. The analysis of variance indicated a main effect for time of test ($F = 9.070$; $df = 2$; $p < .001$). Again, the main effect must be qualified by the significant place of residence by time of test interaction ($F = 2.934$; $df = 2$; $p < .05$). A comparison of means showed that the interaction was due to the

differences in the scores for Etobicoke for the time of test. The pre-test score for Etobicoke was significantly higher than post-test 1 ($p < .01$) and post-test 2 ($p < .01$). The scores for post-test 2 were significantly higher than the scores for post-test 1 ($p < .05$). This indicated that the Etobicoke residents felt that the average man's chances of being caught was greater at the two post-test times than at the pre-test time. There were no significant differences for Metro for any of the 3 testing times. In addition, the scores for Etobicoke when compared to Metro were significantly higher at the pre-test ($p < .05$) and significantly lower at post-test 1 ($p < .01$) and not significantly different at post-test 2. This suggests that Etobicoke residents viewed the average man's risk of being caught while drinking and driving as lower when compared to the rest of Metro before R.I.D.E., higher at the onset of R.I.D.E. while now the Etobicoke residents' percentions of risk are comparable to Metro. However, one must be cautious in making this interpretation because the results of Etobicoke could also be reflective of a regression to the mean.

INSERT FIGURE 3 ABOUT HERE

Step 4 Decreased Drinking-Driving Behaviour

Unfortunately, the ideal measure for this step is a random roadside breath alcohol level survey with experimental and control groups, pre and post intervention phases. This enterprise was not undertaken. Rather, indirect evidence was gathered in two ways. Firstly, the number of impaired charges laid, were compared across all five police districts for the 36 police reporting periods (28 days in length) from January 1976 to October 1978, by time series analyses.

The police data for the impaired charges laid in the 5 districts were subjected to auto-correlations and were found to be sufficiently low to warrant

the use of t-tests. There were no significant differences for district 1 ($t = .77$; $df = 35$; $p > .05$), district 3 ($t = .80$; $df = 35$; $p > .05$), district 4 ($t = 1.09$; $df = 35$; $p > .05$) and district 5 ($t = .40$; $df = 35$; $p > .05$). District 2, however, showed a significant increase in impaired charges laid for the R.I.D.E. intervention period ($t = 2.39$; $df = 35$; $p < .05$). However, when the impaired charges which resulted from the added manpower of the R.I.D.E. spot-checks were removed so that the impaired charges only reflected the drivers charged from routine patrolling of the regular police force, there was a significant decrease in the number of impaired charges laid ($t = 2.57$; $df = 35$; $p < .05$).

In addition, a police attitudes towards drinking-driving enforcement questionnaire was administered to all the Metropolitan Police traffic officers of district 2 (Etobicoke) and traffic and general patrol officers of district 1 (adjacent to Etobicoke) before the institution of R.I.D.E. and during R.I.D.E. to determine whether or not any changes in attitudes or policing had occurred concurrent with the R.I.D.E. Programme. Since there was a reduction in impaired charges laid in Etobicoke but not a clear reduction in alcohol-related accidents, it was impossible to determine whether the reduction was due to a reduction in impaired driving policing activities or due to an actual reduction in impaired drivers on the road.

From district 1 sixty officers completed the questionnaire before R.I.D.E. began in Etobicoke (district 2) and 63 officers completed the questionnaire during the R.I.D.E. programme. Thirty-six Etobicoke officers completed the questionnaire before R.I.D.E. and thirty-eight during the R.I.D.E. programme.

The data for the questions using interval scales were subjected to 2 (district) x 2 (time of test) analyses of variance. The police attitude questionnaire demonstrated three significant changes concommitant with the R.I.D.E. intervention.

1. District 2 officers perceived themselves as stopping more vehicles for suspected impaired drivers, during R.I.D.E. ($F = 4,907$; $df = 1$; $p < .05$) although they perceived the number of impaired driving arrests they made as not changing.

2. District 1 and 2 officers felt that a significantly lower proportion of suspected impaired drivers actually exceeded 80 mg. during the R.I.D.E. intervention than before ($F = 7,676$; $df = 1$; $p < .01$).

3. District 1 and 2 officers felt that their attitude toward impaired driving laws had a lesser effect on their decision to arrest during the R.I.D.E. programme when compared to the pre-R.I.D.E. phase ($F = 6,981$; $df = 1$; $p < .01$).

These results indicate that there may be a reduction in the number of impaired drivers on the road in Etobicoke because of the reduction in impaired charges laid during the intervention. This reduction of impaired charges could be due to either poorer police detection or fewer impaired drivers actually on the road. However, if the number of impaired drivers on the road remained the same but the police were detecting fewer drinking drivers, then one would assume that police perceptions of how many vehicles they stop for suspected impaired drivers should similarly decrease with the R.I.D.E. intervention. However, the police perceived themselves as stopping significantly more cars since R.I.D.E. This could suggest that there might be actually fewer drinking drivers on the road.

Step 5 Reduced Alcohol-Related Accidents

Ambiguity of the Ultimate Measures

Publicity about enforcement and increased enforcement have at least a temporary effect on traffic safety, as evidenced in the British Road Safety Act of 1967. There, the effect on accidents was most detectable in weekend nighttime fatal accidents. With its large population, combination of urban and rural roads, and a reasonably large number of fatalities, Britain was an ideal geographic unit to examine the results of such a "programme". Also, the mid-sixties was prior to major changes in vehicle safety design, seatbelts, energy crisis, lower speed limits, public consciousness and political pressure to introduce safety measures, some of which really altered accident and fatality rates.

This was not the case with R.I.D.E.'s experimental geographic unit. A province-wide administrative change doubling the value of damage which made an accident reportable, occurred almost simultaneous with the expected first full impact of the programme. This greatly confounded analysis of the intervention. The fatality numbers were far too small on a monthly basis to be useful. Separate nighttime or weekend accident statistics were not available for evaluation. In addition, the data were not consistent in terms of random variation so that some data demonstrated dependency of scores while other data demonstrated independency of scores. In the former case, the data were subjected to time series analysis, in the latter case the data were subjected to t-tests. The data that were used, (police-reported alcohol-related accidents and injuries), indicated by time series analyses or t-tests, a generally downward or unchanging trend for all districts concommitant with the R.I.D.E. intervention.

Wolynetz and Wiggins, 1976) when compared to the accident statistics suggest that the drinking driver is not over-represented in accidents in Etobicoke or Toronto. Only a small proportion of the drinking-drivers are involved in accidents and perhaps only certain drinking-drivers are high risk. The programme may be deterring a proportion of the drivers from drinking which would be evidenced in a reduction in impaired charges and increased risk of apprehension, but the proportion of high risk drivers deterred from drinking might not be large enough to cause a substantial reduction in "alcohol-related" accidents.

In conclusion, the present data offer positive indicators of reduction in number of impaired drivers on the road, increased risk perception for being caught while drinking and driving, and increased knowledge on drinking and driving in Etobicoke, in favour of the merit of the R.I.D.E. programme, although by no means conclusive evidence in support of a reduction in alcohol-related accidents and injuries or changes in B.A.L.s.

However even in the absence of a proven ultimate effect, the reduction in impaired charges and the changes from the public knowledge aspect of the programme show the same pattern observed in Britain. Thus, there seems to be some evidence of success for the causal chain's first three steps and they resemble in some ways the British experience.

The ultimate change in alcohol-related accidents might not be in evidence because of the contaminations mentioned previously (see Vingilis, Salutin and Chan, 1979 for greater discussion of the contaminations), or because of the need of a longer time period. It is clear, however, that valuable experience for further development of this and other experiments has been gained from the R.I.D.E. pilot project.

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TABLE 1

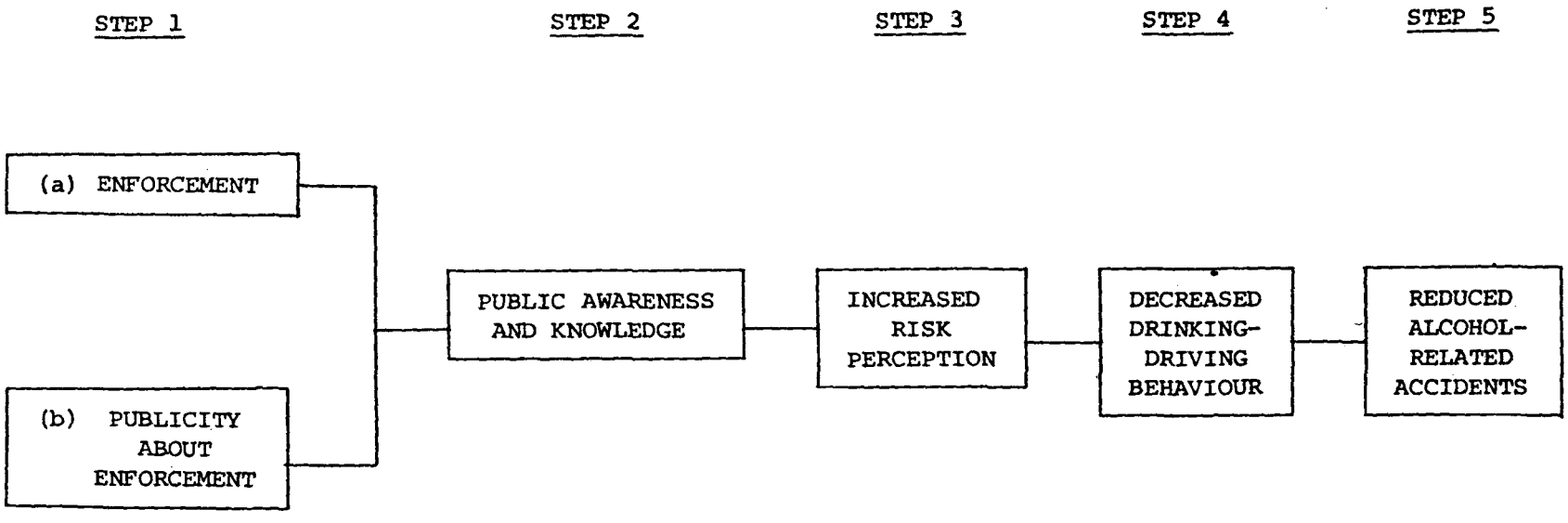
RESULTS OF TIMES SERIES ANALYSES (WHERE APPLICABLE) AND T-TESTS FOR THE POLICE DISTRICTS FOR POLICE REPORTED ACCIDENT DATA

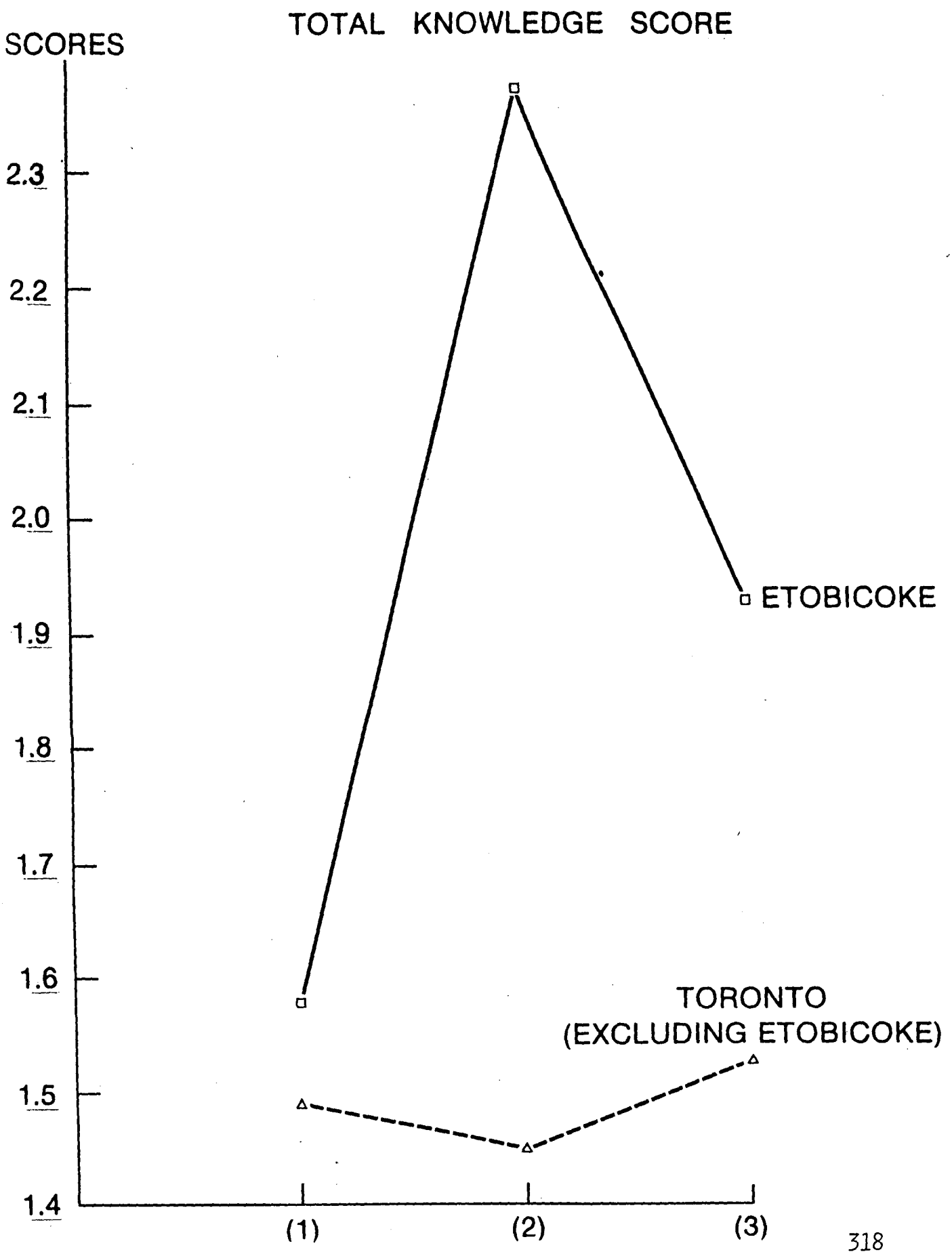
POLICE DATA	DISTRICT 1	DISTRICT 2 (ETOBICOKE)	DISTRICT 3	DISTRICT 4	DISTRICT 5
"Alcohol-related" accidents	t=3.88***↓ df=3.61	t=1.71*↓ df=86 level change = -7.70+	t=1.13↓ df=86	t=2.74***↑ df=86	t=1.68↓ df=86
Proportion of total accidents considered "alcohol-related"	t=2.0**↓ df=86 level change =-.70	t=.74↓ df=86 level change =-1.08	t=1.42↓ df=86 level change =-.56	t=.20- df=86	t=.37- df=86 level change =-.23
"Alcohol-related" injuries	t=1.04↓ df=86 level change =-2.51	t=1.31↓ df=86 level change =-3.06	t=.15- df=86 level change =-.58	t=.15- df=86 level change =.47	t=1.16↓ df=86 level change =-6.04
Proportion of total injuries considered "alcohol-related"	t=1.02↓ df=86 level change =-1.03	t=3.69***↓ df=86	t=1.51↓ df=86 level change =-3.22	t=.28- df=86 level change =-.35	t=.23- df=86 level change =-.24

* p <.1
** p <.05
*** p <.01

\+ The change in level was included for those data subjected to time series analyses

FIGURE 1


STEP 1
STEP 2
STEP 3
STEP 4
STEP 5
(a) ENFORCEMENT
(b) PUBLICITY ABOUT ENFORCEMENT
PUBLIC AWARENESS AND KNOWLEDGE
INCREASED RISK PERCEPTION
DECREASED DRINKING-DRIVING BEHAVIOUR
REDUCED ALCOHOL-RELATED ACCIDENTS


TOTAL KNOWLEDGE SCORE
SCORES
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
(1)
(2)
(3)
ETOBICOKE
TORONTO
(EXCLUDING ETOBICOKE)

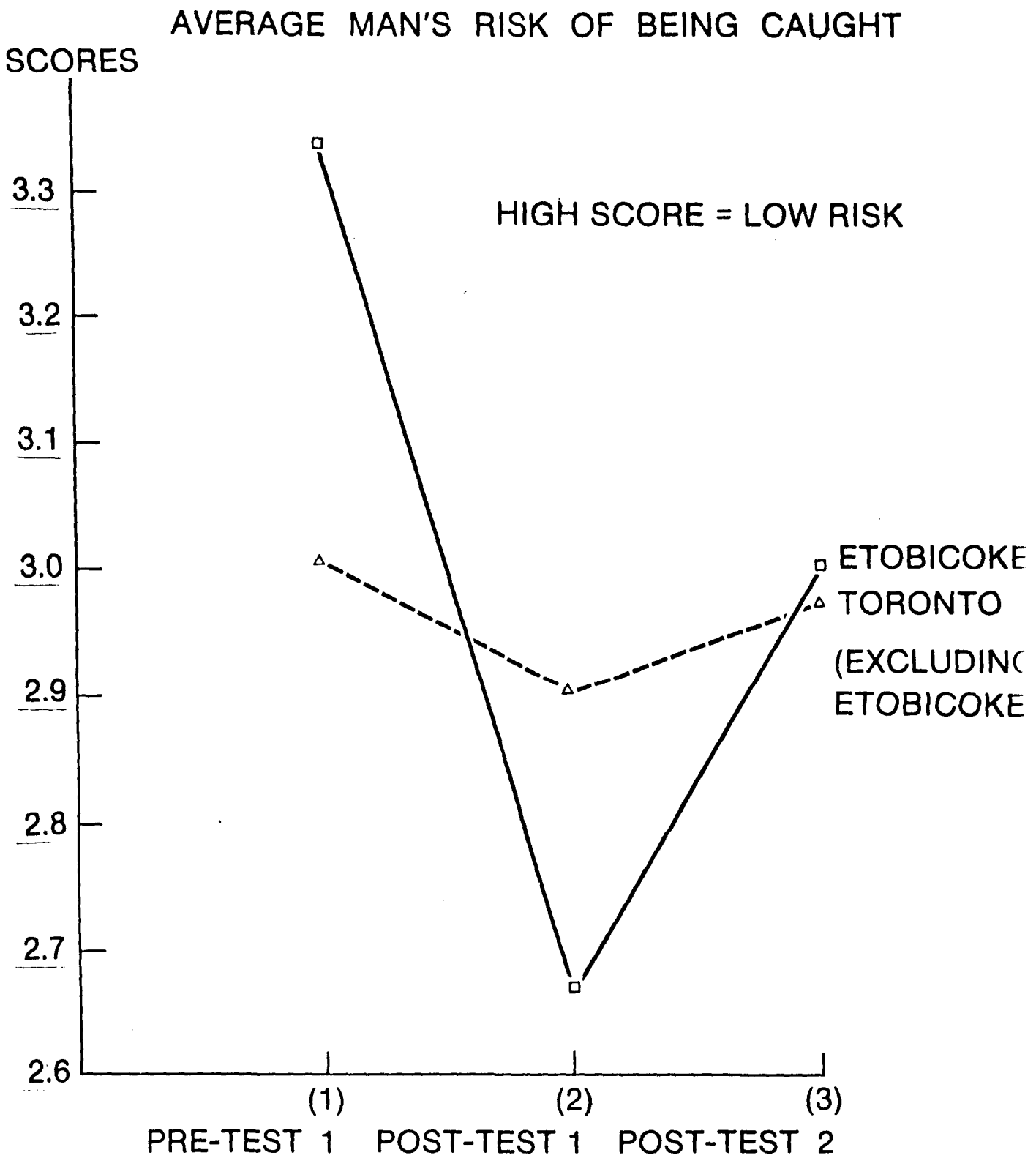

AVERAGE MAN'S RISK OF BEING CAUGHT
SCORES
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
HIGH SCORE = LOW RISK
ETOBICOKE
TORONTO
(EXCLUDINC
ETOBICOKE
(1)
(2)
(3)
PRE-TEST 1
POST-TEST 1
POST-TEST 2

Table 1 presents the results of the time series analyses and t-tests for total and proportion of all accidents and injuries that are considered to be "alcohol-related" for the five police districts of Toronto. The generally downward trends could be due to many possible factors. The R.I.D.E. programme could have had an effect on the other districts. There is some evidence in support of this finding. District 4 (Scarborough), the police district farthest removed from Etobicoke, generally demonstrated increasing or non-changing trends. On the other hand, the downward trends could be reflective of the general levelling off of the consumption rate in Ontario.

INSERT TABLE 1 ABOUT HERE

There were also no suggestive changes in the blood alcohol levels of those drivers suspected of impairment and those involved in accidents. The blood alcohol levels (B.A.L.s.) of suspected impaired drivers showed an insignificant increasing trend for districts 1 ($t = 1.52$, $df = 35$, $p > .05$) and 3 ($t = 1.79$, $df = 35$, $p > .05$), while district 2 ($t = .78$, $df = 35$, $p > .05$), district 4 ($t = 1.23$, $df = 35$, $p > .05$) and district 5 ($t = 1.27$, $df = 35$, $p > .05$) remained the same. The B.A.L.s of those drivers who were involved in an accident and given the breathalyzer, remained the same during the intervention programme for districts 1 ($t = .99$, $df = 35$, $p > .05$), 2 ($t = 1.00$, $df = 35$, $p > .05$) and 3 ($t = .12$, $df = 35$, $p > .05$), while the B.A.L.s increased almost significantly for district 4 ($t = 1.93$, $df = 35$, $p < .06$) and significantly for district 5 ($t = 2.09$, $df = 35$, $p < .05$).

Thus, the results of the police data are difficult to assess because of contaminations and the general inaccuracy of such data. Additionally, data from an independent road-side survey conducted in Toronto in 1974 (Smith,

Effects of Alcohol and Diazepam, Singly and in Combination, On Some Driving Performances

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EFFECTS OF ALCOHOL AND DIAZEPAM, SINGLY AND IN COMBINATION, ON SOME DRIVING PERFORMANCES

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Abstract

Fourteen drivers were given practice and then used on four separate sessions under alcohol alone (0.08%), diazepam alone (up to 10 mg), both alcohol and diazepam, or no drugs, and tested in three driving tasks.

The driving tests were carried out on an airport taxiway in a full-size passenger car. The tests consisted of steering through a serpentine course at 25-40 mph; carrying out an evasive maneuver involving either a sudden lane change to the left or right, or a sudden braking maneuver involving stopping the vehicles as close as possible to a point on the road, from speeds of 25-40 mph; and a speed reproduction and maintenance task in which drivers had to attain a speed between 25-40 mph and maintain it as steadily as possible, without the use of the speedometer.

Results showed: (1) the steering tests were clearly affected by variations in task difficulty, manipulated by driving speed, and test-retest reliability was adequate; (2) considerable intersubject variability in driving performance; (3) considerable intersubject variability of the effects of alcohol and diazepam; (4) significant decrements in driving performance after ingesting alcohol and/or diazepam in the evasive maneuver, and (5) a similar, but not statistically significant trend in steering in the serpentine course; (6) no significant drug effect on (a) speed reproduction, (b) speed maintenance, or (c) controlled braking performance; (7) no significant interaction of alcohol with diazepam.

Introduction

It has been estimated that close to half of the American population drinks alcohol at some time, including about 80% of all drivers (May & Baker, 1977). During the last decade there has been an upsurge in the use of other licit drugs, especially minor tranquilizers, particularly diazepam (Edmiston, 1978). Reports indicate that up to 20% of all persons of driving age are using some licit drug, with diazepam being most commonly used (Kleinknecht & Smith-Scott, 1977). Although there are few accurate data available, it has been estimated that between 11% and 25% of drivers use alcohol along with some other drug.

Alcohol is associated with about 50% of all fatal traffic accidents, and other licit drugs have been a contributing factor in a smaller but significant number of motor vehicle accidents (Mortimer & Sturgis, 1975; Moskowitz, 1973; Waller, 1968). Many of the drug-related accidents appear to involve alcohol in combination with another drug such as diazepam. While it seems that there has been an increase in this situation in recent years, it is difficult to cite accurate figures because of the paucity and variability in the epidemiological data.

The effects of alcohol on driving-related skills are fairly consistent (e.g. Mortimer, 1963; Mortimer, 1974; Moskowitz, 1971; Perrine & Huntley, 1971), but tests on the effects of other licit drugs present variable findings (Clayton, 1976; Dureman & Norman, 1975; Haffner, 1973; Milner & Landauer, 1973); Morland et al., 1975). There is some research which indicates additive or synergistic effects when alcohol is combined with other drugs. However, the extent of these effects on human functioning is often unclear (Lockett & Milner, 1965; Seppala et al., 1975; Schroeder et al., 1974).

Research to date on the effects of licit drugs alone, and in combination with alcohol, has many limitations. A substantial majority of the studies, for example, have been carried out in laboratory settings, often involving relatively simple tests. There have been comparatively few studies to test complex decision-making and perceptual-motor skills, and few studies have been carried out involving actual driving situations.

Studies indicate that when combined with alcohol, diazepam can lead to a significant deterioration in driving-related performance. However, the exact effects on driving performance are still not clear. Consequently, a need exists for further research in this area, involving more complex driving-related tests and actual driving situations (Kleinknecht & Donaldson, 1975; Milner, 1967; Moskowitz & Burns, 1977; Schroeder et al., 1974; Smiley et al., 1975).

Objectives

One objective of the study was to develop and evaluate relevant driving tasks. The tests were evaluated by the degree to which they reflected changes in steering task difficulty as speed was increased, and to the extent that they were affected by the drug condition. The second objective was to evaluate how the alcohol and the diazepam, separately and in combination, affected the driving task. Thirdly, it was of interest to determine the degree of individual differences among subjects in terms of the effects of drugs upon their driving performances.

Method

Subjects

The subjects consisted of seven females and seven males between the ages of 21 and 32. All subjects were at least occasional users of alcoholic beverages. They were paid for participating in the experiment.

Test Site

All driving tests were made on a taxiway at the Chanute Air Force Base, in Rantoul, Illinois. The base is located approximately 15 miles from the University of Illinois at Urbana-Champaign. The taxiway was 150 feet wide and about 1700 feet in length.

Each driving test was delineated by small traffic cones with larger cones at various strategic points such as in the entrance area of each test.

The serpentine test consisted of two cycles of a complex sine wave which is described by:

$$y = 100 \cos B + 5 \cos 2B - 10 \cos 5B$$

The course had a wavelength of 360 ft for a total length of 720 ft, and a peak amplitude of 5 ft. The lateral spacing between the boundaries of the lane was 8.5 ft (Figure 1).

The evasive test (Figure 2) consisted of three lanes, each 11 feet wide and 50 feet long, described by traffic cones. The approach of the vehicle was along the center of the center lane. Along the approach path, two large marker cones were positioned 78 feet and 88 feet, respectively, from a line perpendicular to the entrance of the three lanes. These large cones were reference points for the experimenter to tell the driver whether to take the left or right lane in the evasive maneuver or to go straight in the braking maneuver, with the first cone being the signal point at 35 and 40 mph and the second cone being the signal point for tests conducted at 25 and 30 mph. The stop line in the braking test was 228 feet and 240 feet respectively, from these signal points.

The speed reproduction and maintenance test was defined by 11 cones in a straight line spaced at intervals of 100 feet, so that the distance between the first and last cone was 1000 feet.

Test Vehicle

A 1968 Buick Electra 4-door sedan was used for these tests. The car was in standard condition, except that a speed-holding device with a "resume" position was installed. This device enabled the speed of the vehicle to be automatically maintained at preselected speeds between 25 and 40 mph, as used in these tests. The track width of this vehicle was 68 inches. As a precautionary measure, the vehicle was equipped with a brake control which could be operated by the experimenter seated in the right front seat.

Procedure

Each subject was instructed to have a light meal at least two hours prior to participation in the experiment. Testing was carried out between 1 and 4 p.m. and 4 p.m. and 7 p.m., during daylight hours. Prior to reporting for the test sessions when data were collected, the subjects were familiarized with driving the automobile and each of the tests. They were then informed that, on subsequent sessions, alcohol or a drug or combinations of alcohol and a drug may be administered while the tests were repeated.

Each subject was tested on four separate days which usually occurred during a two week period.

Prior to being driven to the test site a physician gave each subject a capsule which either contained a measured quantity of diazepam or the placebo. On arrival at the test site, each subject was first administered a breath test for alcohol using a Model 900 breathalyzer. Each subject was then given a drink consisting of alcohol and/or orange juice, told to consume the drink within 15 minutes and then again breath-tested after a further 15 minutes had elapsed.

The serpentine test was then conducted at 25 mph. Performance was evaluated by the number of cones that were moved or knocked down during each run. The evasive steering and braking maneuver then followed, also at 25 mph. Performance was measured by the number of cones that were moved or knocked over, which indicated a trial that was failed in the steering lane-change test. In the braking test, performance was measured by the distance at which the front of the vehicle was brought to a stop from two large cones which designated the stopping point.

These two tests were then repeated in this order at 30, 35 and 40 mph, with three trials being given at each speed in each test.

The speed reproduction and maintenance test was then done with three trials being commanded at each of the four speeds, 25, 30, 35 and 40 mph, in a random order. The multiple-event timer of a Hewlett-Packard Model-55 calculator (Figure 3) was used to obtain the time to traverse each 100 feet section of the course, as well as the total time to travel over the distance This enabled the actual speed and the speed between each 100 feet marker to be obtained. These values could be compared with the commanded speed.

Dosage Levels

Alcohol. Pure alcohol was mixed with orange juice to produce a drink of total volume of 200 cc. The amount of alcohol was based upon the weight of the subject and perceived variation of body fat from normal stature. The procedure was the same as used previously by Mortimer and Sturgis (1975). The target alcohol dose level was 0.08%.

Diazepam. Diazepam was made up in capsule form by grinding the tablets to a powder and using a dose level of .05 mg per pound of body weight. Thus, a 150 pound person received 7.5 mg of diazepam.

Placebo. The alcohol placebo condition consisted of 100 cc of orange juice with alcohol wiped around the rim of the glass. The diazepam placebo condition consisted of the same gelatin capsule containing flour.

Experimental Design

A Latin-Square design was used to assign subjects to treatment conditions. This was done to ensure that each order of the four drug treatments was given an equal number of times per group of four subjects. In this way, the effect of the ordering of treatment conditions over the four days of the experiment should be minimized. Each subject worked within one drug treatment condition on each day, and generally completed all four days of participation in the study within a period of two weeks.

A complete factorial design was used with repeated measures, since each subject participated in each treatment condition. In each test there were three trials given at each of the four speeds.

Results

Steering Performance in the Serpentine Course

The analysis of variance of the number of cones moved in the serpentine course showed a significant main effect only for driving speed. The only significant interaction was between speeds and trials, which is not of interest here though it modifies the findings of the effects of speed on performance.

The mean number of cones moved during each trial was least at 25 mph, and increased with speed (Table 1). This indicates that steering performance was impaired consistently as speed increased.

A Newman-Keuls test showed that there was no significant difference in the number of cones moved at 25 mph or 30 mph. However, there was a significant difference in performance between those lower speeds and 35 and 40 mph.

There was no significant effect of drug condition on the mean number of cones moved in the serpentine course. However, about twice as many cones were moved during each trial in the drug conditions as compared to the placebo condition (Table 2). Table 2 also shows that driving performance during the practice session was very similar to performance during any of the drug conditions.

Evasive Steering

A failed trial was recorded whenever a subject moved cones or steered the test vehicle through the wrong chute in the evasive steering task. The mean proportion of failed trials at 30 mph and 35 mph was substantially greater than at 25 mph, while at 40 mph there were about twice as many trials failed than at 30 mph and 35 mph (Table 3). Analyses of variance done at each speed to evaluate effects of the drugs showed that all drug treatments produced a significant decrement in performance compared to the placebo, at 40 mph. No significant differences between drug conditions were found at lower speeds, although the general trends were similar at all speeds.

Table 4 shows the mean proportion of failed trials for the combined speeds as a function of drug condition.

Braking

Only four controlled braking trials were performed by each subject under each of the drug conditions. As the trials were not evenly distributed among the four speeds, the analysis of variance was performed for the combined speeds. This approach seemed reasonable because there was no apparent effect of the initial speed on the stopping point. No significant trends were found in stopping accuracy as a function of drug condition. The algebraic means indicate that subjects generally stopped the vehicle before the target position more often than beyond it, and the absolute means of drug condtions show that drivers could stop the vehicle quite close to the target position (Table 5).

Speed Maintenance

Figure 4 shows the reproduced speeds for the target speed of 25 mph, at 100 feet intervals for each drug condition. The mean reproduced speeds for the practice conditions were consistently lower than for any of the other drug conditions. Only very minor differences were obvious between the drug and placebo conditions. There was a similar trend in speed maintenance for all the drug conditions. The reproduced speeds declined markedly during the first 200 feet of the course, then showed a gradual increase between 200 and 900 feet, with a slight decline between 900 and 1000 feet. Also, the speed reproduced was above 25 mph in all conditions, and speed was maintained most consistently in the last 400 feet.

A similar pattern in speed maintenance was recorded for all the other speeds: 30, 35 and 40 mph. The errors in under-estimation of speed, resulting in reproduction of speeds above the target speeds, were reduced as the target speed increased.

The analysis of variance on the speeds maintained at each 100 feet marker showed a significant four factor interaction of drug x speed x trial x interval indicating that there was a weak and specific effect of drug conditions on the performance.

Speed Reproduction

Analyses were carried out on both absolute and algebraic speed errors. The purpose of showing algebraic errors was to discern trends of under- or over-estimation that could be hidden by absolute values.

The analysis of variance of the absolute errors of speed reproduction showed a significant main effect of speed; and significant interactions of drug x trial, speed x trial, and drug x speed x trial. Thus, there were no consistently significant effects of drug conditions.

The accuracy in reproducing speed was greatest at 40 mph, and least at 25 mph (Table 6). According to the Newman-Keuls test, absolute mean errors of speed reproduction at 25 and 30 mph were significantly greater than at 35 and 40 mph.

Ratings

Analyses of variance of the subjective data indicated that there were significant differences among drug conditions for perceived intoxication, drowsiness and safety to drive a vehicle.

Table 7 shows that subjects felt increasingly intoxicated after: placebos, diazepam, alcohol and alcohol/diazepam combined. The perceived levels of intoxication due to alcohol and alcohol/diazepam combined were significantly greater than the other treatments.

Table 7 shows that subjects perceived themselves to be slightly drowsy after taking alcohol and/or diazepam. Drowsiness was not significantly different for any of the drugs which were, however, rated significantly higher than the placebo and practice conditions.

The mean ratings showed that subjects felt reasonably safe for the diazepam condition, marginally safe after alcohol alone, and relatively unsafe after the combination of alcohol and diazepam (Table 7). The alcohol and alcohol/diazepam condition were rated significantly less safe for driving than the other treatments.

Discussion

Steering Performance in the Serpentine Course

There was a significant effect upon steering performance in the serpentine course. Degradation of performance increased as a function of speed (Table 1). This result is not surprising and does add to the validity of the test as a measurement of steering performance.

The effects of the drug conditions upon steering performance in the serpentine course did not quite reach statistical significance. However, the performance under the drug conditions was similar to that in the initial practice day, with about twice the mean number of cones moved as in the placebo condition (Table 2). It could be anticipated that with additional subjects the differences would also reach statistical significance.

The performance decrement was similar for the three drug conditions indicating that diazepam alone and alcohol alone had a similar impairment effect, and there was no additive effect of combining both drugs.

This study shows similar trends reported by other researchers. Smiley et al. (1975) recorded better steering performances in a serpentine course after subjects had taken placebos compared to drug conditions (including 5 mg diazepam and 0.06% alcohol, alone and combined). Similarly, Coldwell et al. (1958) reported significantly more cones moved when subjects drove through a gymkhana-type course after having ingested alcohol (0.078% BAC).

A number of simulator studies have shown decrements in tracking performance after alcohol and diazepam ingestion. These tracking tasks are somewhat comparable to the steering task in the serpentine course. Mortimer and Sturgis (1974) reported an increase in tracking errors after subjects had ingested alcohol (up to 0.10% BAC). Drew et al. (1958) and Mortimer (1963) found that BAC's as low as 0.03% reduced tracking performance. Similar results were obtained by others (Dott & McKelvey, 1977; Forney, Hughes & Greatbach, 1974; Moskowitz, 1971).

A simulator study (Linnoila & Hakkinen, 1974) showed that under a combined alcohol (0.5 gm/kg) and diazepam (10 mg) condition, subjects drove off the road a significantly larger number of times than after either drug alone. The researchers reported at least an additive effect on steering performance decrement due to the combined drug condition. Moskowitz and Burns (1977) too, reported greatest impairment on a pursuit tracking task under a combined diazepam (5 mg) and alcohol (0.06% BAC) condition.

Evasive Steering

The analyses of performance in the evasive maneuver showed a significant increase in the mean proportion of failed trials as a function of speed. This result was expected, and adds to the validity of this test also as a

measure of steering ability. The largest proportion of failed trials were recorded at the two highest speeds, particularly at 40 mph.

There was also a significant drug effect on evasive steering at 40 mph. The proportion of failed trials under the three drug conditions was about twice that of the placebo condition, but there were no significant differences among the three drug conditions.

The evasive steering maneuver demanded a rapid response to a single decision (i.e. to turn right or left) and to control the vehicle in a transient condition while high lateral accelerations were reached. This maneuver has distinct relevance for safe vehicle control and the results indicated detrimental effects of alcohol and diazepam at 40 mph, but did not show that either drug potentiated the other.

There are few studies involving the effects of drugs on evasive steering. However, the present findings support those of a study conducted by Laurell (1975), in which he found that after alcohol ingestion (.042%), subjects hit significantly more cones in an evasive maneuver at 50 km/hr than when they took the placebo.

Choice reaction times were involved to some extent in the evasive steering task. Simulator studies show some significant effects of alcohol on choice reaction times. Case et al. (1971) for example, reported that after alcohol (0.08% BAC) subjects recorded an average increase in reaction time to a subsidiary task of 35%. Similar results were reported by Loomis and West (1958), Keiper (1972) and Moskowitz (1971).

Braking

There were no significant drug effects on stopping accuracy, nor was there any marked practice effect. Subjects were able to bring the test vehicle to a controlled halt with a relatively high degree of accuracy (Table 5).

Contrary to our results were those of another study (Smiley et al., (1975) which found that stopping accuracy was best under placebo conditions, and deteriorated under alcohol and diazepam, and was worst under alcohol alone.

Laurell (1975) too, found that subjects under the influence of alcohol (.042%) recorded a significant decrement in braking performance. In that study, subjects in the alcohol condition took longer distances to stop a vehicle, compared to subjects in a placebo condition. The differences in results between that study and our study might be explained by the fact that Laurell's subjects were required to stop the vehicle as quickly as possible after being given a stopping signal. On the other hand, our subjects were instructed to bring the vehicle to a controlled stop as accurately as possible in relation to a target point.

Speed Maintenance

There was no clearly significant effect of the drug treatments on speed maintenance, at least over a relatively short distance (1000 feet).

There was a very similar pattern of speed maintenance at all speeds, and for all drug conditions, as illustrated in Figure 4.

The general decrease in speed furing the first 200 feet, for all speeds and drug conditions, was an interesting phenomenom, and may have been partly due to initial speed stabilization. Subjects were instructed to drive the vehicle up to what they estimated to be the target speed, and maintain it, prior to reaching the start of the speed reproduction course. However, it appears from the results of this task, that subjects consistently felt they were driving too fast by the time the vehicle entered the course, and consequently compensated by reducing speed during the first 200 feet of the task. This was then apparently followed by a gradual increase in speed until almost the end of the course (Figure 4).

There is a paucity of data on the effects of drugs on speed maintenance. A study by Mortimer and Sturgis (1975) involved speed maintenance and car-following tasks on the highway. The results of that study suggest that drivers under the influence of the effects of alcohol (up to 0.10% BAC) have greater variability in speed-holding. However, our study failed to support this finding, possibly because the course was not of sufficient distance for any drug effect to occur.

These findings suggest that while alcohol (up to 0.10% BAC) may effect speed maintenance in highway driving (Mortimer & Sturgis, 1975), alcohol (0.08% BAC) and/or diazepam (up to 10 mg) do not have any significant effects on speed maintenance over short distances.

Speed Reproduction

The speed reproduction test indicated that subjects were reasonably accurate in reproducing commanded speeds between 25 and 40 mph. But, subjects underestimated their speed by about 20% at the 25 mph commanded speed. Greatest accuracy was achieved at 40 mph, the highest command speed, where the mean error was only 8%.

There was no significant effect of drugs on speed reproduction accuracy. These findings agree with those reported by Drew et al. (1958) who found that alcohol (up to 0.08% BAC) did not result in any significant effect on the average speeds at which the subjects operated a vehicle.

However, contrary to this are the data from a recent driving simulator study (Dornberg, 1975) which indicated that drivers with BAC's of 0.08% drove 15% faster than when sober.

Variable results of speed reproduction were also produced in a study by Smiley et al. (1975). Subjects drove faster after ingesting placebos, compared to the drug conditions (5 mg diazepam alone, and/or 0.06% BAC alcohol). Speeds were also faster under alcohol compared to the alcohol/diazepam condition. Contrary results are presented by Linnoila and Hakkinen (1974) who found that subjects drove faster after diazepam (10 mg) compared to drivers using placebos, in a driving simulator study.

Ratings

Insignificant levels of intoxication were reported under the placebo and diazepam conditions. However, under alcohol and alcohol/diazepam combined, subjects reported a significantly greater degree of intoxication.

Diazepam, alcohol and alcohol with diazepam significantly increased drowsiness, and alcohol and alcohol with diazepam were perceived to make driving significantly less safe.

Thus, alcohol--singly and combined with diazepam--was perceived to increase drowsiness and the hazardousness of driving, as well as feelings of intoxication. Diazepam increased perceived drowsiness. Therefore, the subjective effects of the drugs were quite marked, although only moderate levels of the drugs were used. These findings reinforce those of steering performance which showed some effects of the drugs and strong trends paralleling the ratings.

Observations

One of the most noticeable outcomes of the tests was the substantial variability of effects of the drugs. Some subjects were virtually insensitive to the effects of diazepam during at least the first two hours after ingestion. Other subjects reported severe drowsiness, which was reflected by significant deterioration in driving performance. Many of the participants reported peak drowsiness between three and seven hours after diazepam ingestion.

Some subjects reported being severely impaired by 0.08% alcohol and were surprised at how well they could perform the evasive maneuver and serpentine steering tasks. Some subjects suggested that while they could perform the driving tasks reasonably well under the influence of alcohol and/or diazepam, they felt they would probably have considerable difficulty responding to emergency-type tasks such as emergency swerving or emergency braking. On the other hand, some subjects who reported little subjective feeling of impairment after taking diazepam and/or alcohol, appeared to be significantly affected by the drugs when performing the steering tasks.

Diazepam did not appear to have any significant additive or synergistic effect when combined with alcohol.

Conclusions

It can be concluded from this study that moderate doses of alcohol and therapeutic doses of diazepam can have a detrimental effect on steering performance.

1. Individuals vary widely in the way they are affected by alcohol and diazepam.

2. Doses of diazepam that are commonly prescribed for patients who use the drug as an anti-anxiety medicine can have a detrimental effect upon the ability to control a vehicle in the roadway as well as impairing evasive steering performance.

3. Moderate doses of alcohol (0.08% BAC) can have similar effects to diazepam (up to 10 mg) on steering performance.

4. Alcohol in moderate amounts can lead to significant subjective impairment in driving ability.

5. Both alcohol and diazepam alone, or in combination, can cause drowsiness. It is possible that drowsiness, several hours after ingestion of diazepam, poses a greater hazard to traffic safety than during the initial hours of drug use.

6. Some drivers are able to successfully concentrate on single-attention type tasks such as evasive steering or steering accuracy while under the effects of moderate doses of diazepam and/or alcohol.

7. Moderate doses of alcohol and/or diazepam do not appear to significantly affect the ability to bring the vehicle to a controlled stop.

8. Neither diazepam nor alcohol, in moderate doses, significantly affect the ability to reproduce or maintain speed.

9. There is no significant interaction of moderate doses of alcohol with diazepam, at least as it affects the tasks performed in this study.

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Fig. 1. View of serpentine course.

Fig. 2. In the approach lane to the evasive steering or braking test.

Fig. 3. The experimenter operating the HP-55 multiple-event timer in the speed reproduction/ maintenance test.

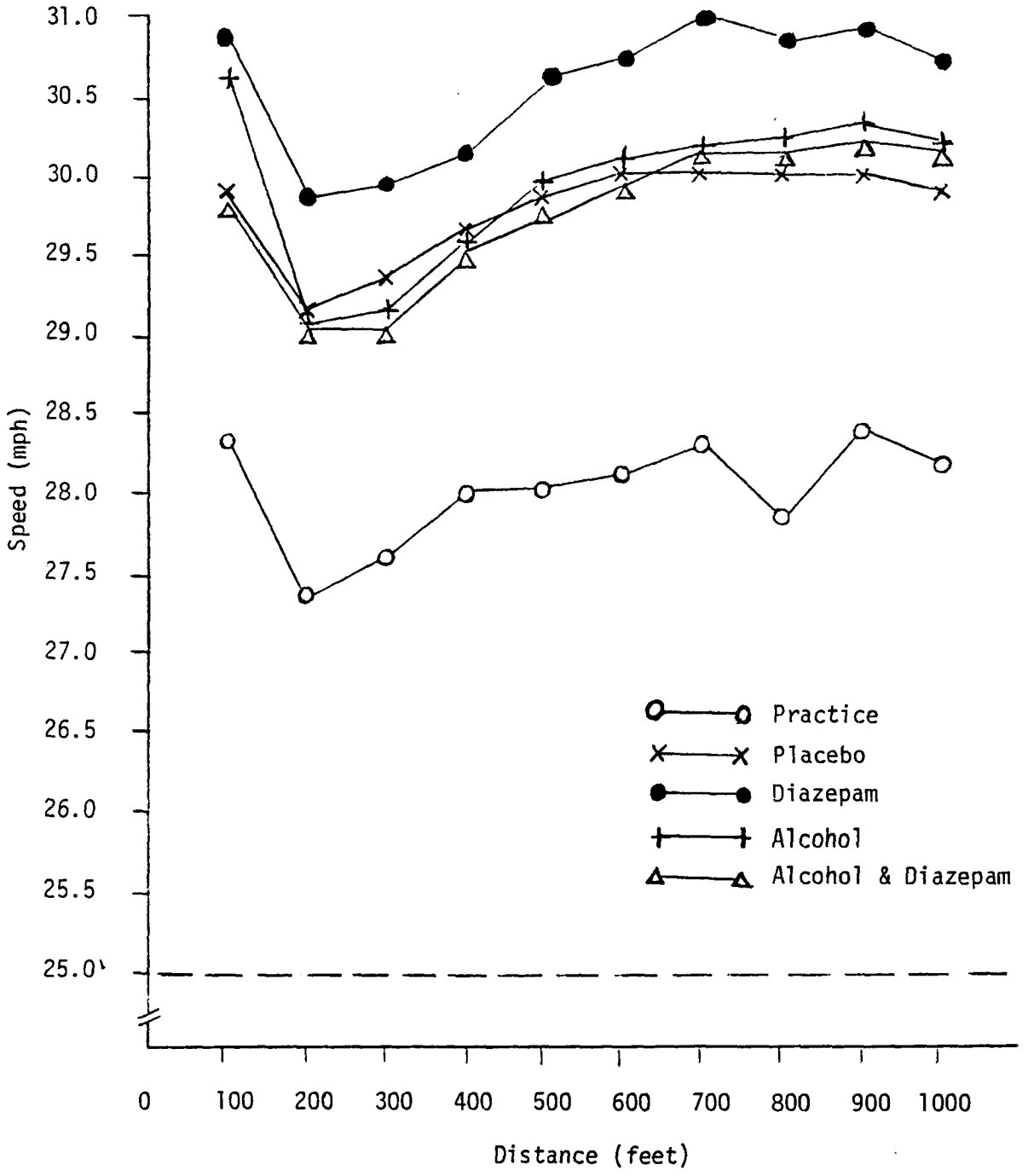

Figure 4. Speed Reproduction for 25 mph Target Speed, as a Function of Drug Condition, at 100 feet Intervals.

Table 1

Mean Number of Cones Moved per Trial in the Serpentine Course as a Function of Speed

Speed (mph)			
25	30	35	40
.9	1.1	1.5	2.0

Table 2

Mean Number of Cones Moved Per Trial in the Serpentine Course as a Function of Drug Condition

Drug Condition				
Practice	Placebo	Diazepam	Alcohol	Alcohol and Diazepam
1.5	.66	1.3	1.6	1.5

Table 3

Mean Proportion of Failed Trials in the Evasive Maneuver as a Function of Speed

Speed (mph)			
25	30	35	40
.08	.31	.38	.70

Table 4

Mean Proportion of Failed Trials in the Evasive Maneuver as Function of Drug Condition

Drug Condition					
Practice	Placebo	Diazepam	Alcohol	Alcohol and Diazepam	Mean
.36	.24	.44	.36	.45	.36

Table 5

Mean Deviation in Stopping Position From Target Position in Braking Test by Drug Condition, in Inches

	Drug Condition				
Means	Practice	Placebo	Diazepam	Alcohol	Alcohol and Diazepam
Absolute	9.8	7.5	9.5	10.5	7.5
Algebraic	-5.7	-3.7	-2.6	- 5.3	-1.7

- Denotes stopped before target position.

Table 6

Absolute Mean Errors in Speed Reproduction as a Function of Drug Condition and Speed*

	Drug Condition					
Speed (mph)	Practice	Placebo	Diazepam	Alcohol	Alcohol and Diazepam	Mean
25	4.1	5.4	5.9	5.4	5.3	5.2
30	4.1	5.1	4.1	5.2	4.3	4.6
35	3.0	3.6	3.3	3.8	2.9	3.3
40	2.6	3.3	2.8	3.7	3.1	3.1
Mean	3.5	4.2	4.0	4.5	3.9	

* Mean errors are expressed in mph.

Table 7

Mean Ratings of Perceived Intoxication, Drowiness,

and Safety to Drive

	Practice	Placebo	Diazepam	Alcohol	Alcohol and Diazepam
Perceived Intoxication	1.0	1.2	1.4	2.8	3.1
(1=none; 2=slight; 3=moderate; 4=extreme)					
Perceived Drowsiness	1.0	1.0	1.6	2.2	2.0
(1-none; 2=slight; 3=moderate; 4=extreme)					
Perceived Safety to Drive	1.0	1.1	1.5	2.3	2.7
(1=very safe; 2=marginally safe; 3=relatively unsafe; 4=very unsafe)					

Development and Evaluation of a Traffic Safety and Alcohol Program For Senior Adults

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A paper presented at the 1979 Annual Forum
National Council on Alcoholism, Washington, D.C.
April 27-May 2, 1979

DEVELOPMENT AND EVALUATION OF A TRAFFIC SAFETY AND ALCOHOL PROGRAM FOR SENIOR ADULTS

Introduction

Each year approximately 46,000 people die in traffic accidents. Among them are senior adults (55 and over) who are involved both as drivers and pedestrians. As drivers they are second to the worst group, the 15-to-24-year-olds. As pedestrians they are the victims in one out of every three deaths—the highest for any group.[1]

This unfortunately high involvement may be due in part to their declining ability to use the senses necessary for driving or walking safely in traffic. Older people do not hear, see, or perceive as acutely as younger people.[2] Another point to be considered is that alcohol is a factor in at least half of all traffic fatalities,[3] and recent studies suggest that alcohol abuse among older people is far more prevalent than heretofore recognized.[4] Thus the combination of decreasing psychomotor skills and increasing alcohol consumption may find older adults especially vulnerable to the tragedies of drunken driving and pedestrian injuries and fatalities.

In driving, for example, one must sense, decide and act. Sensing means being alert to what is happening in traffic, and most such clues reach the driver through vision. He must then quickly decide what to do about what he sees and translate his decision into some action like steering, braking, or accelerating.[5] For some years, the declining sensing and acting skills of the senior adult probably have been compensated for by good judgment—an experientially derived ability which makes him superior at knowing when to take risks or avoid them.[6] Ironically, while alcohol consumption ultimately decreases all driving skills, the first to go is the decision-making ability on which the senior adult has increasingly relied over the years.[7] A similar conclusion could be reached concerning the senior adult as a pedestrian.

Meanwhile, alcoholism among the elderly "is a significant social-health problem in rural, suburban and urban populations."[8] Retirement with its boredom, lowered income, loss of status—being out of touch with the work and the people that have given the individual a sense of worth for so long—may be a factor in this. So might bereavement, loneliness, loss of agility and, as time goes on, other factors that progressively restrict alternatives to alcohol for feeling better about oneself and one's circumstances.[9] To make matters worse, the older problem drinker often is "hidden" by family, friends, physicians, nursing homes, and thus goes unrecognized in public statistics and inadequately considered in preventive and treatment programs.[10]

What lends even more urgency is the projected increase in the number of senior adults. At present one in ten Americans is 65 or over; by the year 2000 the figure will be one in nine.[11] The present 26 million (plus) drivers over 55 represent about 21 percent of licensed drivers

while the 10.5 million over 65 comprise 9 percent. These numbers have been increasing each year—25 percent since 1961.[12] Further, it is most likely that these increases will continue to build a larger and larger pool of senior adults involved in traffic as drivers and pedestrians, for the need to stay independent through mobility has a high priority in our culture. As one authority has said:

> [For senior adults] . . . losing one's driving privilege voluntarily or otherwise, is probably second only to total confinement in its effect on lifestyle, access to the benefits of our society, and general well being.[13]

It was believed that if senior adults were informed of their high vulnerability and of the probable reasons for it, they would be in a better position to take remedial action. An extensive literature search revealed no program directed specifically toward this end. Therefore, the program, Senior Adults, Traffic Safety and Alcohol, was systematically planned to alert senior adults to their special vulnerability to traffic fatalities and the role of alcohol in these tragedies as well as in some of the other personal and social areas of their lives. It was developed and evaluated in six steps:

(1) A survey was taken of the population for whom the program was intended;
(2) Goals and objectives were established;
(3) A criterion instrument was written and field tested;
(4) The program was designed and produced;
(5) The program was field tested, and
(6) Results were reported.

Survey

It was believed that to be effective for senior adults, a program should be planned for easy presentation at senior centers or other places where they gather, incorporating what is known about their learning characteristics and the techniques most likely to attract attention and influence behavior. It seemed the best input for such a program would come from the population for whom the program was intended, the senior adults themselves. Therefore, a survey was prepared and administered to 100 senior adults to determine what persons over 55 knew about traffic fatalities and alcohol, what they might do to reduce their vulnerability, and how the program might best be presented.

The survey sought information in six main areas:

(1) Personal data such as age, sex, employment, and drinking habits;
(2) Senior adults' observations of each other in traffic safety and drinking situations;
(3) Facts;
(4) Opinions and attitudes;
(5) Countermeasures in relation to traffic safety and alcohol; and
(6) Opinions on the most suitable format for a program.

The final 69-item form was given to 100 volunteers from senior adult centers, retirement communities and traditional communities. The sample appeared to be active, mobile people like those for whom the program was intended—drinkers, non-drinkers and persons who were part of highway traffic as drivers, passengers, or pedestrians. In fact the demographic data showed a close resemblance between participants and the total national population of persons in the same age bracket. For example, in the survey 80 percent of the men were married, while nationally 78.9 percent were married. Fifteen percent of the survey respondents were working full time, compared with 14 percent of the same age in the population at large.[14]

As stated above, the survey had six main areas of inquiry. The first asked for demographic data and yielded a general profile of senior adults and their drinking habits. The respondents ranged in age from 50 to 75 and over; 82 percent were over 61, 30 percent were 71 and older. Fifty-three percent were females, 47 percent males. Most were married (61 percent) or widowed (24 percent). Seventy-eight percent were fully retired.

Fifty-five percent started driving in their teens, 91 percent had a driver's license, and 83 percent still did their own driving. Fifty-eight percent drank, mostly cocktails (31 percent) and whiskey (28 percent). Most drinkers chose friends (38 percent) and spouses (28 percent) as drinking partners; most drank at home (60 percent). Over half of the drinkers imbibed from two to three times a week to everyday. Of the drinkers, 50 percent drink between 4 p.m. and 8 p.m., and 38 percent between 8 p.m. and midnight, primarily to be sociable and relax (79 percent).

These answers reflected an active, mobile group with considerable experience in both drinking and driving, and were used to create an accurate program (film) image. Their answers also suggested that the program should acknowledge the positive side of drinking (for some) as well as the skills which have allowed respondents to drive successfully for a long time. Thus the final program (film and pamphlet) emphasizes an entertaining and positive approach to the problems of older people vis-a-vis alcohol and traffic. Finally, since they mainly did their drinking with close associates, it seemed they might be encouraged to assume some responsibility for trying to influence their behavior toward one another if alcohol abuse threatened.

The second section of the survey dealt with the respondents observation of senior adults in traffic safety and drinking situations. The sample splits (51 percent yes, 42 percent no) on whether senior adults are aware of the dangers of combining alcohol and other drugs or medications, even those prescribed by a physician—an important point because senior adults are frequently on medications for a variety of conditions associated with aging. Sixty-one percent had relatives, friends or neighbors with a drinking problem, 26 percent of whom got themselves into traffic trouble, primarily as drinking drivers. When asked if they thought senior adults with an alcohol problem recognized it, very few thought they did.

The third survey area comprised 14 true-false and multiple-choice questions chosen to find out how much factual information the group had about the relationships between senior adults, alcohol and traffic safety. Out of a possible 14, the average score was 8.22. However, answers

revealed that drinkers among the respondents were significantly ($p < .001$) more knowledgeable than non-drinkers in this area.

What they knew and did not know was used to guide emphases of factual content for the program. Further, traditional item analyses were applied to the 14 items and those judged satisfactory were considered for the pre/post test batteries to be used in evaluating the program.

Section four of the survey was intended to probe the attitudes of senior adults about alcohol and traffic safety--what they realized and were willing to do about the hazards of alcohol abuse. A synthesis of the open-ended replies found senior adults more sure of their own recognition of dangers associated with alcohol abuse than they were of such recognition by other persons their age. Moreover there is little agreement about whether senior adults are willing to examine their own drinking, driving, and pedestrian habits, and take the necessary corrective actions for themselves and others. Consequently the program supplements facts with efforts to enhance motivation toward assuming personal responsibility.

The fifth main area of the survey dealt with practical counter-measures--what senior adults would do to avoid drunken driving and walking in traffic. These practical counter-measures suggested by the senior adults themselves were selectively incorporated into the program.

The final section of the survey solicited information on the format for the program. A short color film was endorsed as was a take-home pamphlet of five pages or less.

Fifty-one percent felt a discussion period immediately after the film would be a valuable addition, and the majority chose senior centers as the best place for reaching the greatest number of senior adults, either between noon and 4 p.m. or 4 p.m. and 8 p.m. Television was chosen as the best medium for advertising the program, newspapers and word-of-mouth tied for second.

In the main, survey results were integrated with the findings of a comprehensive literature search of learning characteristics, alcohol abuse, and traffic safety to create and present the program, Senior Adults Traffic Safety and Alcohol--an 11-minute animated film, 6-page pamphlet and discussion period. Further, survey results were utilized to form the goal of the program as well as the knowledge, attitudinal and behavioral objectives.

Goal and Objectives

The goal is to help senior adult drivers and pedestrians understand their special vulnerability to alcohol-related traffic fatalities, and what they can do for themselves and others to prevent or reduce these tragedies. To reach this goal a total of 24 objectives were established--11 knowledge, 6 attitude, 7 behavioral intention.

Criterion Instrument

As soon as program objectives and content were chosen, a pre/post test battery was constructed to evaluate program effectiveness. The first step was collecting and writing items that would measure change in each of the 24 program objectives. By utilizing results of the

survey, existing measures, and creating items where necessary, at least four items were written for each objective.

In all there were 59 knowledge (multiple choice and true-false), 28 attitude, and 30 behavioral intention items for a total of 117. Measures of attitude and behavioral intention are summated rating scales developed through Likert scaling procedures. All attitude and behavior items were written as declarative statements following the general guidelines outlined by Edwards,[15] and have five-position response options: for attitude—strongly agree, agree, not sure, disagree, strongly disagree; for behavioral intention—no, probably no, maybe, probably yes, yes.

This test battery was administered to 214 senior adults in three states, and data were combined for traditional item analysis. The best items were selected for two 48-item parallel forms of the test: Form A and Form B. Alternate forms of the criterion instrument were judged to be desirable for pre/posttesting because of the short duration of the program.

The Program

The program was planned and tested as a package--film, pamphlet, discussion. While the film could be shown or the pamphlet distributed exclusive of each other or of a discussion period, the whole was thought to be more effective than the parts. The film offers limited exposure to information essential in achieving program objectives. Since senior adults suffer varying degrees of visual and auditory decline, in-hand printed information contained in the pamphlet serves to review and clarify what has been seen in the film. The pamphlet is self-contained, but it lacks some of the information and much of the motivational impact of the film. And the discussion period goes beyond both in terms of providing personal involvement in the learning experience. ~~In addition, by providing variety in pacing, the program was geared to maintain attention~~.

Film

The film was planned with senior adults in mind. Studies indicate that for the older person more learning occurs with multiple sensory input. There is more recall of material presented both pictorially and orally.[16] This suggested a film. Of the various types of film, animation was selected as the best for portraying facts and concepts related to the program objectives. This technique also permits a freedom of delivery whereby information can be easily re-emphasized by picture, printed word and sound. It allows a sequential pacing of material and exaggeration not possible with live actors depicting real situations.

With aging, sensory acuity declines, illumination needs to be increased, sound to be modified, competing noise eliminated, irrelevant stimuli removed. Colors need to be bright with emphasis on red, orange, and yellow. Imagery needs strong contrast with clear sharp lines. Material needs to be highly organized and moderately, but stimulatingly paced.

Animation, in addition to being relatively timeless, is very adaptable. The senior adult age span of 55 to 85 years represents 30 years and there is no "typical". Animation permits characterizations with whom all can identify.

The film capitalizes on senior adults' concern with maintaining mobility--the independence to drive or walk when and where one wants to--to convey information about vulnerability to traffic fatalities and encourage preventive measures. Because senior adults may at first be quite defensive about drinking habits and traffic accidents, the film quickly presents a positive approach. And while it conveys many facts, the mood is entertaining.

There is visual and auditory appeal--lively colorful scenes and an easy tempo of music and narration that carry the viewer into the familiar life styles of active, mobile people--traveling, dancing, shopping, entertaining, and visiting. The positive image reflects our cultural traditions in which alcohol plays a part--and admits to the good times that for some are associated with drinking. Thus, the introductory scenes lead the viewer to the major premise of the film--alcohol can be fun for some, but when misused can be very damaging.

The film highlights the following:

1. Alcohol and its effect on the body;
2. Skills needed to drive or walk safely in traffic and the effect of alcohol on these;
3. Negative consequences of an arrest for driving while intoxicated;
4. Meaning of blood alcohol level (BAL)--and how it is influenced by beer, wine, and whiskey in usual size servings;
5. Dangers of mixing alcohol and commonly used drugs and medications, including those prescribed by physicians;
6. The relative effectiveness of "sobering up" techniques;
7. Statistics on senior adults and traffic fatalities and the role of alcohol in these; and
8. Effective ways to avoid letting alcohol interfere with driving or walking safely in traffic.

The film appeals to viewers to get involved in preventive action. It reminds them they would do a great deal to help friends in other types of emergencies such as a heart attack, yet drunkenness can turn out to be just as fatal. In conclusion it repeats that in our culture alcohol has been associated with good times; but used unwisely it can cost us our mobility--and a great deal more.

Pamphlet

The pamphlet also was planned with the characteristics of senior adults in mind. It is a six-by-nine inch, six-page, large print, color production which can be read in about four minutes. Color contrast against a neutral background is good in both text and illustrations. Length and print-size conform with what senior adult survey participants recommended as likely to attract and hold attention.

Each page has a picture from the film; related text reinforces the messages of the film. The inside front cover has five multiple-choice questions under the heading, "What Do You Know About Alcohol and Traffic

Safety?" The correct answers can be found by turning the page upside down. These questions and answers are meant to stimulate interest in the pamphlet and in the later discussion.

Discussion Period

The discussion period takes place immediately after the film and pamphlet and was scheduled for 30 minutes of a one-hour program, but could be expended if invited authorities or other special activities are planned. A special Leader's Guide prepared for the program suggests additional questions and small group activities. For senior adults there is evidence that more attitude and behavior change occurs when the learning experience provides the opportunity for personal involvement. For this reason, discussion is an important segment of the program.

Evaluation

The study was designed to assess the effectiveness of a program (consisting of an 11-minute animated film, a six-page pamphlet and a discussion period) to improve the knowledge, attitude and behavioral intentions of senior adults in relation to traffic safety and alcohol. The program was field tested in seven states and the Province of Ontario.

Design

The study employed a pretest-posttest control group experimental design. This is among the strongest reviewed by Campbell and Stanley[17] and controls for all eight potential sources which might jeopardize the internal validity of a study:

Paradigm . . . E R O_1 X_1 O_2 (X_2)

C R O_3 X_2 O_4 (X_1)

where

E = Experimental Sample

C = Control Sample

R = Randomization

O_1, O_3= Pretest Measures

X_1= Experimental Program

X_2= Placebo Program

O_2, O_4= Posttest Measures

In the above paradigm, the programs in parentheses takes place where indicated, but are superfluous to the study design. Within each of the eight sites the sample was systematically assigned to experimental and control groups. Both experimental and control groups were pre and post tested. The experimental group received the program Senior Adults, Traffic Safety and Alcohol—film, pamphlet and discussion period. The control group received a placebo program--Senior Power — film, pamphlet, and discussion period. Each subject's test was matched pre/post. Parallel forms of the test (A and B) were administered. In four of the eight sites, Form A was used as a pretest, Form B as a posttest, with the reverse true for the other four sites.

Sample

With a view toward generalizing the findings, a national sample (N = 833) was selected from eight sites--the Province of Ontario and seven states (Wisconsin, Vermont, Virginia, Florida, Ohio, Washington, California). The volunteer groups of senior adults were recruited from a variety of settings including senior centers, civic groups, retirement centers, YWCA's; they represented a wide range of geographical areas and population characteristics.

Of the 833 subjects, 68 percent reported drinking sometimes, 23 percent reported they did not drink, and nine percent did not respond to the question. All in all they appeared to represent mobile, active senior adults who would face the kinds of situations to which the program was addressed.

Analysis

Kerlinger[18] states that analysis of covariance is an appropriate statistical procedure for dealing with intact groups which may differ on a concomitant variable related to the dependent variable. Since sites were representative of diverse intact groups, this procedure was utilized with pretest measures as covariates. The independent variables were group (two levels, experimental and control) and site (eight levels, one for each state); the dependent vector variable was the composite knowledge, attitude and behavioral intention posttest scores.

Results

The analysis yielded a significant main effect due to group on the composite F (1,812) = 76.38, $p < .001$, and the same level of significance held for each of the three dependent variables—knowledge, attitude, behavioral intention. The highly significant positive F-ratios were favorable indications of overall program effectiveness.

Frequency distributions were generated for both pretest and posttest administrations for the three overall measures (one each for knowledge, attitude, behavioral intention). A t-test was performed to evaluate the difference between the experimental and control group means on both the pre and post scores of the knowledge, attitude and behavioral intention scales. The composite t's established no significant difference between

pretest scores, supporting the equivalance of experimental and control groups; further the t's showed significant difference between groups on the posttest for the three overall measures of knowledge ($p < .001$), attitude ($p < .01$) and behavioral intention ($p < .001$), thus suggesting positive program impact on these variables. See Table I.

TABLE I

MEAN AND STANDARD DEVIATION OF PRETEST AND POST-TEST ADMINISTRATIONS OF KNOWLEDGE, ATTITUDE AND BEHAVIORAL INTENTIONS MEASURES, BY GROUP, INCLUDING t-VALUES COMPARING GROUP MEANS, ALL SITES COMBINED

	Experimental			Control			
	N	X	S.D.	N	X	S.D.	t
Pretest							
Knowledge	472	12.37	3.87	361	12.21	3.76	0.60
Attitude		47.59	7.08		47.68	7.26	-0.18
Behavioral Intentions		61.52	6.23		61.99	5.84	-1.12
Posttest							
Knowledge	472	15.51	3.45	361	12.98	3.70	10.05[2]
Attitude		49.21	7.87		47.76	7.24	2.75[1]
Behavioral Intentions		64.77	4.39		62.55	6.07	5.87[2]

[1] $p < .01$

[2] $p < .001$

The purpose of the study was to determine the effectiveness of the program Senior Adults, Traffic Safety and Alcohol. The questions asked were—As a result of the program, do experimental subjects, when compared with control subjects,

- achieve a higher score on the knowledge measure?
- exhibit more positive attitudes as measured on the attitude scale?
- indicate more positive behavioral intentions as measured on the behavioral intention scale?

It appears the three questions can be answered affirmatively. In view of the approximate one-hour duration of the program, these results are encouraging.

I would like to make clear that the program is available as a total package. It comprises an 11-minute animated film, accompanying take-home pamphlet, a Leader's Guide, and a manual, Development of a Traffic Safety and Alcohol Program for Senior Adults that discusses all aspects of the program--planning, implementation and evaluation.*

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*Available through the AAA Foundation for Traffic Safety, 8111 Gatehouse Road, Falls Church, VA 22042.

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Prince George's County: A Local Health Department Confronts the Young Drinking Driver

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PRINCE GEORGE'S COUNTY: A LOCAL HEALTH DEPARTMENT CONFRONTS THE YOUNG DRINKING DRIVER

Introduction

There is great national concern about excessive drinking among youth. More and more teenagers appear to be using and abusing alcohol at earlier ages. Few people reach their eighteenth birthday without having tried alcoholic beverages and a significant number (perhaps 1 in 10) are heavy drinkers. In spite of this great concern there is little evidence that excessive drinking is more frequent among youth than in any of the older age groups.

The practice of driving after drinking by young people is not as widespread as is generally believed. Studies show that this behavior is quite rare under the age of 18; however, it increases rapidly for the 18 and 19 year old driver.

Drivers under 20 years of age represent 7% of all licensed drivers, but are involved in 12% of all collisions. Marden and Kolodner indicate that alcohol is related to youthful collision involvement in a way that sharply differentiates the young from the other age categories up to 69 years. Small amounts of alcohol significantly impact upon the rate of collision. Among teenagers low concentrations of alcohol (BAC's of less than .05%) are an important factor in crashes, whereas in the 25 to 69 age groups such alcohol concentration is statistically insignificant. Zylman indicates that there is evidence that drivers under 18 who have the worst collision vulnerability ratio with nothing to drink increase that vulnerability threefold after just 1 or 2 drinks.

It appears that factors related to collision among youth include inexperience in driving, inexperience in drinking, overconfidence in one's ability, and a tendency to more risk-taking behavior.

Any community that has a DWI program can have a DWI program for youth. The Prince George's County Health Department recognized the need for all services to youth, but had no funding for the development of or the delivery of such a service. In spite of a dearth of resources a modest program was started and at the end of the first year over 120 young people had received alcohol education and/or treatment where indicated.

Prior to the formation of the Youth Alcohol Program it was evident, in the courts and in the community, that alcohol was causing problems for a large number of youth. Young people's drinking problems were neglected by the systems due to a lack of awareness of signs of alcohol abuse and a lack of consistent referral procedures.

It was apparent that a comprehensive program was required which would integrate court activities with youthful alcohol abusers.

The DWI program had been in operation in the county for seven years. It was well integrated into the court system and provided a working model for a youth program.

The steps followed to create the program were: establishing the need, developing a philosophy, formulating a program, finding the funding, and selling the program.

Establishing the need

Local statistics were gathered to measure incidence of all related crashes (accidents, motor vehicle and related incidents) among youth under 18 years of age. Those statistics revealed that incidence rates did not differ materially from national figures for a similar demography.

The next step in establishing need was to secure community support. The target groups were the political infrastructure, the criminal justice system, and local community organizations. Legislators, both in and out of office, were addressed because of the hope for funding and general support. The criminal justice system including both district courts (local) and juvenile services were contacted as the primary referral agents. Community groups including service clubs, church groups, professional groups and others were contacted for their general support.

Developing a Philosophy

Prince George's County Youth Alcoholism Program is based on four assumptions. First, young people need realistic information about the drug alcohol. They believe many myths and too often use trial and error methods to learn about the effects of alcohol. Scare tactics, whether by film presentations or lecture, are inappropriate. The alcoholism education curriculum recognizes the integrity of young people and is based on fact.

The second assumption is that this is a drinking society. Experimentation with alcohol is a fact and a part of growing up. While abstinance is a mode of behavior chosen by many young people, it is not the majority position. For these young people who do choose to drink, the alcoholism education program must be based on responsible drinking. Drinking and driving clearly falls outside this model.

Youth function in a larger social environment is the third assumption of the Youth Alcoholism Program. It is important to work with those social forces such as schools, churches, courts, parent groups and others in order to develop a supportive community in which youth can live responsibly.

The final assumption is that peer involvement in the educational process provides the most effective milieu in which young people learn, exchange ideas and experiences, explore alternative behaviors, and develop responsible

attitudes. Classes of no more than ten participants provide an optimum situation for group interaction.

Formulating a Program

Questions of "where", "when" and "what" arose in the formulation of this program. "Where" was of concern because Prince George's County is large and public transportation is limited. It was determined that two locations were necessary in order to serve the northern and southern ends of the county. Space was arranged at a high school in Oxon Hill (Southern Prince George's County) and at the Alcoholism Center in College Park (Northern Prince George's County).

Most young people participating in the program are students or are working. Therefore, classes were held at night, once a week for approximately two hours.

The classes consisted of seven teaching sessions. This allowed enough time for the group to develop cohesiveness, assimilate some facts and explore behavior. The seven week curriculum is as follows:

Session I	General introduction, getting acquainted, feelings about arrest
Session II	Examination of attitudes, why people do or do not drink
Session III	Facts about alcohol. Effects on body
Session IV	Exploration of problem and dependent drinking
Session V	Identification of signs and symptoms of problem drinking. Assessment of personal drinking behavior. Influence of peers, family.
	Decision making
Session VI	Drinking and Driving
Session VII	Personal plans.
	Evaluation of course
	Final examination

All participants have an individual evaluation prior to the start of the seven weeks of school. This enables the counselor to determine the extent of the alcohol problem, to explore any other situational disturbances, and to make any immediate referrals if necessary. At the end of the seven weeks of school the client is re-evaluated. If further treatment is required, he is referred to the appropriate program.

A unique feature of this program is the involvement of the family. A meeting is held for family members prior to the start of the seven weeks of education. At this time the families are familiarized with the program and receive some general alcohol information. This meeting allows the family to express any concerns and have questions answered. Most importantly it identifies the program as a place to receive help and not as an arm of the court.

Finding funding

The ability to charge and collect fees from the clients provided the financial basis for the establishment of the program. It was evident at the outset that even though the need had been established, funding was not going to be available from traditional resources. It had long been the policy of the DWI program and the Outpatient Alcoholism Program to hold clients responsible for their behavior and involve them in their own rehabilitation by the charging of fees. This had the full sanction of both the Health Department and the Criminal Justice System.

A modest fee is charged each client. (No client is refused service because of inability to pay.) These fees are then used to employ teacher/consultants who conduct the group session as well as to purchase films and other materials. Administrative costs including meeting with community leaders and other tasks connected with launching the program, writing the curriculum, and general paper work were absorbed in the existing DWI program. The net effect was to have a program which was self-supporting.

After two years of operation at this level, approximately 250 young people have received alcoholism education and 85 of these participants have been referred for further treatment.

Selling the Program

The number of diversionary programs, treatment programs, educational programs and other alternatives to fines and incarceration are legion. Although the various components of the criminal justice system had been involved in the creation of the program, this was only at an administrative level. The program still had to be publicized and sold to those who would use and support it.

A packet of materials which described both the problem of youth, alcohol, and driving and the program to answer it was made available to judges, states attorney's, juvenile service workers, lawyers and treatment personnel. The public media was involved through newspaper articles, T.V. appearances of staff, and radio talk shows. Seminars involving educators, youth advocates, church leaders and others were held in public facilities to gain further credence for both the problem and one answer to it.

Training was offered to judges and juvenile service workers to heighten awareness of teenage drinking and to familiarize them with the youth-alcohol program.

Outreach

Comprehensive programming for youth must include a community outreach component. Funding was obtained for the purpose from the Maryland Department of Transportation. This outreach component has three major functions:

1. To provide alcoholism education to the community (church, PTA, and other civic organizations.

2. To provide alcoholism training to professionals who deal with youth on a daily basis (teachers, drivers education instructors, juvenile service workers and guidance counselors).

3. To gain referrals to the program by case finding activities in the community. In this regard the University of Maryland has expressed concern about alcohol abuse among its students. An alcohol education program has been provided to students through the University Health Center. Future activities are planned with student housing organizations.

Outreach into the community has served to highlight the problem, provide a forum for concerned citizens, increase alcoholism awareness among professionals and provide direct intervention for young people.

Evaluation

Evaluation will be an important component of the Youth and Alcohol Program. No formal evaluation mechanism is extant because of the limited time the program has been in existence; the number of clients served thus far would not provide the basis of a meaningful universe for a scientific study. Feedback of an informal nature from juvenile service workers indicate that the number of youth who have had additional encounters with the criminal justice system is minimal. Similar information has been relayed concerning the population referred for counseling following education.

A recent grant from the Maryland Department of Transportation will allow a more formal evaluation procedure. Plans now call for a tracking system to follow all referrals to the program since its inception. Some of the areas which will be followed in this study are: recidivism, information retention, attitudinal change, drinking patterns, and general life adjustment.

Conclusion

Youth are a neglected population in DWI programs throughout the nation. Clients referred to DWI programs typically are referred by adult courts, thus precluding those under eighteen years of age.

The Prince George's County (MD) Health Department recognized the need for alcoholism services to youth. By applying knowledge gained from the administration of an adult DWI program, utilizing existing resources, and charging fees, it was possible to provide a program especially designed to meet the needs of this service population.

Prince George's County has confronted the problem of the youthful drinking driver, your community can too!

Establishing The need

Developing a philosophy

Formulating a program

Finding funding

Selling the program

Project ADAPTS (Alcohol - Drivers and People - Teaching Safety

Peter Shanelaris
Timothy Mahurin, Newfound
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PROJECT ADAPTS (ALCOHOL-DRIVERS AND PEOPLE-TEACHING SAFETY)

Shanelaris, Peter J.

Mahurin, Timothy R.

Prevention of alcohol abuse through education is probably nearly as old as the discovery of alcohol. Certainly, its approach, in the beginning, was limited; the intent, undoubtedly was in a distant sense like ours today. It is assumed that it was not on the same scale or frequency nor as varied in approach, but nevertheless, preventive in nature.

The effects of alcohol upon man at that point in time were the same as they are today. The results upon the individual may have been more basal and more overt in reactions than we are accustomed to seeing today. The reactions to alcohol by cavemen must have been beyond their normal range of acceptability by their standards and, consequently, some form of prevention (education) must have evolved once the cause or source of the strange behavior became known.

Still regressing a bit, perhaps, but imagine how the drinking of alcohol may have come about. Picture the period of time, "jungle style", warm, humid, luxurious growth of vegetation and man still being in the food gathering stage. He may have come upon a grove of grape vines laden with ripe grapes and the ground beneath equally covered. Some may have fallen into a depression or pot-hole with collected rain water, yeast spores, and a very appropriate temperature, and the natural fermentation process began producing the beverage, alcohol.

Man may have gathered the grapes, still on the vines, and when the supply was exhausted, scooped up the fermented mixture, tasted it, and the first human consumption of an alcoholic beverage took place.

In addition, and to be expected, man experienced the first transportation fatality soon afterwards. Imagine, after the cave man had eaten and drunk the grape concoction to his stomach's content, he would have started his trip back to his home on foot. In all likelihood, his home was situated in an opening on a sheer wall of stone, high above the ground, safe from predators and other enemies. The path to the cave was probably narrow and difficult to ascend, and a slow, cautious climb would be necessary for a safe arrival at the cave home.

Our drinking cave man began his climb home unaware of the effects of alcohol, whereby the slightest impairment of memory, vision coordination, or the slightest indifference to caution could cause man's first transportation fatality to be sure.

The first transportation fatality took place, though not historically recorded for our examination, but certainly is speculatively recorded in our thought today.

The subjective account of what probably happened in the past, simply serves to emphasize the point that alcohol abuse was present then as it has been in every age span, right up to our present period of time. In addition to the abuse, methods to curb abuse were attempted throughout the ages and have run the full range of approaches. Then, as it is now, groups or civilizations concluded at some point, that alcohol abuse had to be effectively dealt with.

Today we are experiencing a renewed concern about the abuse of alcohol and to compound matters, other drugs of abuse have also emerged as major problems, not only in the area of personal-social interactions, but in particular, the major area of transportation.

The increased concern is bringing forth the typical intellectual battles over how to best deal with alcohol and other drug abuse as they relate to the areas of major concern. Alcohol and other drug abuse in relation to the youthful drinkers of our nation is by far the major concern of the moment. Drinking and driving fatalities and other human maimings are reaching all time highs throughout the country. No one can really agree on what to do or how best to deal with the current trends.

The fact that alcohol and or other drug abuse are taking too high a toll has and is prompting the development of programs that hopefully will work. The approaches do vary and will vary; the intent of the various approaches are all the same - reduce the harm that is being done.

Project ADAPTS is one of many trying to do what all prevention programs are trying to accomplish. Like most of the other programs developed, ADAPTS regards its program to be on the right track and that it is, unique in design, approach and concepts and that it works.

ADAPTS has been well over ten years in development to the point at which it is being presented for public awareness. Some concerns that have been considered in the development of ADAPTS include: Why doesn't alcohol prevention work? Should high school students be taught how to drink responsibly? Should grade school students become acquainted with alcohol in social settings? Should facts and figures be presented to students then let them decide what they will do? Do youngsters really have a choice to drink or not to drink with all the pressures of today? These have all been considered in the development of ADAPTS.

We wish to share ADAPTS with you in hopes that it will be useful to you in some beneficial ways.

ADAPTS, is a nine weeks mini-course designed for sophomores as a pre or concurrent class to the regular Driver Education Classes at Newfound Memorial High School in Bristol, New Hampshire. It is designed to understand and prevent the abuse of alcohol and other drugs in regard to the driving task and the personal-social interactions of students by promoting the development of responsible behavior. Project ADAPTS became a reality two years ago when funding came forth from The New Hampshire Highway Safety Agency.

It is activity oriented, and prevention based. It promotes understanding of self, responsible decision making, positive alternatives to alcohol and other drugs, the reduction of excusing inappropriate behavior and much more.

Basic reference points have been established as a frame of reference throughout the course. Some of the points of reference are: Preventive education works. Alcohol and other drugs are not necessary for a happy, successful, and productive life. Drinking and Driving do not mix. Impairment begins with the very first drink.

ADAPTS goals are: Understanding motivating forces. Know reasons why people drink and don't drink. Applying the knowledge gained to responsible decision making.

Encouraging students not to drink and drive. Helping students understand why people act the way they do... as measured by pre- and post- testing and measuring absenteeism, disciplinary action, grade improvement, and attitude.

Project ADAPTS is in its second year of operation at Newfound Memorial High School in Bristol, New Hampshire and is still in its infancy stage. Further development and refinement is an on-going process.

First year evaluations on partial statistical information shows positive gains in all seven areas evaluated.

Project ADAPTS is unlike most programs dealing with the prevention of alcohol and other drug abuse. It is profoundly unique in its organization and basic approach. ADAPTS ultimately seeks to cause, promote, and encourage responsible behavior in each student.

ADAPTS attempts this by first recognizing and clearly distinguishing the differences between information and education. So many agencies have educational units which simply dispense facts and figures which, by ADAPTS definitions, do not constitute education. ADAPTS regards education as a process whereby behavioral changes take place. Information is most assuredly a key factor in the educational process.

In addition to the "education vs information" view, ADAPTS recognizes the varying degrees of functional competencies in regard to the responsible decision making process among any group of students; therefore, what might be effective for some students will not necessarily be effective for other students since functional competencies are at varying degrees or levels. ADAPTS contends that any given group of students is capable of developing an adequate (minimal) level of functional competency regarding the decision making process, thus leading to responsible behavior.

Though the major thrust in ADAPTS is directed to the reduction of motor vehicle fatalities, injuries, and other violations, it can be readily seen that the development of responsible behavior regarding the motor vehicle involves the same process in terms of responsible classroom behavior and personal-social interactions.

ADAPTS does not attempt to isolate the student's behavior as entities in themselves such as one kind of behavior regarding driving, another for classroom behavior, and still another for social behavior, and so on. This could go on and on and does when one views so many divergent views and approaches throughout the country.

Simply stated, ADAPTS believes that the development of responsible behavior regarding the driving task will also result in responsible behavior in the classroom, in the personal-social interactions of each student, and in any other interaction.

Several highly successful activities are: "Dear Al K. Hall" - originally a simulated newspaper column where students in other classes and grades would write questions, and ADAPTS students and instructors would, together, write answers back to the students. It has since expanded to include a published weekly column on the Teen Page of New Hampshire's largest daily newspaper, "The Manchester Union Leader".

"Let's take a closer look at Drinking, Driving and Drugs" is a weekly newspaper column submitted by adopting schools in their local newspapers.

The DWI Patsy - a realistic situation where six high school students, after drinking up to or above the .05 BAC level, must go home. One is selected to drive (honor student). While driving a road block is encountered, and all cars are being checked. In the matter of 15 minutes one student will be charged with DWI. Students must all agree as to who will be charged with DWI.

The Period of No Learning is a questionnaire activity that students give to other students and adults to gain a better understanding of the development of appropriate and inappropriate methods of satisfaction.

The Drunk vs Impairment activity consists of a poster, slogan, or written words contest to alert students and adults that all drunk people are impaired but all impaired people are not drunk.

Teacher training workshops consisting of 45 hours each have been conducted for four high schools in New Hampshire.

Chemical Dependency Program For Youth and Young Adults

George Bright
Cumberland Farm for Adolescents

CUMBERLAND FARM FOR ADOLESCENTS

Chemical Dependency Program
For Youth and Young Adults

Program Philosophy

A drinking or drug problem causes problems, whether they be of a physical, emotional, spiritual, legal, or functional nature. Frequently in the young person, other life circumstances or responses to the circumstances precipitates, or augments, dependency on chemicals, which includes alcohol and marijuana. It is therefore important to consider in treatment other factors common to adolescents and young adults: vocational choice, educational alternatives, family relationships, peer relationships, values development and clarification, identity, self-esteem, communication skills, emotional maturation, development of coping skills, issues of sexuality, etc. Unfortunately, the person with an alcohol or drug problem is not usually able to recognize his developing dependency. Therefore, it is frequently necessary that someone else take responsibility to provide the troubled young person with the opportunity for education and counseling. This is the responsibility of the aware physician, employer, judge, lawyer, teacher, guidance counselor, minister, family member, or concerned friend.

Our purpose is intervention in the developing drug or alcohol problems. We provide an opportunity for drug and alcohol education, increased self-awareness, and positive change within a therapeutic environment. We attempt to afford the client a climate characterized by successful experiences and positive regard, and hope to acquaint the individual with his own resources and potential to discover new ways of coping with internal or environmental life stress. We focus on the development of a creative approach to living and incorporate the whole-person approach as the basis for emphasis on self-actualization. Beyond abstinence, the ultimate goal of the chemically dependent person is a self-actualizing life process. We urge, and sometimes require, the participation and involvement of the family in the treatment process.

Program Format/Services Provided

Using a multi-disciplinary team approach, we provide the following educational and counseling opportunities:

- Evaluation: A psycho/social and drug history is obtained, and the level and complexity of the problem(s) are delineated. Also, the strengths and assets of the individual are identified. An

approximate treatment plan is developed, with the option of referral to inpatient treatment, and/or supportive community services.

- Phase I/Group Workshop: This is a requirement for all people who participate in the program. Phase I consists of two days (8 hours each) of alcohol and drug education and an introduction to interpersonal and intrapersonal skill development.

- Phase II/Structured Group Interaction: Six weekly sessions (1-½ hours each) devoted to further training in interpersonal and intrapersonal skills. Emphasis is placed on assuming responsibility for one's behavior and choices.

- Phase III/Group Counseling: Eight weekly sessions (1-½ hours each), generally following six weeks of structured group interaction. Group counseling serves to promote an atmosphere in which group members support each other in their common task of exploring their alcohol abuse, its consequences, and their feelings concerning these problems. The group structure and process also facilitates improved communication skills, value clarification, trust building, emphasis and development of individual strengths, and removal of barriers that impede self-actualization.

- Phase IV/Aftercare/Continued Group Therapy: This group is available to those who feel additional therapy and support is needed, whether they have received treatment on an outpatient or inpatient basis.

- Individual Counseling: Individual counseling is recommended to all clients who participate in the program beyond Phase I, usually on a weekly or bi-weekly basis. The purpose is the formation of a positive relationship and providing a climate of acceptance in which the client feels he can be honest in acknowledging and confronting the effects of his alcohol abuse. The interaction enables the client to fully accept the extent of his alcohol abuse and its consequences. The counseling relationship also provides an atmosphere in which the client may explore any other area that relates to actualizing the growth potential of the individual.

- Family Counseling: Family counseling is recommended when indicated. Family counseling provides an opportunity for the family as a unit to become aware of dysfunctional interaction and relationships, and an opportunity to develop better communication and to begin to learn ways to re-establish balance within the family system.

- Concerned Parents Group: This important aspect of the program provides parents and significant others with information about alcohol, drugs and chemical dependency. Emphasis is placed on the feelings of the parents, and ways in which their lives and emotions have been affected by the chemically dependent child. This group is designed with emphasis on sharing and participation, and discovering alternative ways of coping with the problem.

- Children of Alcoholics/Peer Group Counseling: A child of an alcoholic parent has been profoundly affected. This group is designed to help the "forgotten child" to understand his situation, identify his feelings and reactions, and to discover alternative perceptions and methods of coping with his particular circumstances. Art therapy is used in part as a therapeutic modality.

- Referral to Supportive Services: Recognizing the complexity of the problems associated with chemical dependency and youth, we augment our program with referral to Young People's AA, Alateen, Alanon, Families Anonymous, vocational rehabilitation, educational, medical, psychological services, etc. We also incorporate an outdoor program and an Arts for Youth program, as complements to the treatment process.

- Follow-Up: All clients are evaluated three months upon completion of the program, to ascertain their progress and to offer further support.

Length of Treatment

Treatment length varies with the individual, the seriousness and type of problem(s). Recommended length of treatment would be determined during the evaluation.

Eligibility and Referral to the Program

Any young person under the age of 25, who is experiencing negative consequences in his life as a result of drug or alcohol use is eligible. Persons interested in referral should call our office at (804)643-0509 and inquire regarding participation.

Location

The Cumberland Farm Chemical Dependency Program is located in downtown Richmond and provides services to residents of the city proper and the surrounding metropolitan area.

Fee Policy

We offer a sliding fee scale, based on family income. We are a non-profit organization and are not subsidized by funding sources other than fees. Therefore, our lowest code is based on minimum operating costs.

The Staff

The professional staff is composed of a physician, a Counseling Psychologist, a Clinical Social Worker with specialization in family therapy, and a Rehabilitation Counselor. All staff members have a minimum of two years experience in working with chemically dependent adolescents and young adults, and are trained in psychotherapy as well as chemical dependency counseling. The core staff is augmented by additional group leaders, an art therapist, and speakers, including a Registered Nurse and a recovering alcoholic.

CORRECTED COPY May 24,1979

DRUNK DRIVING AMONG YOUTH AND YOUNG ADULTS

A Description of A Pilot Study for Reducing Drinking and Driving Among Young People in Richmond, Virginia

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MAY 2, 1978

Presented at

NATIONAL COUNCIL ON ALCOHOLISM
Washington, D.C.

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I. INTRODUCTION

This paper discusses a pilot effort to reduce drinking and driving among youth and young adults through an Alcohol Safety Action Project in Richmond, Virginia. The first section reviews the problem of alcohol and driving with special reference to youth. The second section reviews the ASAP approach and suggests how it can be adapted to serve the special circumstances of young drivers. The third section describes the Richmond ASAP and a special pilot effort developed to deal with drunk driving among youth and young adults. The last section discusses how the program could be effective in preventing drinking and driving among youth.

II. DRINKING AND DRIVING

The Extent of Drinking and Driving

Drinking and driving is serious business. It is estimated that alcohol is a contributing factor in from 40 to 55 percent of all the fatal automobile crashes that occur each year (Zylman, 1974; Alcohol and Health, 1974). A large proportion of all the automobile accidents and injuries involve drivers or pedestrians who have been drinking. "Drivers with high BACs are grossly overrepresented in fatal and serious-injury crashes in comparison with...uninvolved drivers" (Health and Alcohol, 1974).

The losses in terms of property damage, medical care and related costs, not to mention personal suffering to both the drinking driver and the innocent victims, are staggering. Alcohol-related accidents represent the third largest economic

The author would like to thank Dr. Martin Bloom, Mr. Donald Mashke, and Mr. Barent Landstreet for their helpful comments and suggestions.

cost associated with alcohol misuse in the United States. The annual costs in 1974 were estimated at $6.5 billion — $3.5 for fatal accidents, $2.3 billion for injury accidents, and $.5 billion for property damage (Alcohol and Health, 1974).

Incidence Among Particular Groups

Like most social problems, drinking and driving tends to be concentrated among selected subgroups. These groups can be identifed according to a series of demographic, driving, drinking-and-driving, and drinking patterns (Alcohol and Health, 1974). Sex, age, marital status, and occupation/social class are clearly associated with driving while intoxicated. People who drink and drive are overwhelmingly male primarily because men are more likely to be licensed drivers than women, drink more, drive more at night, and are more likely to mix drinking and driving. Youth under 25 are more likely to be involved in drinking and driving than are older drivers. Alcohol consumption increases the probability of crash involvement more among teenagers than it does among any other age group. This occurs because teenagers are just learning to drive, are just learning how to operate an automobile after drinking, and do a great deal of night driving (Carlson, 1973; Zylman, 1974).

Drinking Among Youth

Ours is a drinking culture. Approximately 75 percent of all adults drink at least on occasion; among 10 percent drining is a serious problem (Cahalan, 1970, Pittman, 1967). Drinking is not an act that occurs instantaneously upon reaching age 21 or any arbitrarily defined drinking age for that matter; rather it appears to be a developmental phenomenon (Jessor and Jessor, 1975) with many socio-cultural variables influencing its occurrence and timing (Maddox, 1970; Pittman, 1967). Drinking by teenagers is part of a process of "anticipatory

socialization" in which drinking is one of many indicators of transition to adult behavior (Noble, 1977). The basic fact is that increasing proportions of teenagers experiment with drinking regardless of the legal age for drinking. Ours is a society filled with pressures to be an adult or young adult with expectations that include such symbols as drinking, owning expensive automobiles, and partaking of the good life.

Nearly three-quarters of the students in grades 7-12 participating in a recent national survey indicated that they had taken a drink more than two or three times (Mahoney, 1977). Over one-half (54.8 percent) drank more than once a month and one-half of these (23.3 percent) drank at least once a week (Mahoney, 1977). The age at which young people have the first drink has declined from 13.6 in 1965 to 12.9 in 1975 so that an estimated 62 percent of all the 7th graders surveyed indicated that they now drink (Noble, 1977). While more and more young people are drinking, their drinking patterns are still quite different from those of adults. Youth drink less frequently but often consume a large amount of alcohol in a single drinking session. This may account for the fact that nearly one-half report having been drunk at least once and 12 percent indicated they got drunk an average of once a month. A total of 2.5 percent felt they had a serious problem with their drinking, while nearly a tenth (9.7 percent) felt they had a mild problem with their drinking.

Alcohol consumption among young people produces a number of negative consequences such as impaired driving performance, aggression and violence, disturbed interpersonal relationships, property destruction, poor school and job performance, and accidents. Youth indicate that drinking leads to problems with friends, dates, police, and school officials (Mahoney, 1977).

Driving and Youth

Young people also learn to drive in their middle teens. The fact that they must learn how to handle a motor vehicle and handle liquor at precisely the same time in their lives has serious implications. Because youth are inexperienced drinkers and new drivers, their driving abilities can be adversely affected by even small amounts of alcohol, and it is not unusual for a youth with a low blood alcohol concentration (BAC) to behave like a highly intoxicated adult behind the wheel of a motor vehicle. Drinking and driving among youth is not a rare event. Some 40 percent of 7-12 grade students surveyed in 1975 reported drinking in cars (Mahoney, 1977). One-fourth of a representative sample of high school students said they had driven once or twice when they knew they were too drunk to drive. Nearly one-third said they rode in cars driven by a heavily drinking driver at least once a month. The youth indicated their driving skills were relatively unimpaired by alcohol and that drunk driving would not have serious consequences for teenagers (Grey, 1975).

Accidents and Youth

Youth and young adults account for a disproportionate share of both fatal and nonfatal accidents in the United States. In 1977 the 13.9 million drivers under age 20 accounted for 18.1 percent of all drivers in accidents, although they represented only 10.1 percent of the 137.9 million licensed drivers. This is illustrated in Table 1. Drivers in the age group 20-24 were also disproportionately represented.

Young people in Virginia were also killed and injured in accidents substantially out of proportion to their numbers. Of the 57,389 persons injured in 1977, 16.3 percent were 15-19 years old, while 20.5 percent were 20-24 years old. These two age groups also accounted for 35.8 percent of all the 1,145 persons killed in

TABLE 1

Accidents by Age of Drivers

Compilations based on reports from state traffic authorities show that drivers under age 30 are involved in a disproportionately high number of traffic accidents. In 1977, drivers in that age group comprised 33.7% of the motoring population of the United States, but were involved as drivers in 51.9% of all accidents; 51.2% of fatal accidents.

Age Group	All Drivers		Drivers in Accidents					
			Fatal		All		Per No. of Drivers	
			Number	%	Number	%	Fatal*	All**
Total	**137,900,000**	**100.0%**	**63,700**	**100.0%**	**29,900,000**	**100.0%**	**46**	**22**
Under 20	13,900,000	10.1	10,900	17.1	5,400,000	18.1	78	39
20-24	16,300,000	11.8	13,400	21.1	6,000,000	20.1	82	37
25-29	16,300,000	11.8	8,300	13.0	4,100,000	13.7	51	25
30-34	15,500,000	11.2	7,200	11.3	3,200,000	10.7	46	21
35-39	12,500,000	9.0	4,150	6.5	2,100,000	7.0	33	17
40-44	11,300,000	8.2	4,150	6.5	1,800,000	6.0	37	16
45-49	11,700,000	8.5	3,700	5.8	1,700,000	5.7	32	15
50-54	11,400,000	8.3	2,800	4.4	1,400,000	4.7	25	12
55-59	9,400,000	6.8	2,500	3.9	1,300,000	4.4	27	14
60-64	7,000,000	5.1	2,200	3.5	1,000,000	3.3	31	14
65-69	6,000,000	4.4	1,600	2.5	1,000,000	3.3	27	17
70-74	4,000,000	2.9	1,200	1.9	300,000	1.0	30	8
75 and over	2,600,000	1.9	1,600	2.5	600,000	2.0	62	23

Source: Drivers in accidents based on reports from 24 state traffic authorities. Number of drivers by age are National Safety Council estimates based on reports from state traffic authorities and research groups.

*Drivers in Fatal Accidents per 100,000 drivers in each age group.

**Drivers in All Accidents per 100 drivers in each age group.

AIDE, San Antonio: United Services Automobile Association, March 1978.

crashes during the same year (Virginia Traffic Crash Facts, 1978). Male youth in these age groups, particularly, were overrepresented in fatalities as shown in Table 2.

The intersection of teenage driving, drinking, and automobile accidents is complex. It is not simply that teenagers drink a great deal and therefore have accidents while driving while intoxicated. Most accidents appear to involve adolescents who have not been drinking, and when alcohol is present, it is usually in low blood alcohol levels (Smart, 1976). The literature suggests two peaks of automobile accidents. The first involves the period of driving development when the young driver is becoming confident — perhaps overconfident is more accurate — with his or her driving abilities (Pelz, 1974). The second period comes a few years later when driving and legal drinking first come together, suggesting that young persons have some difficulty in handling alcohol and driving (Smart, 1976). Indeed, the evidence suggests that even smallamounts of alcohol in the inexperienced drinker produce untoward driving effects that may disappear with more experience in handling oneself after drinking moderate amounts.

Another element of this complex relationship concerns the cultural fact that adolescents often drive at night as part of a recreational pattern amoung young people in this society. Night driving creates additional hazards for the inexperienced driver. Accident rates for this period of the day are disporportionately high for young drivers (United Services Automobilie Association, 1979)

III. THE ALCOHOL SAFETY ACTION PROJECT

The ASAP Approach

Until the early 1970's "the means for attacking the alcohol-affected traffic accident, whether immediate or long range in purpose, seemed comparatively apathetic,

TABLE 2

ALL VIRGINIA CRASHES 1977

Age	ALL PERSONS KILLED				PEDESTRIANS KILLED				BICYCLISTS KILLED			
	Total	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total	Male	Female	Not Stated
12. 0- 4 years	29	15	14		9	5	4					
0. 5- 9 years	42	28	14		22	14	8		2	2		
1. 10-14 years	52	40	12		7	5	2		9	8	1	
2. 15-19 years	197	139	58		11	8	3		5	5		
3. 20-24 years	214	164	50		25	17	8					
4. 25-34 years	186	148	38		28	23	5		1	1		
5. 35-44 years	116	87	29		18	12	6		1	1		
6. 45-54 years	98	72	26		21	15	6		1	1		
7. 55-64 years	106	76	30		16	14	2		2	2		
8. 65-74 years	63	38	25		19	13	6					
9. 75 years and over	38	25	13		11	8	3					
11. Not stated	4	4			1	1						
Total persons	1145	836	309		188	135	53		21	20	1	

1. Location in Vehicle of Killed or Injured	Fatal Crashes
1. Left front	547
2. Center front	13
3. Right front	209
4. Left rear	18
5. Center rear	14
6. Right rear	25
7. All others	277
11. Not stated	42
Total persons	1145

385

Age	ALL PERSONS INJURED				PEDESTRIANS INJURED				BICYCLISTS INJURED			
	Total	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total	Male	Female	Not Stated
12. 0- 4 years	1477	811	665	1	150	95	55		10	9	1	
0. 5- 9 years	2801	1593	1182	26	395	253	141	1	181	140	40	1
1. 10-14 years	3749	2103	1642	4	298	177	121		424	327	97	
2. 15-19 years	9365	5398	3963	4	272	174	97	1	253	208	45	
3. 20-24 years	11791	7302	4480	9	219	143	76		95	75	20	
4. 25-34 years	11700	6664	5018	18	257	175	82		64	49	15	
5. 35-44 years	5618	2918	2692	8	151	97	53	1	23	22	1	
6. 45-54 years	4332	2117	2210	5	129	91	38		20	19	1	
7. 55-64 years	2934	1476	1455	3	137	96	41		15	14	1	
8. 65-74 years	1659	777	880	2	103	53	50		12	11	1	
9. 75 years and over	591	284	307		40	25	15		6	6		
11. Not stated	1372	534	597	241	62	31	21	10	24	18	2	4
Total persons	57389	31977	25091	321	2213	1410	790	13	1127	898	224	5

1. Location in Vehicle of Killed or Injured	Injury Crashes
1. Left front	30950
2. Center front	1158
3. Right front	9829
4. Left rear	1064
5. Center rear	640
6. Right rear	1438
7. All others	6234
11. Not stated	6076
Total persons	57389

Virginia Traffic Crash Facts 1977, Richmond, VA.: Department of State Police, May 1978.

spasmodically emotional, chaotic, and at times even contributory to the very phenomena being attacked" (Bacon, 1968). One of the most promising approaches to the problem of driving while intoxicated has been developed over the last ten years by the United States Department of Transportation (DOT). This approach, called the Alcohol Safety Action Project (ASAP) involved a coordinated system of efforts directed at both control and prevention of drunk driving. The ASAP approach recognized that complicated social problems must be addressed in a comprehensive manner. It contained five primary components: enforcement, judicial, rehabilitation and treatment, evaluation, and public information and education. The basic purposes of ASAP were to "identify problem drinking drivers, to develop procedures to ensure that they do not drink and drive, to reduce drinking problems, and to implement an action program to carry out these procedures" (Landstreet, 1977).

In order to test the ASAP concept, the United States Department of Transportation funded 35 pilot programs throughout the United States in a variety of locations (U.S. Department of Transportation, 1972). The programs represented a coordinated attack on the drinking-and-driving problem that included expanded enforcement, greater judicial discretion in handling those arrested, extensive treatment and education programs for those arrested, increased public information activities, and evaluation.

ASAP Procedures

Drivers apprehended for DWI by police officers are sent to the court for disposition. The court may dispose of the case in the traditional manner that involves some combination of fines, license suspension or revocation, and incarceration, or it may refer the defendant to the ASAP project. In essence, ASAP represents an alternative mechanism for handling the drunk driver. Court

referrals to the ASAP program depend in part on the persons' past driving record, history of previous drinking and driving offenses, their BAC at the time of arrest, and their willingness to participate in the ASAP program.

ASAP programs are generally responsible for classifying the defendants on the basis of their drinking problems. A typical taxonomy is social drinker, pre-problem drinker, and problem or chronic drinker (Landstreet, 1977). This drinker classification, plus other indications of alcohol problems, are used to assign clients to one or more rehabilitation programs that may be operated by the ASAP project or by other cooperating agencies. Rehabilitation programs range from standard defensive driving courses and alcohol education activities to various alcohol treatment programs that employ individual, group, or family approaches that may require abstinence (Driessen and Bryk, 1974). Clients are often exposed to a combination of education and treatment modalities and generally participate under some type of court order, either a continuance or probation. Exposure can last from a few months to a year or longer. The ASAP agency usually serves as an agent of the court and is administratively responsible for following clients and reporting client progress to the court. ASAP agencies are often self-supporting with costs covered by some combination of fees or fines (Hawkins, 1976). The project provides important coordinating functions for the various program components such as enforcement, judicial, public information and education, and evaluation.

Evaluations of the 35 programs have shown that reductions in crash levels did occur at some sites during particular time periods. There was some evidence that the ASAP control system was more effective in deterring the social drinker who drives while intoxicated rather than in rehabilitating problem drinkers so they would not drink and drive (Levy, 1978; Ellingstad and Springer, 1976; Ellingstad and Structman-Johnson, 1978).

Programs for Youthful Drinkers and Drivers

Efforts to reduce drinking and driving among young people have developed more slowly than those directed toward adults. Few of the 35 pilot programs had a special emphasis on youth. This occurred partly because of a lack of awareness of the magnitude of the problem, partly because adults make up the bulk of those who drink and drive, and partly because of the newness of the ASAP approach. With the growth and maturing of ASAP programs around the nation, there has been an increased interest in responding to the needs of special groups of which youth is one. For example, a pilot program for youth was initiated in 1978 in Philadelphia under local funding (Piccone, 1977).

A number of rationale can be advanced for initiating special efforts to deal with alcohol and driving among young people. The literature cited earlier indicates that the drinking patterns, driving habits, and drinking and driving behavior of youth are both quantitatively and qualitatively different from those of adults. Since youth drive at different times and places than adults, irresponsible driving behavior often goes unnoticed by enforcement officials. Because of their lack of drinking experience and concomitant use of other drugs, youth may appear intoxicated and yet have low BACs. This, plus the fact that laws governing youth differ from those covering adults and operate through a separate judicial system, put additional burdens on the arresting officer. Youth who ingest large amounts of alcohol may not be chemically dependent but may simply be experimenting with drugs.

Because the lifestyle, life experiences, and value systems of youth differ markedly from those of adults, it is unwise to mix youthful and adult defendants in alcohol-related education and treatment modalities. It may also be unrealistic to assume that young drivers should conform to adult standards of driving. Because

young people are members of a deviant population, deviant driving can be viewed as a normal expectation of the young driver and cannot be modified unless broad changes are made in their social environment (Klein, 1972). It seems clear that to be effective ASAP sponsored youth programs must look beyond the individual offender and address the peer culture, the school, and the families of youth.

IV. THE RICHMOND ASAP PROGRAM

The Virginia ASAP

The Virginia Alcohol Safety Action Program (VASAP) was established by House Bill 1662, effective March 24, 1975, and was modeled after demonstration projects established by the United States Department of Transportation. This legislation permitted judges in the Commonwealth to refer persons arrested for driving while intoxicated (DWI) to treatment and educational programs and gave the Highway Safety Division of Virginia, now the Department of Transportation Safety, authority to assist local communities in establishing VASAP programs. Local governments were given the responsibility for sponsoring, developing, and operating the VASAPs. Funds to operate the local ASAPs are obtained primarily from a $200 fee assessed against persons arrested for driving while intoxicated and who enter the VASAP program.

The ASAP approach involved a coordinated system of efforts directed at both enforcement and prevention of drunk driving through the five components; enforcement, judicial, rehabilitation and treatment, public information and education, and evaluation. In 1978, VASAP, through its statewide program, covered 80 percent of the state's population through more than 20 local programs. The number of persons arrested for DWI in Virginia exceeded 30,000 (Virginia Department of Transportation Safety, 1979).

The Richmond ASAP

The basic purposes of the Richmond ASAP are to identify problem drinking drivers, develop procedures to ensure they do not drink and drive, reduce drinking problems, and implement an action program to carry out these procedures. The Richmond ASAP enrolls persons who have been arrested for DWI and are referred by the court upon a plea of guilty in a pre-trial hearing or upon a conviction of driving while intoxicated. After evaluating the defendant's pattern of drinking and the extent of alcohol use, the Richmond ASAP refers each defendant to an appropriate program of treatment and offers the necessary combination of alcohol education, defensive driving, and group and individual counseling.

The program was initiated in July 1976 as a result of the efforts of Henry J. Schrieberg, Judge of the Richmond General District Court who later became program administrator, and an advisory committee. The size of the program grew rapidly with the number of defendants entering the program increasing from 400 per year in 1976 to 1,400 per year in 1978. The Richmond ASAP staff consists of a director, four case managers, three clerical personnel, and special consultants for evaluation, research, and public information and education.

The Richmond ASAP serves the city of Richmond and the surrounding counties of Henrico, Goochland, and Hanover which have a combined population of nearly one-half million. Because of the wide geographical area served, clients from a variety of backgrounds are seen. Almost one-third are Black, reflecting the large concentration of Blacks in the city of Richmond. The social, economic, and demographic characteristics of the defendants vary greatly according to drinker level. About 35 percent are classified as problem drinkers; nearly 60 percent are considered pre-problem drinkers; the remainder are social drinkers. The median age of defendants is slightly over 35, although defendants tend to be concentrated in the

under-35 range. While approximately one-fifth are under 25 years of age, referrals of juveniles under 19 years of age have been rare (Saunders, 1978).

The Youth and Young Adult Program at the Richmond ASAP

While the Richmond ASAP has long suspected that a large number of juveniles were drinking and driving, these youth were not being apprehended by police officers or referred to the program by the Juvenile Court. In fact, during the first six months of 1978 only one juvenile entered the program. Even when youth 19-24 were being referred by the courts, they were sent to treatment and educational programs designed to serve adults with long histories of drinking.

Discussions with judges, police officers, probation officers, school officials, and youth counselors disclosed that the problem was much greater than referral levels indicated. These contacts suggested that the lack of juveniles entering the program was the result of several factors. Enforcement efforts were not directed toward places where youth tend to congregate. There was also a hesitancy on the part of police officers to charge juveniles who had been apprehended. They would typically charge juveniles with a lesser offense or call parents and ask them to take the youth home. Many of the police officers also believed that DWI procedures for juveniles differed sharply from those used for adults when the only difference is that a blood test cannot be taken without consent of the parent or guardian. The knowledge that there were no educational and treatment resources to which juveniles could be sent also deterred police officers from charging youth with driving while intoxicated, since they knew the courts could do little to help the youth. This was analogous to the situation that existed with respect to adult offenders prior to the establishment of the ASAP program.

In July 1978 a special outpatient treatment facility for youth and young adults was established by Cumberland Farms, Inc. This program, which was funded

on a contract basis by the Richmond ASAP, was designed to meet the special needs of this age group and, for the first time, Richmond had a bonafide resource to which youthful offenders could be referred. The first group of young defendants entered the program in the late summer of 1978. An important feature of this program is the involvement of parents, since alcohol and drug abuse problems of youth tend to be family problems. Parents must also participate in the initial court appearance and in the initial interviews at the ASAP office. Youth arrested for DWI must be processed through the Richmond ASAP before being referred to the treatment modality.

The initial cost of the treatment program was high primarily because of the inability of the program to generate sufficient referrals in the early months. This problem should be corrected as larger numbers of youth are apprehended and referred to the Richmond ASAP. Unfortunately, youth programs of this type will probably always be more expensive than the more traditional efforts for adults because of the special needs of the population being served. Costs for the youth program are covered partly by the $200 court fee, partly by client and third party payments for extended and inpatient services, and partly by subsidies by the Richmond ASAP. There is clearly a need to develop more secure sources of funding for juveniles, especially those who need long term care.

Once the treatment program was established, the Richmond ASAP was in a position to expand enforcement, public information and education, and evaluation efforts. Senior police officers in the localities served by the Richmond ASAP were contacted about the program. With their encouragement, a two-hour police orientation for all officers was developed and implemented to inform officers about the youth and young adults program, to review procedures for arresting juveniles, to demonstrate that arrests would lead to positive action, and to reinforce that the juvenile and adult courts and senior police officers supported the effort. These orientations

generally involved presentations by the ASAP director, the public information and education consultant, and the director of Cumberland Farms, Inc. The Richmond ASAP also funded a special weekend ASAP enforcement effort that patrolled areas with a history of summonses involving juveniles.

Because they were not always sure how to handle the problem of drinking and driving among youth, discussions were held with juvenile court judges in the city of Richmond and the surrounding counties. The judges were very supportive of the effort and arranged for orientations with probation and youth service officers. It was the willingness of the juvenile court judges to refer to the Richmond ASAP and to require the parents and guardians of juvenile offenders to participate that has made the youth and young adult program a success.

The Richmond ASAP also mounted an extensive public information and education campaign directed at the entire community. This involved contacts with teachers and driver education personnel at local schools to inform them about the program. Special presentations were made at inservice training sessions in the city and county schools. A number of television appearances were made by program-related personnel that included a panel consisting of a case manager or the director, a law enforcement official, the director of Cumberland Farms, Inc., and the public information and education consultant.

The youth and young adults program has grown in the first six months of operation and now averages six to ten referrals per month from the juvenile court. Currently most of the referrals are youth with serious drinking and related problems. Their BACs are exceedingly high for youth — from .15 to .20. Most of the youth have problems with the use of other drugs and severe problems in their relationships with peers, parents, schools, and employment. It is anticipated that as the program matures, the proportion of such severely disturbed youth should decline.

The program has begun to explore ways to measure program impact. Because of the low rate of arrests, the use of recidivism among program participants will not be feasible in the near future. The use of community-wide crash data or recidivism rates will also present problems because of the relatively low number of crashes and DWI arrests for youth in this age group. The use of BACs at the time of arrest presents further problems because juveniles often lack drinking experience and although they may be functioning as if they were intoxicated, their BAC levels may often be under the legal limit of .10. The tendency of youth to use other drugs in combination with alcohol further complicates the use of BACs as a criterion measure.

Initial measures of success will probably center around the number of arrests that are made by the special youth patrols and by other traffic officers, the number and type of traffic summonses being issued to juveniles in the Richmond ASAP area, and the severity of the problems of the youth being arrested.

IV. PREVENTING MISUSE OF ALCOHOL BY YOUTHFUL DRIVERS

The current program for youth and young adults sponsored by the Richmond ASAP is directed primarily toward identifying youthful drunk drivers and taking steps to help them control their behavior. As such it focuses on youth whose alcohol and driving problems are already evident. While this approach has considerable short term value, it runs contrary to a growing movement in mental health and related fields that stresses prevention rather than control of social problems. (Albee,1978;Bloom,1979;Goldston,1977;Klein,1977).

The youth and young adults' program of the type described will never be fully effective unless it develops strategies to attack the problem of alcohol and driving among youth before it surfaces. Broad based public information and

education strategies are not sufficient, nor will efforts that simply append prevention programs to existing rehabitiation and treatment programs, since the prevention efforts will be viewed as secondary concerns.

Prevention strategies are particularly critical for youth because drinking and driving are socially learned behaviors (Bandura, 1969). Young people model or imitate the actions or behavior of their social peer groups, their parents and their older siblings and that social learning guides a young person's safety orientation although it occurs long before they learn to drive. Learning about driving involves a combination of instructions about what should be done and lessons about how to take risks without getting caught.

This suggests efforts that start before youth reach driving age - before problems surface - and places heavy emphasis on the social system in which youth are involved, that includes peers, families and schools, in an attempt to build long term driving habits and attitudes. Primary prevention involves both forestalling the occurence of undesirable events as well as the promotion of corresponding goals. The Richmond ASAP wishes to forestall the use of alcohol when operating a motor vehicle and to promote defensive driving skills. It must focus both on high risk individuals, such as children of arrested DWI's or siblings of DWI's, as well as broad population groups such as young drivers from whom the behavior will develop. Prevention efforts must also utilize active as well as passive strategies. Seat belts are an example of an active strategy since they require specific action of the individual, while passive such as air bags do not (Bloom, 1979).

Evidence suggests that social learning about drinking and driving works best if based on a) distributed practice rather than massed practice, b) self-discovery rather than pre-digested lessons imposed by an authority figure whose legitimacy may be based on coercive power and c) learning in natural environments rather than artificial ones where generalizations of lessons may be more difficult.

With this in mind the Richmond ASAP is beginning to build a clearly identified prevention program for youth that will not be connected with existing treatment and rehabilitation efforts. It will focus on youth who have not yet started to drive or who are just receiving their operator's permits. Pre-driving youth will consist of individuals whose siblings have been identified by special community enforcement efforts as being especially vunerable to alcohol and driving. Groups of youth will go through a series of simulation experiences such as trigger films and discussion groups that seek to collapse maturation-producing experiences into a shorter time period than would naturally occur (Pelz, 1974). Families will also be involved as a unit in defensive driving training and follow-up booster shots to recharge the educational experience will be implemented at various points. A long term evaluation component is being built into the effort that consists of a variety of contrast and control groups.

In addition a special orientation on alcohol and driving is being developed that will be given to all juveniles applying for driving permits in the areas covered by the program. In Virginia licenses for youth under 18 years old are given out by juvenile court judges. The youth applying must appear before the judge along with a parent or guardian. The orientation will be presented at this time. Background and knowledge data will be collected at this time and will serve as the basis for an evaluation effort that will continue over a several year period.

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THE CLASS THAT WAS DESIGNED TO TEACH - EACH ONE

BY

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MAY 2, 1979

D.W.I COUNTERATTACK SCHOOL TAMPA-HILLSBOROUGH, INC.

THE CLASS THAT WAS DESIGNED TO TEACH - EACH ONE

The DWI Counterattack Program was started in Tampa in 1971. This program was initially designed to be presented as one course to all students, regardless of their scholastic or learning abilities. This type of program presented a real problem for the student who could neither read nor write.

In 1972, the DWI Counterattack Program in Tampa recognized the need to establish a special class for the illiterate student. This class was structured to combat the failure that the illiterate student was experiencing in the regular classes, which require a significant amount of reading and writing. This special program was devised to emphasize active participation. It was a class designed to teach each student at his level of comprehension.

This class is divided into four sessions with three instructors present at all times. The ratio was established so that each student could receive a great deal of individual attention.

Film used are: (Attachment A)

First Session	"Mechanized Death"
	"Verdict at 1:32"
Second Session	"D.W.I. Decision"
Third Session	"Fifth Street"
Fourth Session	"Oscar"
	"So Long Pal"

During the first session, exercises were developed which would allow students to experience changes in depth perception, visual field and double vision - without drinking. Depth perception is adversely

affected at very low levels of alcohol.

Studies have indicated that the ability to see objects in relationship to other objects is affected at blood alcohol levels of only .05 percent. One of our more successful ways of getting across to our students the idea of loss of depth perception is with the "pen touching experiment." The idea is to show the students visually what happens to their binocular vision after a few drinks.

The exercise begins with the instructor holding an ordinary pen in a vertical position at sightly above waist level. The volunteer student is asked by the instructor if his vision is alright and he will usually respond that it is. The student is then asked to look at the pen the instructor is holding and, after making sure he can see it, he is asked to raise his hand over his head and to touch the tip of the pen with the tip of his index finger. He will be able to do this without any difficulty. The instructor will let him practice this again to make certain he can do this with no trouble. The student volunteer is now asked to close one eye and, making sure he can see the pen clearly, is asked to repeat the same movement - to touch the tip of the pen. He will usually fail to hit the pen by at least one inch on his first try, this will get a chuckle from the other students. Other volunteers can be used if time permits.

The following exercise is useful since it requires physical involvement on the student's part. Statistics show that the average driver loses 2/5 of one second in reaction time, when he obtains a BAL of .05. The only materials needed for this exercise is a piece of chalk, one piece of string 34 ft. in length and a nerf ball. The instructor begins the exercise by telling the students he is going to throw the ball toward one student and that the student should attempt to catch it. However, the student will not have any previous warning until the ball is thrown.

The instructor then throws the ball to several students to test their reaction time. After this, he asks one student to describe in detail what was involved before he could catch the ball. This requires using the ears to hear the request, the brain to make a decision, sending the message to various muscles of the body, and finally the parts of the body moving with the proper coordination to complete the task. Once the concept of reaction time is understood and acted out, it is time to demonstrate what 2/5 of a second is and how far a car would travel in 2/5 of a second assuming the car was traveling at 60 mph. To demonstrate 2/5 of a second the instructor picks a student for a volunteer.

The instructor then holds a piece of chalk in one hand with the other hand under the chalk approximately 15 inches. He then tells the student that he wants the student to hold his hands approximately 12 inches apart on a horizontal plane as if he were getting ready to clap. The instructor explains that he is going to drop the chalk and that once the student sees the chalk begin to fall he should clap his hands together before the chalk travels the 15 inches between the instructors hands. Most students will not be able to clap their hands together before the chalk hits the instructor's bottom hand, thus placing additional emphasis on how brief 2/5 of one second is.

The instructor now demonstrates what would happen to an average driver who had obtained a BAL of .05. The instructor selects another volunteer student from the class. He explains to the student how much he's had to drink to reach a BAL of .05 (according to the student's weight). The instructor then asks the student to sit on the desk and simulate the motion of taking the foot off the gas pedal and hitting the brake. He explains to the student that since he has lost 2/5 of one second in his reaction time, the car will travel an additional 34 ft. in the time required to move the foot from the accelerator and step on the brake pedal.

To emphasize the distance, the instructor takes one end of the string and has the student take the other end of the string and walk until he reaches the end of the string (34 feet). At this point instructor and student hold the string in air so the other students can reflect on possible consequences of losing even 2/5 of a second reaction time in an automobile traveling 60 mph.

Another good exercise is what we call the "Interference Chain - Drinking Driver Demonstration."

This exercise uses students from the class to demonstrate the effects of too many drinks on driving skill. For this demonstration the instructor sets 3 chairs in a line about 3 or 4 feet apart with enough room on each side of the chairs for a person to walk. A student is selected to be the driver for this demonstration and another student is chosen to be the car. The student, who is the driver, stands behind the student who is the car with his hands placed on his shoulders. The instructor tells the driver that when he wants the car to go forward, push forward with both hands; when he wants the car to turn right push forward on the left shoulder; to turn left, push forward on the right shoulder and to stop, pull back with both hands. The student team is then asked to drive a figure 8 around the chairs.

After that run is completed the driver is asked what alcoholic beverage he likes to drink. Another student is then selected to be that drink and he is positioned between the driver and car. The new member is then instructed on how to translate the shoulder movements made on him by the driver and he is to make the same movements with his hands on the shoulders of the student in front of him, who is the car. The threesome is then asked to drive a figure 8 around the chairs. They perform it jerkingly and with some confusion. This always evokes laughter from the

class and the point is being made that alcohol interfers with driving skills.

Another student is then chosen from the class to be a second drink for the driver. The interference chain is lengthened, their performance more bumbling. But despite the laughter, this demonstration uses class members to make the very serious point that the more a driver drinks, the more it interfers with his driving tasks. On the highway, in real life, poor driving performance is no laughing matter. It can kill you!

During the second session we attempt to wage a war with myths regarding the use of alcohol. Specialized drink charts are filled out by students in small groups, and reviewed with each student (see Attachment B). With this chart the student will need a ruler to utilize the chart in calculating the number of drinks he can have and remain under .05 and be considered a legal driver in the state of Florida. We show a shot glass, 12 oz. can, 4 oz. wine glass and a fifth so that a visual relationship can be established between ounces and that size of glass from which a person may drink.

The chart is also utilized to give the students an idea of how many drinks they would have to consume within one hour to obtain the same BAL they had at the time of their arrest. To utilize the chart the student finds his BAL (at the time of arrest) on the right hand column then he takes his ruler and places one end on the BAL level and puts the other end under his weight. The number of drinks that are intersected in the middle of the page would be the number he would have to drink in one hour to reach the same level of intoxication he registered at the time of his arrest. In order to calculate how many drinks the student can have and stay under .05, the previous process is reversed. This time the student places the left end of his ruler directly under his weight on the left hand column of the chart. After this, he places the right end of the

ruler under .05 (not on .05 since this is illegal in Florida). When these two points are connected, the number of drinks (which are considered to be legal) will be taken from the point where the ruler and the middle-drink-line on the chart intersect.

The later part of the second session is used to assign students into small groups and, to assist each student in filling out a questionnaire which we utilize in the third session. This questionnaire is designed to help each student analyze his or her drinking problem. The instructor reads the statements and the students make a (+) mark for yes and a (-) mark for no. (see Attachment C)

The third session begins with a group discussion regarding problem drinking and it is stressed that it is not our intent to have the studnet stop drinking but merely to give him enough information so he can identify a drinking problem in himself or someone else.

After this, each of the charts is discussed in such a way that each student has an opportunity to view himself in a particular graphical representation. This particular graphical representation was arranged with color coding so that the student would have a concrete example of his particular situation as compared to the other students in the class. This chart was broken into three different areas with green indicating no problems, yellow indicating some symptoms of problem drinking and red indicating that client had numerous symptoms of alcoholism and might want to consider total abstinence.

The instructor draws the chart on the chalkboard and places each student's name in the appropriate place on the chart. The instructor then tells the student he will be placed on the cahrt according to the information that he has provided on Attachment C. The "yes" answers on Attachment C are then tallied for each student and his placement on the chart is determined according to the number of "yes answers he provided.

Each "yes" answer is a possible symptom of problem drinking. However, the total number of "yes" answers is calculated to place the student into the particular areas described previously.

Example:

STUDENT'S NAME	YES ANSWERS	GREEN (O.K.)	YELLOW (Caution)	RED (Danger)
John Doe	3- 4 Symptoms	X		
Bill Doe	5- 8 Symptoms		X	
Tom Doe	9-26 Symptoms			X

The instructor asks each student to comment on his placement on the chart in relationship to previous class discussions about the major problems that have occured as a direct result of his drinking. During this exercise, the instructor also refers to the student's Personal Data Form (see Attachment D). The Personal Data Form is completed by the instructor for each student before the beginning of the first session. It contains the arrest record of the student with a breakdown of how many of these arrests were due to alcohol use. The student and instructor now have the benefit of the student's actual case history, class discussion and number of problem symptoms from which to base a decision about the possible consequences of future drinking.

The last session is spent in review of all materials we have completed. The high point of this session is the Knowledge Test of 20 questions which is not really a test - it is a review device which the instructors administer orally to the gorup. (see Attachment E) The instructors "psyche" the class up for the drama of competition by telling them the highest score ever made by a class on the test was 16 correct out of 20 questions. Then one of the instructors suggests that possibly this might be the class to break the old record. Another instructor, playing the "Devil's Advocate," counters that this class won't break the record of

16 correct answers.

After a minute or two of arguing between the instructors, the oral test is begun. Each student is called on randomly to answer a test question. A tally of correct and incorrect answers is kept on the blackboard as the test progresses. As the tally of correct answers on the board nears 13 or 14, excitement is obvious in the group. It is pin-quiet in the room as the record-breaking question is asked, and spontaneous applause, as the correct answer is given. We are about to graduate another record-breaking group.

We also utilize the fourth session to have former students of the DWI Program give a presentation to the class regarding their previous experiences with the DWI Program. We found this to be very effective since the students seemed to identify much more readily with former students who had actually been through the program.

It is the consensus of the instructors and the students that this particular personalized approach has been very valuable in working with individuals who have difficulty with reading or writing skills. The exercises which require active physical participation are very popular with the students. Many of the regular classroom instructors throughout the State have incorporated portions of these exercises in their classes.

(ATTACHMENT A)

LIST OF FILMS USED IN SPECIAL CLASS

FIRST SESSION

" MECHANIZED DEATH "

Highway Safety Education
P. O. Box 1563
Mansfield, Ohio 44907

" VERDICT AT 1:32 "

Narcotics Education, Inc.
P. O. Box 4390
Washington, D.C. 20012

SECOND SESSION

" D.W.I. DECISION "

Visucom Productions, Inc.
P. O. Box 5472
Redwood City, Ca. 94305

THIRD SESSION

" FIFTH STREET "

CRM Education Films
5797 New Peachtree Rd.
Atlanta, Ga. 30340

FOURTH SESSION

" OSCAR "

Southerby Productions, Inc.
1709 E. 28th St.
Long Beach, Ca 90806

" SO LONG PAL "

Aims Instructional Media Services, Inc.
P. O. Box 1010
Hollywood, Ca. 90028

STUDENT'S NAME	GREEN (O.K.)	YELLOW (CAUTION)	RED (DANGER)
JOHN DOE	X		
BILL DOE		X	
TOM DOE			X
HARRY DOE			X

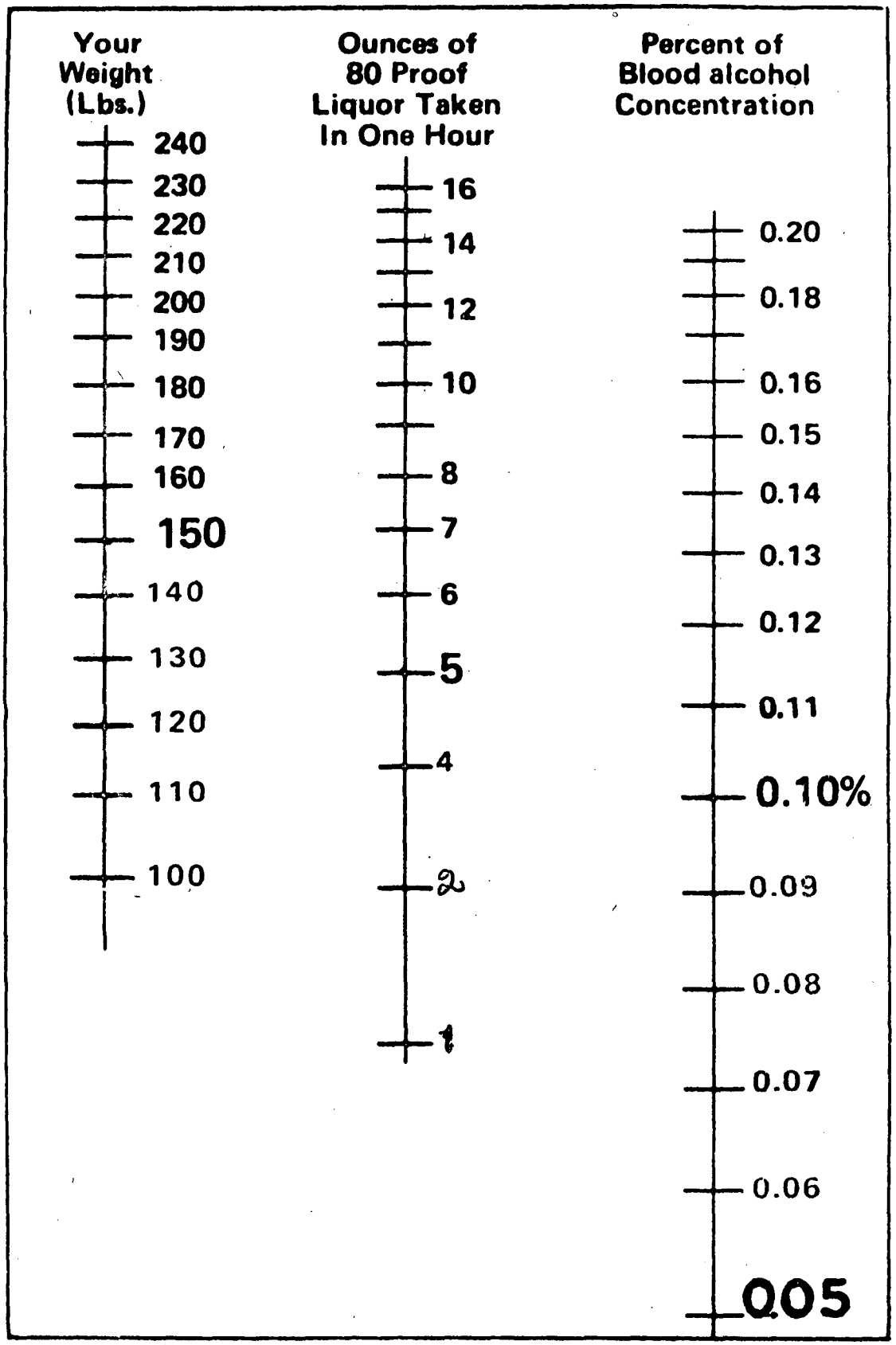
YES ANSWERS

3 - 4 SYMPTOMS	GREEN
5 - 8 SYMPTOMS	YELLOW
9 - 26 SYMPTOMS	RED

(ATTACHMENT B)

COURSE NO. _____ NAME _____

BAL. CHART



Yes/No WHP (ATTACHMENT C)

_____ 1. Do you occasionally drink heavily after a disappointment, a quarrel, or when the boss gives you a hard time?

_____ 2. When you have trouble or feel under pressure, do you always drink more heavily than usual?

_____ 3. Have you noticed that you are able to handle more liquor than you did when you were first drinking?

_____ 4. Did you ever wake up on the "morning after" and discover that you could not remember part of the evening before, even though your friends tell you that you did not "pass out"?

_____ 5. When drinking with other people, do you try to have a few extra drinks when others will not know it?

_____ 6. Are there certain occasions when you feel uncomfortable if alcohol is not available?

_____ 7. Have you recently noticed that when you begin drinking you are in more of a hurry to get the first drink than you used to be?

_____ 8. Do you sometimes feel a little guilty about your drinking?

_____ 9. Are you secretly irritated when your family or friends discuss your drinking?

_____ 10. Have you recently noticed an increase in the frequency of your memory "blackouts"?

_____ 11. Do you often find that you wish to continue drinking after your friends say they have had enough?

_____ 12. Do you usually have a reason for the occasions when you drink heavily?

_____ 13. When you are sober, do you often regret things you have done or said while drinking?

_____ 14. Have you tried switching brands or following different plans for controlling your drinking?

_____ 15. Have you often failed to keep the promises you have made to yourself about controlling or cutting down on your drinking?

_____ 16. Have you ever tried to control your drinking by making a change in jobs, or moving to a new location?

_____ 17. Do you try to avoid family or close friends while you are drinking?

_____ 18. Are you having an increasing number of financial and work problems?

_____ 19. Do more people seem to be treating you unfairly without good reason?

_____ 20. Do you eat very little or irregularly when you are drinking?

_____ 21. Do you sometimes have the "shakes" in the morning and find that it helps to have a little drink?

_____ 22. Have you recently noticed that you cannot drink as much as you once did?

_____ 23. Do you sometimes stay drunk for several days at a time?

_____ 24. Do you sometimes feel very depressed and wonder whether life is worth living?

_____ 25. Sometimes after periods of drinking, do you see or hear things that aren't there?

_____ 26. Do you get terribly frightened after you have been drinking heavily?

(ATTACHMENT D)

DWI - SPEC
1/73 - PDF

DATE _____

PERSONAL DATA FORM

1. Course No. _____

2. Name _____

3. Address _____

4. Sex M F 5. Age _____ 6. Weight _____

7. Last grade in school completed _____

8. Type of work _____

9. Income per month _____

10. Date of DWI arrest _____ 11. Time of day _____

12. Accident involved? _____ 13. Fatality? _____

14. Any injuries? _____

15. Has your license ever been

____ Suspended? No. of times ____

____ Revoked? No. of times ____

16. Ever been arrested before? ____ No. of times ____

17. Dates of previous arrests and charge

Date _____ Charge _____

Date _____ Charge _____

Date _____ Charge _____

18. Number of arrests where alcohol was involved _____

19. Have you ever thought you might have a drinking problem? _____

20. Have you sought help? _____ Where? _____

MEDICATION:

_____

_____

_____

_____

(ATTACHMENT E)

DWI - SPEC
1/73 - PPQ-1

Name _____

Course No. _____

Date _____

QUIZ

SAMPLE QUESTIONS:

☐ A. Tampa is the capital of Florida.

☐ B. Washington, D. C. is the capital of the United States.

☐ 1. A younger person will get intoxicated faster than an older person on the same amount of liquor.

☐ 2. A person drinking on an empty stomach will get intoxicated faster than a person who has just eaten something.

☐ 3. If a person drinks whiskey with a mixer like soda water or ginger ale, he can drink more without getting intoxicated than if he drinks the whiskey straight.

☐ 4. A small person will get intoxicated faster than a large person.

☐ 5. If a person sticks to the same kind of drink, he is less likely to get intoxicated than if he mixes different kinds of drinks, like beer and whiskey, gin and scotch.

☐ 6. A person who is used to drinking can drink more and not become intoxicated than a person who drinks only once in a while.

☐ 7. Alcohol will affect a person faster if he is under medication like a tranquilizer or antidepressant.

☐ 8. Strong black coffee, tea, aspirin, and cold showers are all helpful in sobering up a person before he drives.

☐ 9. Beer is pretty much like a soft drink as far as making a person intoxicated is concerned.

☐ 10. Alcohol is a stimulant.

☐ 11. Drinking alcohol can cause temporary blurring of vision, tunnel vision, and "seeing double."

☐ 12. Alcohol makes you feel younger but act older.

☐ 13. Three or four drinks in an hour does not hurt driving ability for most people because the body uses up the alcohol very fast

☐ 14. Alcohol is used up faster if you exercise or work hard after drinking.

☐ 15. Most people drive after drinking.

☐ 16. A person's judgment is actually a little better than normal after a drink or two.

☐ 17. Being unable to control the amount you drink on any given occasion does not mean you are an alcoholic because most people drink more than they want to anyway.

☐ 18. The most serious effect of alcohol on your driving is to increase your self-confidence while at the same time making it harder for you to act and react safely.

☐ 19. Even moderate drinking has the same effect on your vision as driving with sunglasses in twilight or in darkness.

☐ 20. The amount of alcohol in a 12-oz. can of beer is much less than the amount of alcohol in a 1-oz. shot of whiskey.

ALCOHOL COUNTERMEASURES: ALIVE AND DOING VERY WELL IN NEW JERSEY

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I. INTRODUCTION

Since 1966 the Federal Government has spent considerable time and money attempting to develop a systematic approach to the problem of alcohol and highway safety. The main thrust of this effort was embodied in the Alcohol Safety Action Projects (ASAP). Unfortunately, the results of these relatively short term ASAPs seem mixed at best, because their goals were too ambitious and ill-defined. In addition, neither the supporters of ASAP nor the critics have allowed sufficient time for evaluation. What is left appears to be a patchwork of limited state and local programs.[1]

New Jersey did not participate in ASAP; instead, using other federal funds, the state developed its own comprehensive, long-term alcohol and highway safety program. Expanded to mandatory, state-wide operation in 1977, this self-supporting program has shown that it can be operated cheaply and efficiently. More time will be needed, however, before final judgments on the usefulness of alcohol countermeasures can be made. Meanwhile, what follows is offered as a way to continue the national effort to reduce alcohol related crashes and fatalities, in a manner designed to limit the amount of public money necessary to support it. Other states may wish to develop programs with a similar, low-cost approach.

II. PROGRAM BACKGROUND

The New Jersey Division of Motor Vehicles, Bureau of Alcohol Countermeasures (BAC) is a program mandated by state law to apply to all drivers convicted of alcohol-related traffic offenses. In addition, the Bureau is the focal point of a coordinated effort within the State to reduce the incidence of drunk driving and its harmful consequences through education or rehabilitation of convicted drinking drivers, increased law enforcement, improved administration of the law, and the education of the driving population in general to a safe and reasonable standard of drinking before driving. This program is unique in the United States, because of its mandatory nature, its low cost, its relative simplicity in design, and its pivotal location in state government.

BAC was preceded by a federally (402) funded pilot program, the Alcohol Countermeasures Project (ACP) which ran from May 1972

until April 1977 in four demographically representative counties. The findings of this pilot program were the bases of recommendations by a Motor Vehicle Study Commission in 1975 to expand ACP into a mandatory state-wide program. Neither the pilot nor the state-wide program have been operated long enough to justify sweeping conclusions of success, but evaluations of the pilot program suggested to the Legislature that changes in the drunk driving statute were warranted, and that long term gains could be expected.[2] The State, therefore, chose to embark on an extended, multifaceted experiment in alcohol and highway safety.

From the outset, it was apparent that the problem would not yield to simple or simplistic solutions, because the "problem" was in fact a composite of two separate sets of phenomena: drinking, and driving. In addition, the basic information necessary for intelligent, planned responses to this problem was not readily available. Finally, the traditional approaches of the alcoholism treatment or highway safety communities, applied uncritically, were insufficient or worse - irrelevant.

Aiming a DUI program solely at problem drinkers or alcoholics in order to prevent alcohol-related crashes and fatalities had validity only if a causal connection could be made between these groups and accident statistics. For the purpose of preventing such crashes, however, the required connection could not be made. Even though a superficial case could be made for "alcoholics" as a prime target group, analysis quickly revealed that abusive drinking and driving was much more widespread. Broadening the target population to include problem drinkers was also unproductive, since the term fell apart under close scrutiny. Despite the desirability of developing ways to identify "high-risk populations," it was impossible to isolate and prevent such groups from doing the undesired behavior.

It was apparent that the practice of DUI was also bound up with other factors in society, such as deeply embedded attitudes toward drinking, which militated against institutional or public support for drastic measures. The program faced a common paradox: people perceived a problem at one level, but at another level blamed others, and failed to take personal responsibility for it. Thus there were calls to "do something" or "get the drunk off the road," but there was little support for, or recognition of the fact that real progress might occur only after significant changes had taken place in society's values and attitudes relative to drinking and to driving.

With these especially severe limitations in mind, however, an experimental program (similar to ASAP) was designed on the assumption that something should be done, that the problem could be broken into constituent parts, and that some impact could be made by efforts in specific areas. The idea was to start with a known and easily identifiable population - convicted drinking drivers - and to develop and to test techniques that could be applied to them. At the same time, work would be done in other

parts of the criminal justice system to raise enforcement to acceptable levels, and to improve administration. Finally, openings to other segments of the driving population would be sought using the techniques of preventive education. The ultimate goal was to be the reduction of alcohol related crashes and fatalities, but program planners recognized that such a reduction would not be immediately apparent, and even if it did occur, proving cause and effect would be difficult at best. Alcohol Countermeasures would have to exist in a real world of uncertainties and contingencies. Evaluation of such a program would have to account for these facts of life, and take place over a relatively long period of time.

This experiment, especially with respect to the potential of education and rehabilitation for changing the behavior of convicted drinking drivers, was not intended to displace traditional sanctions such as license suspensions, fines, and jail sentences. The judicious use of these sanctions combined with education or rehabilitation appeared to have the best potential for addressing this component of the problem. The State never seriously considered implementing court diversion or pre-trial intervention programs for convicted drinking drivers, because they did not appear to be efficient or effective ways of handling these cases.

Neither punishment nor "rehabilitation" by themselves seemed adequate responses. Punishing without educating certain DWI offenders who violated the law out of ignorance of what is safe and reasonable meant that they would return to the road in roughly the same state of ignorance (although fear of rearrest might deter some of them from repeating the behavior). On the other hand, rehabilitation without punishment might lead problem drinker offenders and others to infer that the State did not consider their behavior dangerous and that their apparent compliance with some kind of program requirement freed them to repeat the offense. Where individuals could not control their drinking, however, punishment in the form of license suspension might prevent them from legally operating a vehicle for a limited period. But punishment combined with some form of intervention tied to relicensure would subject these individuals to strong pressures to address their alcohol problems, thus reducing the risk that upon being relicensed, they would be rearrested or involved in alcohol-related crashes.

Starting from these premises, designers of ACP worked to develop a program that was as uncomplicated as possible without sacrificing quality or effectiveness; their efforts were constrained by a budget which did not exceed $225,000 per year. The proposed Countermeasures included screening, driver surveillance, public information, and law reform. Limiting the re-education component to four sessions minimized costs with no loss of effectiveness. Placing the burden of treatment on

the client also limited program expenditures. Using Alcoholics Anonymous as a treatment option was beneficial and at the same time offered any client an effective choice of a rehabilitation program that was free. Overhead expenses for field operations were eliminated by securing free space from cooperating county governments. A modest public relations campaign was implemented through radio and TV spots, a speakers' bureau, travelling exhibits, and an informational pamphlet distribution via DMV inspection stations.

Experience in the pilot program taught that certain procedures such as screening could be streamlined, so that in state-wide operation the program would handle up to nine times the volume by only doubling its budget. Expansion of field activities in 1977 was accomplished by securing free classroom space for the program in the remaining seventeen counties in state and county colleges; centralizing all administrative functions in the Division of Motor Vehicles; expanding contacts with A.A. groups throughout the state; and securing the cooperation of most public and private alcoholism treatment facilities in New Jersey.

Despite the loss of federal funding, the net effect of these measures has been to enable BAC to hold its actual costs per client to well under the thirty dollar program fee now charged. This thirty dollar fee, compares favorably, not only with equivalent programs in neighboring states, but with a recent federal estimate that $200 per client is a reasonable figure for a self-supporting DUI program. Current program budget is approximately $500,000 per year.

Other factors which have contributed to the successful growth and development of Countermeasures in New Jersey were the decision to locate the pilot program in the office of the Director of the Division of Motor Vehicles, and the unstinting support of the present Director and his immediate predecessor. By virtue of its location in the Division of Motor Vehicles, BAC has had ready made lines of communication to those agencies whose activities affect it. Establishment within the Division also made it possible for staff to deal with other state agencies such as the State Police and the Department of Health from a position of relative equality.

Countermeasures also gained easy access to such organizations as the State Safety Council, AAA, the State Police Chief's Association, and the Police Traffic Officers Association, whose cooperation and support were necessary for the implementation of certain countermeasures, and for expansion to state-wide operation. The Project Director's membership on the Governor's Advisory Council on Alcohol Problems gave the program direct access to influential members of the treatment community, and to those voluntary organizations engaged in the prevention and control of alcohol problems. A contractual relationship with the

Rutgers University Center for Alcohol Studies for support insured that the theoretical underpinnings of the program would be sound and that program staff would be kept abreast of developments in the field.

Reforming the existing drunk driving statute was a matter of great concern. At the time, this statute appeared to be one of the strongest in the nation. It contained mandatory suspension penalties of two years for a first DUI offense, and 10 years for a second offense. Although enforcement had already doubled from very low levels of the late 1960's, only 16,590 drivers out of approximately 4,000,000 had been arrested for alcohol-related offenses in 1972, when ACP began operating.

Historically, New Jersey has treated drunk driving as a quasi-criminal traffic offense. The courts of original jurisdiction are the municipal courts, and the matter is heard before a judge without jury. Despite a relatively high conviction rate (almost 90%) it was apparent in the early 1970's that considerable plea-bargaining was taking place, which demoralized the police, and that this practice, coupled with a lack of training or equipment for making DWI arrests, held enforcement down. The need to stimulate enforcement was, therefore, obvious. After surveys of the criminal justice system were completed, ACP determined that penalty reductions tied to mandatory education or rehabilitation programs was the mode favored by both police and judges.

To document the need for change in this and in other areas of the Division of Motor Vehicles' licensing policies, and to establish a base for public support, the Governor and the State Legislature established a Motor Vehicle Study Commission in 1975. The findings of ACP relative to the nature and extent of the problem, and possible solutions formed the basis for the Commission's recommendations for statutory changes in the penalty structure, presumptive levels, and the inclusion of a mandatory education and rehabilitation program. These changes became effective in May of 1977. They eliminated the need for costly diversion or intervention programs.

The State Office of Highway Safety (OHS) funded the ACP pilot program and supported the expansion of BAC; it has also funded enforcement measures that have contributed as much, if not more to increased DWI arrest levels, than statutory reform. OHS has supported the training of breathalyzer operators carried out by the State Police under the authority of the Attorney General. All certified operators renew their licenses by participating in a bi-annual refresher course. The State Police Breath Test Unit inspects and certifies all units operating the State monthly. Since 1972, the number of certified operators in New Jersey has grown from 3,114 to 6,398. Because of OHS funding, the number of breathalyzers has increased from 401 to 594 since 1972; no patrol officer is now more than 15 minutes away from a unit.

In addition to underwriting the expansion of the breath testing program and funding special traffic enforcement patrols, OHS has purchased 1,500 mobile radar units over the last two years. OHS estimates that traffic enforcement resulting from the distribution of these units has increased 20 per cent, with a concommitant rise in the number of DUI arrests. In 1978 there were over 24,000 arrests for DUI, almost double the number arrested in 1971. In 1979, 32,000 DUI arrests are expected.

Supplementing this effort, BAC distributed a DUI enforcement manual to every local police department in the State. This manual was the out-growth of a pilot program enforcement countermeasure designed to improve the quality and quantity of drunk driving arrests in specific jurisdictions. The Bureau also sponsored the development and dissemination of a municipal judge's manual for the administration of the drunk driving statute.

III. PROGRAM STRUCTURE

In many ways, the various components of the BAC program derived from ACP, are similar to those used in the ASAP programs. The approach of BAC is novel, however, in the assignment of clients to appropriate programs, in reliance on a brief education component, and in the use of community treatment resources.

The screening component of the program is perhaps its most important element. Staff invested considerable amount of effort in this component because it is critical to the effectiveness of the alcohol safety school and rehabilitation. If the referrals from screening are appropriate, then it is likely that those referred will derive maximum benefit from their assigned programs.

Screening attempts to divide all convicted DUI drivers into two categories for purposes of referral: persons who require some kind of structured treatment for an alcohol problem, and persons who do not require such treatment but who are capable of controlling their alcohol intake when motivated. This approach departs from the Phoenix model, which initially lumped all types of offenders, irrespective of apparent drinker type, into a single program. In the pilot program, clients were screened individually by agencies who contracted with the program to perform the service. Current practice is to use part-time screeners and counselors employed and supervised by BAC.

At the screening, clients fill out a questionnaire of 108 items designed by the Rutgers Center of Alcohol Studies, and

subsequently validated and modified by the program. This questionnaire, like other inventories in the field, seeks to determine the level of involvement of the individual with alcohol, and whether referral to treatment, A.A., or school is indicated. Persons who score less than a certain number are referred to the education component of the program. Persons who meet certain criteria are routed to a counselor for further brief individual evaluation and referral. Screeners and counselors use such criteria as physical condition, BAC at time of arrest, and driver record. Criminal records are not available.

Referrals to treatment programs and A.A. have been 25% of all referrals since the inception of the program. This is a conservative figure; it is probable that another 10% could be added if less conservative criteria were used and if criminal records were available. The pilot program used a slightly different procedure: every client saw a counselor before a referral was made. This procedure was time consuming and relatively expensive; more importantly, it was no more accurate than the present mode. The types of referral also tended to depend on the treatment resources available in the community and on the professional background and experience of the counselor. Evaluation showed 91% agreement between the questionnaire and independent findings of the counselors. An experiment with a form of group screening proved to be no more effective than the mode finally adopted.

The education component of the program is called the Alcohol Safety Institute (ASI). Roughly 75% of those referred attend this component. It is made up of three, two-hour sessions, during which a number of subjects relevant to drinking and driving are discussed, such as: the effects of alcohol on mental, emotional, and physical behavior; how alcohol affects driving ability; factors that may interact with alcohol to create hazardous driving situations; New Jersey law, presumptive levels, the breathalyzer, and information about drinking behavior and alcoholism. ASI instructors are also part-time employees. They may be teachers, qualified state or local policemen, Motor Vehicle Inspectors, or alcoholism educators.

Instructors have considerable latitude in how they may conduct the course, as long as the core curriculum is delivered; they are encouraged to use the format with which they feel most comfortable. No particular emphasis is placed on discussion over more traditional lecture techniques. Pass-fail rates are monitored, as are client reactions to, and opinions of, the program. Instructors are periodically observed by District Supervisors. Since BAC is concerned that students absorb the basic elements of the curriculum, pre and post tests have been designed to reinforce learning. Final test passage rates are 93%. Evaluation of retention rates in the pilot phase demonstrated that 61% of the clients were retaining the essential information for up to three years from the time of their participation in the program.[3]

Students who recognize a need for treatment are encouraged to seek help after completing the ASI. They are informed, however, that although the instructor may make an informal referral, DMV will not intervene or monitor the treatment. The follow-up survey indicated that 5% of those completing the ASI sought help for an alcohol problem as a result of their exposure to the alcoholism information disseminated in the ASI.

BAC's cooperative relationship with A.A. is probably unique in its scale and nature. The program never attempted to deal with A.A. as an aggregate. Groups around the State were approached by mail and direct contact. Since ACP had already been operating in four counties, two of which were among the most populous in the State, there were a considerable number of A.A. members who were familiar with the program philosophy of non-intereference and who could carry the message persuasively. Currently there are almost 400 cooperating A.A. groups in New Jersey.

A client referred to A.A. must demonstrate regular attendance at a minimum of four meetings per month for one year. Attendance is proved by a certificate secured by the client from the cooperating group. The certificates are sequentially numbered IBM tab cards bearing an appropriate legend. If a client's suspension period is completed before the end of the reporting period, his driving privileges are restored provided he continues to comply with the requirement to complete one year in A.A.

Staff meet periodically with A.A. representatives to discuss problems and ways to improve the system. Relations with the groups have been generally excellent since they are confident that BAC will in no way interfere in their activities or request that they violate the canon of anonymity. BAC will not, for example, accept signed vouchers of attendance by A.A. sponsors from groups in New Jersey. Clients are also warned to respect the anonymity of the groups and individuals to which they are referred. BAC recommends initial participation at open meetings.

Roughly half of the referrals to treatment other than A.A. are to alcoholism out-patient facilities. There are 55 facilities approved by BAC, and they use report forms provided to them by the program. Clients are required to bear any costs of treatment demanded by the agencies, but BAC will not approve programs that demand excessive fees. The Bureau does not require a particular length of time in treatment, but if a client fails to meet the terms of his treatment agreement, his driving privileges are suspended until he complies. Treatment programs of this type characteristically last from six to twelve weeks; most are primarily out-patient programs, containing educational elements and counseling, plus individual and group therapy. Most clients progress to A.A. from these programs and their attendance continues to be monitored by the Bureau.

Program flexibility in this area is determined by the realities of what is available in the way of treatment resources in New Jersey (currently, the State ranks 47th in alcoholism expenditures). Since BAC is satisfied that no particular treatment modality has demonstrated clear superiority for all alcoholics or problem drinkers, the program relies on treatment professionals to apply whatever techniques they feel are the most appropriate for each client. At the same time, however, District Supervisors periodically evaluate each program to insure that it is not passing clients through the "revolving door," thus perpetuating the client's problem, and failing to eliminate the potential threat to highway safety.

All persons processed by BAC are under license suspension. As a rule, first offenders are relicensed before participation in the BAC program because most receive 60 day suspensions that make it difficult to process them before license restoration. Repeat offenders must participate prior to relicensure. Payment of fees is a precondition of scheduling. The Division of Motor Vehicles suspends the driver license upon BAC recommendation following a documented report of non-compliance with any program element. Treatment agencies supply monthly reports on the progress of clients referred; A.A. referrals mail their certificates monthly. Suspensions for non-compliance are indefinite until compliance occurs. Recidivists and multiple offenders are referred directly to treatment agencies for evaluation. Foreign state residents convicted in New Jersey are subject to the same regulations, but they may substitute programs in their home states for the BAC program. New Jersey residents convicted of alcohol related traffic offenses in foreign states must also participate in the program, or an equivalent. Persons who refuse the breath test must also participate.

Recidivism from all BAC components is currently less than 3%. In the pilot phase, recidivism was 1.8% versus 14.5% for non-project counties. The program defines a recidivist as an individual who commits an alcohol related traffic offense after completing an assigned component. The BAC figure was computed by dividing the number of recidivists reported by the total number of program completions since June 1977.

IV. CONCLUSIONS

These then are the elements that have gone into the development of the comprehensive program now operating in New Jersey. None of them alone is revolutionary, yet, when taken as a whole

the program offers a unique model for the expansion of alcohol and highway safety programs in other states. The experience of BAC shows that creative solutions to problems can be developed despite limited resources (perhaps because of them). It is not always necessary for government to spend inordinate sums. Rather, it is possible to develop programs which are centrally directed, but which use community resources and coordinate local activities. In this latter respect, alcohol and highway safety programs have an advantage because they are hybrids. Managed judiciously, they can avoid the jurisdictional disputes and philosophical tangles of the treatment community, and at the same time speak with authority to the criminal justice and education systems.

Alcohol Countermeasures programs need not be costly to the target populations. They can be supported by clients' fees, and these need not be exorbitant. Even modest fees can turn a profit if necessary. Placing the costs of treatment on the individual is not necessarily onerous - especially since A.A. is free anyway, and public programs charge on a sliding scale based on the patients' ability to pay. Alcoholism treatment is increasingly covered by third party payers, and there are also specific programs available for low income alcohol abusers.

Program design is important too: emphasis must be placed on countermeasures that will produce the maximum impact at the least cost. In New Jersey, law reform eliminated the need for costly diversion or intervention programs and helped stimulate enforcement. Using part-time professional staff for screening and referral, and eliminating most overhead costs for field operations were other ways of limiting expenditures, without sacrificing quality or effectiveness.

Strategically located, alcohol countermeasures programs can be potent sources for change in how their communities view alcohol abuse and driving. In fact a truly national network of such programs working through the driver licensing authorities of each state would be an extraordinarily powerful tool. BAC in New Jersey has begun to demonstrate this potential.

NOTES:

1. General Accounting Office, "Comptroller General's Report to Congress: The Drinking-Driver Problem--What Can Be Done About It?", February 21, 1979.

2. New Jersey Motor Vehicle Study Commission, "Report," September 1975 pp. 133-168.

3. Bradford National Corporation, "Evaluation of Alcohol Countermeasures Project Data," January 4, 1977, pp. 4-7.

A TEAM APPROACH TO TRAFFIC SAFETY AND ALCOHOL TREATMENT

A Paper

by

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Presented at

THE ALCOHOL AND TRAFFIC SAFETY SESSION

of the

1979 Alcoholism Forum

April, 1979

The following report was prepared to depict a proposed pretrial intervention project for the treatment of Drinking-Drivers. The project plans to defer the prosecution of the cases while an evaluation is made to determine whether the resources of the community would be more beneficial than the court sanction.

As defined in the Police, Corrections, and Community Crime Prevention Reports, diversion (pre-trial intervention) refers to an organized effort to utilize alternatives to initiate or continue processing into the justice system. Therefore, to qualify for diversion, formal efforts must be initiated prior to adjudication and after an illegal action is alleged to have occurred.

In keeping with the above definition, the client will be given an opportunity to participate in the rehabilitation program within seventy-two hours after the arrest. The project will be oriented toward the here and now. The purpose is two-fold: (1) to assist the participants in realizing his potentials, and (2) to assist the clients in developing the necessary skills which will allow him to function in society as a productive law-abiding citizen.

A combined effort of all segments of the community should occur to insure the effectiveness of the program. These should include the Bar Association, Judges, Police, Prosecutors, Staff and Community Service Organization. An information network should be developed to maintain an open line of communication.

The program indoctrination should began five hours after arrest. A relationship should be developed with the pretrial release's staff to

perform the initial interviews. If there is no pretrial release office, one should be established as a component of the project. It is imperative that the staff not deal with the question of guilt or innocence since a diversion client is required to waive his basic rights. Information obtained during the interview, which relates to the cases, is not permissable in court unless the defense counsel is present. It is desirable for the defense council to become involved in the screening process immediately after arrest. The admission of guilt should not be a pre-requisite of the program; therefore, if the client is terminated from the project, s/he will be returned to the system at the point of intervention. The client's inability to function in the project should not affect the decision of the court.

Statistics show that prison does not rehabilitate drunk-driver offenders, therefore, the project's goal is to offer coordinated services to selected clients arrested for drunk-driving. These areas will concentrate in personal counseling, employment and education assistance, as well as highway safety. However, in order for the project to be successful, a comprehensive client-assistance program must exist. An alternative life style must be offered and a desire to change by the offender must exist to rehabilitate a problem drinker.

The traditional probation counselor/officer relationship is not beneficial nor practical in the treatment of the Drunk-Driver. There is a tremendous need for individualized treatment; however, due to shrinking funds, it is impossible to obtain the number of persons needed to man the project. A feasible alternative is to develop a pooled case load. The concept has been utilized successfully in the Western Region of the United States. The concept is called the Community Resources Management Team (C.R.M.T.). Under this theory, the staff becomes resource brokers. They match clients' needs with community agencies who are better equipped to change the life styles of the

of the clientele. The C.R.M.T.'s approach is actually an "ABC" step for staff to advocate, to act as a broker and to interact with the community.

Under this concept, the probation counselor/officer no longer has an individualized case load, but will share it with a team of six officers. Each counselor/officer will specialize in a specific area of need. The counselor/officer will develop a comprehensive file of community resources related to his area of expertise. This concept frees the counselor to establish relationships with other agencies and to determine what type of client will benefit from the services rendered.

Approximately 45 per cent of a Probation Department's case loads is paperwork cases; therefore these cases could be handled by para-professionals, who monitor the progress of the clients and notify the senior officer of problems. This theory will allow the senior officers the opportunity to deal with major problems like alcoholism, employment, Mental Health, etc.

The total project should consist of the following components:

1. Diagnostic and Screening Section
2. Data Control Section
3. Restitution Section
4. Violation Section
5. Community Resources Management Teams (C.R.M.T.)
6. Group Therapy

With such a complex system, the Data Control Section is the most important key in the total project. A client may interface with each section. All of the sections may contribute to the overall treatment plan of the client although C.R.M.T. is the controlling force.

Each C.R.M.T. will have two clerks who are responsible for controlling the data for their specific team and for insuring the coordination of the client's

data between the different components of the organization.

The Screening Process

Five hours after arrest, the Pretrial Release counselor/officer will intervene to determine whether the client qualifies for R.O.R. (Release Own Recognizance). In addition, the project's literature will be given to the client. After which, the screening counselor/officer will access the client's file for possible admission to the project. If the client is a candidate, the court will be notified at the first court session; at which time, the court will explain the options to the client. If the client is interested, a second court date will be set within the next nine days.

During the remaining screening process, the client will be referred to the diagnostic section for social and psychological information which will be utilized to develop a meaningful treatment plan. The purpose of the interview is to identify problem areas in the client's life. Emphasis will be placed on how the client is currently functioning; ie., Is s/he currently drinking? What is his/her employment pattern? Is s/he working? What kind of life stress is s/he experiencing?, etc.

A special alcohol drinking questionaire will be developed to determine the defendant's degree of alcohol abuse. The following are indicators:

1. Blood alcohol content at time of arrest
2. Prior alcohol related arrest (D.W.I., Public Drunk, Assault and Battery, etc.)
3. Use of alcohol to alter moods, psychological dependence
4. Physical deterioration
5. Black outs or loss of memory

The Minnesota Multiphasic Personality Inventory will also be utilized in the diagnosis of problem drinkers. The inventory has been utilized successfully, by David Simmons from Memphis, in assessing factors that relate to potential

alcohol dependence. There is a possible correlation between certain personality profiles and alcoholism.

The Diagnostic Center could be manned by one full time psychologist from the local Mental Health Insitute and students from the graduate school of psychology, social work and counseling. The student resources are fairly inexpensive.

In some cases, a physical examination will be needed; therefore, a written contract will be developed with the local community hospitals to provide the service. In rare cases, the individual employer may be contacted to participate in the client's treatment process, example: When a contract of the treatment plan calls for the client to be hospitalized for an extended period. Presently, most companies actively participate in alcohol rehabilitation programs; therefore, they should be included.

There must be a team approach between the client, the defense counsel, the diagnostic center and the screening counselors/officers in the development of the clients' contract. Once all parties have agreed on the treatment plan and within ten days after the arrest, the contract will be presented to the judge for consideration and approval. The length of the contract will vary depending on the needs of the clients. Once the contract has been fulfilled, the case will be nolle prosequi. A court cost should be imposed.

Client Supervision

After all parties agree, the client will be assigned to a Community Resource Management Team (C.R.M.T.). The team will consist of a senior officer, two clerks, three junior officers and two para-professionals. The team will supervise a case load of approximately 400 clients. One of the officers will specialize in Mental Health, one in alcohol abuse and the third in employment, education and vocational training. The senior officer will be

responsible for the correlation of the group. The para-professionals will be responsible for the supervision of the forty-five per cent which will be paper work cases.

The client will be interviewed by a team member to further determine his needs and to emphasize the conditions of the contract. After which, the client's needs will be prioritized on a need assessment form. The most pressing problem will determine which team member will receive the case. A regular weekly staff meeting will be held to make decisions regarding the progress of the clients. While one team officer is focusing on the primary problem, appointments are being made with other officers to address the secondary problems. The officer will be responsible for hooking-up the client with the community agency; after which s/he monitors the progress of the agency and the client. The officer will act as an advocy to insure the success of the union between the client and the community agency. The client will not be assigned to a specific counselor, instead, the client will be assigned to a team. The client-officer relationship will become more businesslike and systematic. The one to one client relationship will remain intact; however, it will be with an expert in the community. The officer becomes a resource broker for the client and a public relationship officer for the project and the court. The officer will also be required to revoke the client if s/he refuses to cooperate with the Community Agency. Case follow-up will be mandatory to maintain a working relationship with the agencies. The traditional probation officers have always been over educated clerks; under this system, their positions will be upgraded. In addition, the client will be referred to individuals who are qualified and have the time to provide individualized professional services.

Once the client has completed his contract, the team will meet with the client to assess his progress and determine his eligibility to be released

from the project. If all conditions are satisfactory, the court will be requested to nolle prosequi the case.

Supportive Services

The safety Driving Workshops will be developed in conjunction with the Highway Patrol and the Traffic Division of the Police Department. Emphasis will be placed on highway safety and the impairment of alcohol. The workshops will meet for four weeks, one hour a week. Each client placed in the project will be required to attend the workshops.

Restitution will be imposed on those clients involved in accidents which result in property damage not covered by insurance. Each client will be required to make monetary compensation to the victim. If the client is unemployed, s/he will be given an opportunity to perform alternative service with a non profit organization designated by the victim.

Group Therapy may include Reality Therapy and Assertiveness Training. The Diagnostic Section will determine who needs to participate. The sessions will consist of groups of ten, which will meet for six weeks, two hours per session. The sessions will be conducted inhouse by staff of the local Mental Health Center.

Community Resources

Community resources are constantly in a state of conversion. Cutbacks in services, staff turnover and relocation make it difficult for an officer to utilize the social service manual which is often outdated. Since the majority of the social service agencies are governmentally funded, complicated policies and procedures make it difficult for the offender population to receive services. Thus, the C.R.M.T. must develop a strong social service network to combat the red tape. The team members must learn to remove the barriers which prevent the client from receiving adequate services.

Before, C.R.M.T. can began to develop a comprehensive community outreach effort, it needs to educate the community as to the goals and objectives of the project. If possible, written contracts should be developed between the community organization and the project. The contract should specify what is expected of each agency. However, frequent face to face contact will do more than a written document.

Even with the best developed referral and follow-up system, the project will fail unless the client is motivated to follow through. It is important to remember, problems do not develop overnight; therefore, they cannot be solved likewise. The behavior which contributed to the present illegal act is likely to re-occur; unless, the team officers address the most pressing problem and assist in developing the resources to eliminate the situation. Old habits and behaviors are hard to change. Often, the slightest change can cause anxiety for the client; therefore, the team approach to supervision must always include the client participation. People are less likely to reject services when they are in control.

An introduction to the community agency by the team officer will serve as an ice breaker for the client. S/he should be informed as to the location of the agency, the telephone number, the floor and room number, who to ask for, information which will be requested and how to answer difficult questions. This process should be repeated until the client understands fully what is expected. This tends to build confidence; thereby, increasing the likelihood of a successful referral.

Once the referral is made, follow-up is essential. Through follow-up, the team counselor/officers will be able to devise new and creative strategies to provide assistance not only to client, but to the agency.

Training of Staff

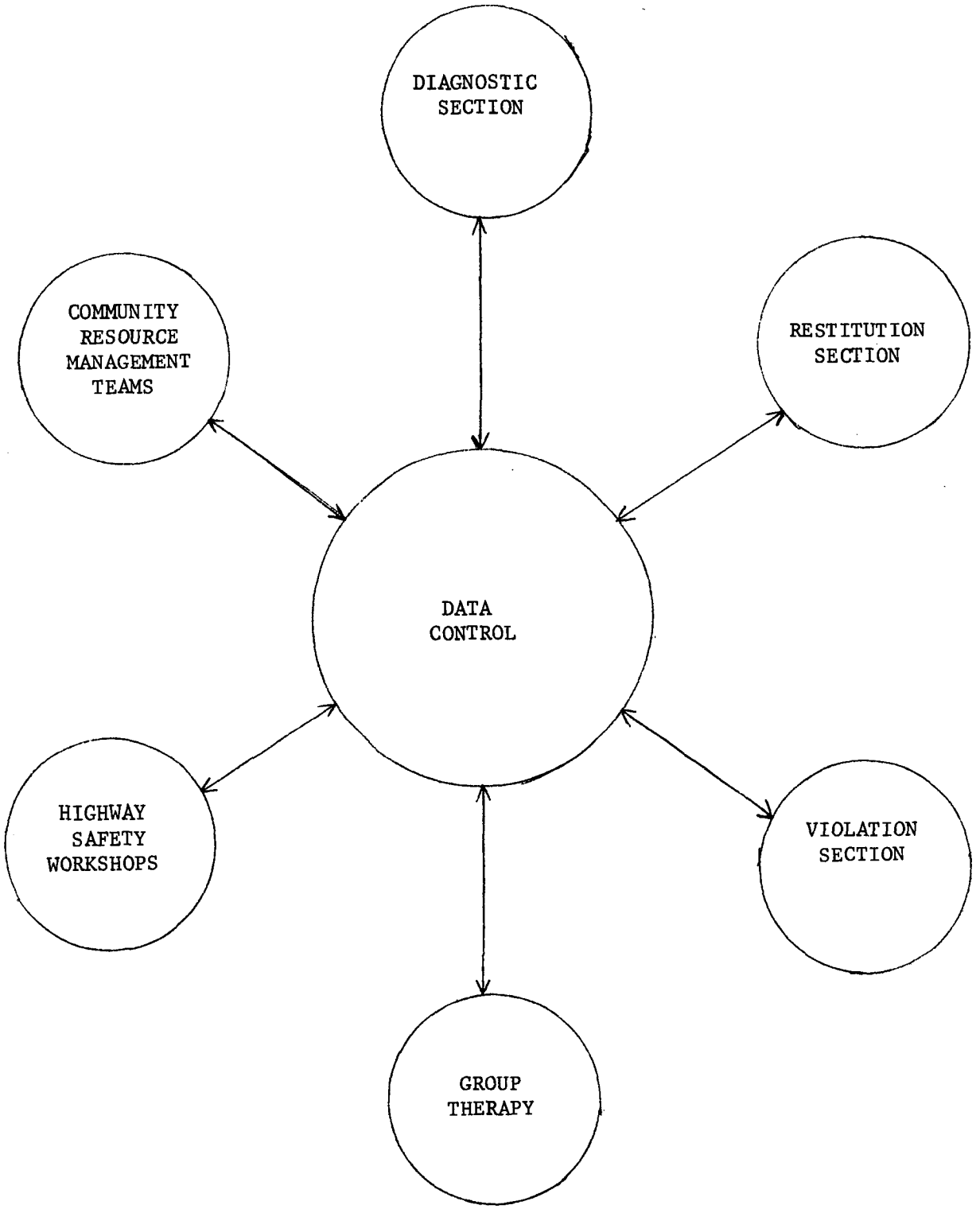
Most counselors/officers are removed from the life style of their clientele. Sensitizing the staff to the needs of the client serves as a warm-up to the actual experience of working as an officer. The staff should experience the real world of the client by living their life. This will involve requesting services from agencies and seeking a job as a defendant; in addition, they should experience the humiliation of being labeled as a problem drinker.

Summary

As case loads mount and money for probationary services decreases, management must began to develop feasible and creative alternatives to the supervision and treatment of drinking drivers. A Pretrial Intervention Team Approach is one of those alternatives. It intervenes early in the judicial process and initiates motivation to correct the problem which caused the illegal act.

The project brings together those agencies which ordinarily operate separately to act as a combined force to develop avenues to accomplish objectives which are beneficial to the community and the clientele. The concept will increase accountability and reduce wasted manpower. In addition, a solid working relationship will be developed with the community and other supportive agencies.

In fact, since the community has a greater impact on the client, it is only fitting for the project to encourage the community to play an active role. The project's responsibility is to utilize the community's resources and to manipulate the environment to assist the client in adjusting to the demands imposed by society.



DATA CONTROL CHART

THE

NEW YORK STATE

ALCOHOL AND DRUG REHABILITATION PROGRAM

NEW YORK STATE
DEPARTMENT OF MOTOR VEHICLES
JAMES P. MELTON, COMMISSIONER

APRIL 1979

THE

NEW YORK STATE

ALCOHOL AND DRUG REHABILITATION PROGRAM

1979 NATIONAL ALCOHOLISM FORUM

NATIONAL COUNCIL ON ALCOHOLISM

ALCOHOL AND TRAFFIC SAFETY SESSION

WASHINGTON, D. C.

May 2, 1979

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ALCOHOL AND TRAFFIC SAFETY SESSION
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THE NEW YORK STATE ALCOHOL AND DRUG REHABILITATION PROGRAM

INTRODUCTION

FIRST, I WOULD LIKE TO EXPRESS MY PERSONAL THANKS AND EXTEND COMMISSIONER JAMES MELTON'S THANKS FOR THIS OPPORTUNITY TO SHARE WITH YOU THE NEW YORK STATE EXPERIENCE IN DEALING WITH THE DRINKING DRIVER. AS IS BEING EVIDENCED DURING THIS CONFERENCE, WE -- THAT IS, THE NEW YORK STATE DEPARTMENT OF MOTOR VEHICLES AND THE NEW YORK STATE DIVISION OF ALCOHOLISM AND ALCOHOL ABUSE -- HAVE JOINED TOGETHER IN DEALING WITH THE DRINKING DRIVER PROBLEM. IT IS THIS PARTICULAR COMMITMENT TO PARTNERSHIP, THAT HAS UNITED OUR RESPECTIVE FIELDS OF ALCOHOL AND HIGHWAY SAFETY TOWARDS STRENGTHENING OUR APPROACH IN DEVELOPING AN EFFECTIVE COUNTERMEASURE PROGRAM TOWARDS ALLEVIATING A PROBLEM OF MASSIVE CONCERN TO ALL OF US, IRRESPECTIVE OF OUR OWN INDIVIDUAL AGENCY MISSIONS. THE SUCCESS OF THE PROGRAM IN NEW YORK STATE, WHICH I WILL BE DISCUSSING TODAY, IS TO A GREAT EXTENT, DUE TO THE COOPERATIVE EFFORTS OF A NUMBER OF STATE AND LOCAL AGENCIES, BUT IN PARTICULAR, THE COOPERATION AND SHARING OF EXPERTISE WHICH EXISTS BETWEEN THE ALCOHOL AND HIGHWAY SAFETY SECTOR.

BACKGROUND

WE ALL KNOW THAT THE CENTRAL ISSUE RELATING TO THE DRINKING DRIVER IS NOT IF THE PROBLEM EXISTS, THERE IS NO DOUBT ABOUT THAT.

WE KNOW ALL TOO WELL THE ALCOHOL STATISTICS ON THE HUNDREDS KILLED AND THOUSANDS INJURED IN OUR STATES EACH YEAR. AND, FOR YEARS WE HAVE ALL HEARD THE NATIONAL SAFETY COUNCIL'S ESTIMATE THAT 50% OF ALL HIGHWAY FATALITIES NATIONWIDE CAN BE ATTRIBUTED TO ALCOHOL INVOLVEMENT. AS YOU ALL KNOW, THE PROBLEM EXISTS. THE CENTRAL ISSUE THAT MUST BE ADDRESSED IS HOW DO WE EFFECTIVELY DEAL WITH THE PROBLEM? HISTORICALLY, THE PRIMARY METHODS OF DEALING WITH THE PROBLEM HAVE BEEN THROUGH APPROACHES PERCEIVED TO BE "PUNITIVE" IN NATURE. IT WAS FELT THAT SUCH STEPS AS HEAVY FINES, JAIL TERMS, AND CONTROLS AS LICENSE REVOCATION WOULD PROVIDE THE MOTIVATION NEEDED TO PREVENT THE DRINKER FROM EVER GETTING BEHIND THE WHEEL AGAIN. WHILE WE MUST ACKNOWLEDGE THE FACT THAT THE TRAUMA OF ARREST, CONVICTION, AND RESULTANT LICENSE REVOCATION ARE EFFECTIVE IN PREVENTING FUTURE DRINKING AND DRIVING OCCURRENCES FOR SOME OF THE DRIVING POPULATION, THESE APPROACHES, IN AND OF THEMSELVES, HAVE NOT BEEN SUCCESSFUL -- ESPECIALLY FOR THE HABITUAL DRINKER WHO DRIVES.

JAIL TERMS ACT ONLY AS STOP GAP MEASURES. OBVIOUSLY, THE OFFENDER CANNOT DRINK NOR DRIVE, WHILE IN JAIL. BUT ONCE RELEASED, THE PROBLEM STILL EXISTS, AND THE DRINKING/DRIVER PATTERN IS LIKELY TO CONTINUE. LICENSE REVOCATION IS A MEASURE EMPLOYED TO CONTROL OR PUNISH THE DRIVER AND TO KEEP HIM OFF THE ROAD. BUT REVOCATIONS ARE FOR A FINITE PERIOD OF TIME. IF NO OTHER ACTION IS TAKEN -- OTHER THAN REVOKING THE LICENSE -- THAT IS, IF NO ACTION IS TAKEN TO EDUCATE AND REHABILITATE THE DRINKING DRIVER -- HE WILL LIKELY CONTINUE HIS DRINKING/DRIVER BEHAVIOR PATTERN WHEN HIS LICENSE PRIVILEGES ARE RESTORED. INDEED, IT IS LIKELY THAT HE WILL CONTINUE TO DRINK AND DRIVE EVEN WHILE REVOKED, AS INDICATED IN A 1972 STUDY PERFORMED BY THE NEW YORK STATE MOTOR VEHICLES RESEARCH DIVISION. (NEARLY 50% OF ALL MOTORISTS RECEIV-

ING CONVICTIONS OR BEING INVOLVED IN AN ACCIDENT WERE DRIVING WHILE THEIR LICENSES WERE REVOKED OR SUSPENDED.)

AND, IT IS SIGNIFICANT ENOUGH AND REALISTIC TO NOTE THAT BECAUSE DRIVING IS A NECESSITY AND DRINKING IS SOCIALLY ACCEPTABLE, MANY COURTS VIEW CONVICTION FOR AN ALCOHOL-RELATED ARREST AND CORRESPONDING LICENSE REVOCATION AS A TREMENDOUS BURDEN TO THE MOTORIST. THE RESULT, AS WE ALL KNOW, IS OFTEN REDUCTION OF THE ALCOHOL CHARGE TO A LESSER CONVICTION. THE BY-PRODUCT OF SUCH A REDUCTION OF CHARGE IS THAT THE MOTORIST WILL LIKELY CONTINUE HIS DRINKING/DRIVING BEHAVIOR. IN ESSENCE, IT GIVES THE DRINKING DRIVER PERMISSION TO REPEAT HIS ACTIONS. FURTHER, THESE REDUCTIONS OF CHARGES OBSCURE THE TRUE MAGNITUDE OF THE ALCOHOL DRIVING POPULATION.

CLEARLY, THE STEADY RISE OF MOTOR VEHICLE INCIDENTS INVOLVING THE DRINKING DRIVER THROUGH THE YEARS HAS DEMONSTRATED THAT APPROACHES TO CONTROL THE DRIVER, EXCLUSIVE OF EDUCATION AND REHABILITATION, AND CERTAINLY REDUCTION OF CHARGES, WILL NOT ALWAYS PRODUCE THE DESIRED DETERRENT EFFECT.

IN THE LATE 1960'S AND EARLY 1970'S, THE APPROACH TO THE PROBLEM OF DRINKING DRIVERS BEGAN TO EVOLVE FROM SOLE ACTIONS SUCH AS LICENSE REVOCATION TOWARDS A MORE CONCENTRATED EFFORT OF EDUCATING AND REHABILITATING THE DRINKING DRIVER, IN CONJUNCTION WITH THE TRADITIONAL SANCTIONS. SEVERAL STATES LAUNCHED EXPERIMENTAL PROGRAMS IN SELECTED COMMUNITIES, AND THE WELL-KNOWN AND HIGHLY PUBLICIZED FEDERAL ASAP PROGRAMS (ALCOHOL SAFETY ACTION PROJECTS) CONDUCTED IN SEVERAL STATES, INDICATED POTENTIAL FOR IMPACT ON REDUCING THE NUMBER OF ALCOHOL-RELATED INCIDENTS BY OFFERING EDUCATION AND REHABILITATION TO CONVICTED DRIVERS. CLEARLY, IT WAS BELIEVED THAT THIS APPROACH WOULD INSTILL A DESIRE FOR REFORMATION, RATHER THAN RESENTMENT.

In New York State, such pioneer efforts fostered the development of legislation mandating the establishment by the Department of Motor Vehicles of a standardized, statewide Alcohol and Drug Rehabilitation Program, now commonly referred to as the Drinking Driver Program, or the "DDP". Basically, the program model was developed by incorporating the most successful approaches to dealing with the drinking driver evidenced in the ASAP efforts and in experimental programs conducted in New York State. The legislation, signed into law by Governor Carey in June of 1975, is considered to be the most significant and effective effort to date in New York State in dealing with the drinking driver problem. We are proud of the Drinking Driver Program and I would like to now spend some time to share the New York experience with this program with you.

THE PROGRAM

In discussing the program, which has been fully operational since October 1, 1975, I would like to begin by reading the legislative intent for establishing the program, clearly set forth in the opening paragraph of the law: And I quote, "The ever increasing number of accidents, personal injuries and deaths resulting from alcohol or drug related traffic offenses is a matter of great concern to the legislature. The diminished perception of intoxicated and impaired operators of motor vehicles presents a constant and intolerable threat to the lives and well-being of the citizens of this state. Efforts aimed at alleviating this threat have proven inadequate. The public interest in the cause of highway safety will be well served by the implementation of a permanent program of rehabilitation for those operators convicted of alcohol or drug related traffic offenses. The Commissioner of Motor Vehicles should have the authority to offer to such operators an opportunity for rehabilitation, thereby reducing the threat aimed at

THEMSELVES AND THE PEOPLE OF THIS STATE."

BASED ON THIS LEGISLATIVE INTENT, OR MORE APPROPRIATELY, DECLARATION OF PURPOSE, PRINCIPLE OBJECTIVES OF THE PROGRAM WERE DEFINED AS FOLLOWS: FIRST, HIGHWAY SAFETY -- REDUCING ALCOHOL RELATED ACCIDENTS AND INCIDENTS; SECOND, THE POTENTIAL FOR OFFERING ALCOHOL REHABILITATION; AND THIRD, TO STIMULATE PROSECUTION IN NEW YORK STATE OF ALCOHOL-RELATED DRIVING CHARGES.

HOW DOES IT WORK?

BY DESIGN, THE DRINKING DRIVER PROGRAM ALLOWS APPROXIMATELY 95% OF ALL MOTORISTS CONVICTED OF ALCOHOL-RELATED CHARGES TO ENTER A PROGRAM OF EDUCATION AND REHABILITATION. THIS INCLUDES THOSE MOTORISTS CONVICTED OF DWAI OR DRIVING WHILE ABILITY IMPAIRED. IN NEW YORK STATE, A CONVICTION FOR DWAI MAY RESULT FROM A BLOOD ALCOHOL CONCENTRATION LEVEL OR BAC, OF .05 TO .09%. IN ADDITION, MOTORISTS CONVICTED FOR DWI, OR DRIVING WHILE INTOXICATED, A RESULT OF A BAC READING OF .10% OR MORE, MAY ENTER THE PROGRAM. IN CONJUNCTION WITH PARTICIPATION IN THE PROGRAM, A MAJORITY OF PARTICIPANTS RECEIVE A CONDITIONAL, OR "HIGH-PRIORITY" DRIVING LICENSE, WHICH I WILL BE DISCUSSING IN A FEW MINUTES.

BASICALLY, FOLLOWING RECEIPT OF THE ALCOHOL-RELATED CONVICTION FROM THE COURTS, A MAJORITY OF CONVICTED MOTORISTS ARE INVITED BY THE DEPARTMENT OF MOTOR VEHICLES TO ENROLL IN A PROGRAM. THE DEPARTMENT REVIEWS THE MOTORIST'S RECORD AND DETERMINES PROGRAM ELIGIBILITY -- THAT IS, THE MOTORIST IS EITHER ELIGIBLE FOR BOTH PARTICIPATION IN THE PROGRAM AND THE PRIVILEGE OF RECEIVING A CONDITIONAL LICENSE; OR, THE MOTORIST IS ELIGIBLE FOR THE PROGRAM, BUT BECAUSE OF CERTAIN DEPARTMENTALLY-ESTABLISHED CRITERIA, SUCH AS INVOLVEMENT IN AN ALCOHOL-RELATED FATAL ACCIDENT, ARE NOT ELIGIBLE FOR ISSUANCE OF A CONDITIONAL LICENSE.

ONLY 6% OF ALL CONVICTED MOTORISTS ARE NOT ELIGIBLE FOR ANY ASPECT OF THE PROGRAM. (PROGRAM EXCLUSION IS EFFECTED WHEN A CONVICTING JUDGE PROHIBITS ENTRY, WHEN A MOTORIST IS SENTENCED TO JAIL, HAS HAD TWO ALCOHOL-RELATED CONVICTIONS WHERE PERSONAL INJURY HAS RESULTED IN BOTH INSTANCES, OR HAS PARTICIPATED IN THE DRINKING DRIVER PROGRAM WITHIN THE PAST FIVE YEARS.)

WHILE PARTICIPATION IN THE PROGRAM IS VOLUNTARY, COURTS HAVE BEEN ENCOURAGED TO CONDITIONALLY DISCHARGE MOTORISTS INTO THE PROGRAM. THAT IS, THE COURT, IN CONJUNCTION WITH THE CONVICTION FOR AN ALCOHOL-RELATED VIOLATION, IMPOSES A SENTENCE OF CONDITIONAL DISCHARGE -- SUCH CONDITION BEING THE SATISFACTORY COMPLETION OF THE DRINKING DRIVER PROGRAM. IN ESSENCE, THE MOTORIST IS DISCHARGED BY THE COURT WITHOUT IMPRISONMENT, AND GENERALLY WITHOUT FINE OR PROBATION SUPERVISION, UNDER THE CONDITION THAT HE OR SHE ATTEND AND SATISFACTORILY COMPLETE THE PROGRAM.

THE PROGRAM CONSISTS OF A SIXTEEN HOUR, SEVEN SESSION COURSE OF LEARNING AND DISCUSSION, WHICH ADDRESSES DRINKING AND DRIVING BEHAVIOR AND ITS IMPACT ON THE TRAFFIC SYSTEM AS A WHOLE, INCLUDING SELF-ANALYSIS OF DRINKING BEHAVIOR. THE PROGRAM, WHICH IS DESIGNED TO BE BOTH COGNITIVE AND EXPERIENTIAL, INITIALLY DEALS WITH THE TRAFFIC SYSTEM, THEN DISCUSSES THE PHYSIOLOGY OF ALCOHOL, AND FINALLY TIES THE TWO THREADS -- HIGHWAY SAFETY AND ALCOHOL -- TOGETHER, AND DEALS WITH RESPONSIBLE DECISION-MAKING SKILLS CONCERNING FUTURE DRINKING AND DRIVING BEHAVIOR. SINCE THE CLASSROOM POPULATION REPRESENTS A BROAD SPECTRUM OF ALCOHOL USERS AND ABUSERS, THE CURRICULUM TREATS THE ALCOHOL PROBLEM AT THREE LEVELS: THE SOCIAL DRINKER -- WHOSE DRINKING AND DRIVING BEHAVIOR IS OCCASIONAL AND DOES NOT SIGNIFICANTLY AFFECT THE TRAFFIC SYSTEM; THE BEGINNING PROBLEM OR PRE-PROBLEM DRINKER -- WHOSE ALCOHOL CONVICTION REPRESENTS A POSSIBLE CLUE TO BEGINNING ALCOHOLISM; AND THE ALCOHOLIC. THE CLASSROOM SIZE IS LIMITED TO 20 PARTICIPANTS, WHICH PROVIDES FOR A

PRODUCTIVE LEARNING EXPERIENCE IN A SETTING WHERE ATTENDEES CAN BE ENCOURAGED TO PARTICIPATE AND DISCUSS THEIR FEELINGS AND KNOWLEDGE ABOUT THEIR DRINKING AND DRIVING PROBLEMS.

PRESENTLY, THE PROGRAM IS OFFERED IN 60 LOCATIONS THROUGHOUT THE STATE, WHICH ALLOWS MOTORISTS RESIDING IN ANY COUNTY TO ATTEND A PROGRAM IN A PROXIMAL AREA TO HIS OR HER RESIDENCE. THE DRINKING DRIVER PROGRAM IS OFFERED THROUGH THE FACILITIES OF LOCALLY-BASED EDUCATIONAL INSTITUTIONS OR REHABILITATIONAL FACILITIES, AND AFFILIATES OF THE NATIONAL COUNCIL ON ALCOHOLISM. AND, AT EACH SITE, THE COURSE IS TAUGHT BY AN INSTRUCTIONAL TEAM -- ONE REFERRED TO AS AN INSTRUCTOR/ADMINISTRATOR, WHO HAS THE EXPERIENCE AND COMPETENCY TO PERFORM GENERAL PROGRAM ADMINISTRATION AND TO OFFER BASIC TRAFFIC SAFETY EDUCATION; AND THE SECOND IS AN INSTRUCTOR/COUNSELOR, WHO HAS THE EXPERIENCE AND COMPETENCY TO OFFER ALCOHOLISM EDUCATION AND COUNSELING. THESE PROGRAM AGENTS HAVE ALL BEEN APPROVED BY THE DEPARTMENT OF MOTOR VEHICLES AND ARE UNDER CONTRACT WITH US. MONITORING OF PROGRAMS AND INSTRUCTOR PRESENTATIONS IS ACCOMPLISHED ON AN ONGOING BASIS BY DRIVER IMPROVEMENT ANALYSTS OF THE DEPARTMENT'S DIVISION OF SAFETY PROGRAM COORDINATION.

MOST MOTORISTS PARTICIPATING IN THE PROGRAM ARE SATISFACTORILY COMPLETED AT THE END OF THE SEVEN WEEK/SIXTEEN HOUR COURSE. AT THE TIME OF COMPLETION, THEIR REGULAR DRIVER'S LICENSE IS RESTORED BY THE DEPARTMENT. IN ADDITION, ANY FINES PAID TO THE COURTS AT THE TIME OF CONVICTION ARE REFUNDED TO THE MOTORIST WHO SATISFACTORILY COMPLETES THE PROGRAM.

THE SECOND PHASE OF THE DRINKING DRIVER PROGRAM DEALS WITH ALCOHOL REHABILITATION -- PROMPT REFERRALS TO PROFESSIONAL COUNSELORS AND REHABILITATIVE PROGRAMS. ACCORDINGLY, BUILT INTO THE PROGRAM MODEL IS AN INNOVATIVE MECHANISM FOR SCREENING, EVALUATION, AND REFERRAL OF

MOTORISTS FOR TREATMENT OF ALCOHOL PROBLEMS. THIS PHASE OF THE PROGRAM IS GENERALLY INITIATED WHEN, DURING THE SEVEN-WEEK CLASSROOM PHASE, THE INSTRUCTOR/COUNSELOR, BASED ON CLASSROOM PARTICIPATION, ONE-ON-ONE DISCUSSIONS, WRITING ASSIGNMENTS, ALCOHOL SCREENING TESTS -- AND A NUMBER OF OTHER AIDS -- DETERMINES THAT THE MOTORIST MAY BE IN NEED OF TREATMENT FOR ALCOHOLISM OR ALCOHOLISM COUNSELING. THE INSTRUCTOR/COUNSELOR THEN ARRANGES AN EVALUATION INTERVIEW FOR THE MOTORIST WITH A LICENSED CLINICIAN AFFILIATED WITH AN AGENCY CERTIFIED BY THE NEW YORK STATE DIVISION OF ALCOHOLISM AND ALCOHOL ABUSE. IF EVALUATION INDICATES THAT THE INDIVIDUAL IS IN NEED OF TREATMENT OR COUNSELING, HE WILL BE REFERRED TO AN APPROPRIATE AGENCY TO PARTICIPATE IN A PROGRAM OF ALCOHOL REHABILITATION. TO DATE, IT IS ESTIMATED THAT 20% OF ALL DRINKING DRIVER PROGRAM ATTENDEES HAVE BEEN INVOLVED IN THIS ALCOHOL REHABILITATION/INTERVENTION PHASE OF THE PROGRAM.

NEEDLESS TO SAY, THE SCREENING PROCESS AND REFERRAL COMPONENTS ARE AN INTEGRAL PART OF THE PROGRAM. IT WAS RECOGNIZED THAT ADVANCED OR SPECIALIZED TRAINING OF INSTRUCTORS PERFORMING THE SCREENING AND REFERRAL FUNCTIONS WAS NECESSARY TO ASSURE THAT WE WERE OFFERING THE POTENTIAL FOR ALCOHOL REHABILITATION TO ALL MOTORISTS; NOT ONLY THE ALCOHOLIC, BUT THE BEGINNING PROBLEM DRINKER WHO IS OFTEN DIFFICULT TO IDENTIFY. WITH THIS OBJECTIVE IN MIND, TWENTY-ONE STAFF TRAINING SEMINARS, ATTENDED BY OVER 250 INSTRUCTORS, WERE RECENTLY HELD ACROSS NEW YORK STATE TO UPGRADE THE SCREENING PROCESS TOWARDS INCREASING THE LEVEL OF SKILL, AND EFFECTING MORE QUALITY OR APPROPRIATE REFERRALS. RELATED TO THIS HAS BEEN THE DEVELOPMENT OF STANDARDIZED, OBJECTIVE CRITERIA FOR DETERMINING THOSE MOTORISTS TO BE REFERRED FOR EVALUATION. PERSONNEL FROM THE STATE DIVISION OF ALCOHOLISM AND ALCOHOL ABUSE PROVIDED THE TRAINING TO OUR INSTRUCTORS THROUGH A GRANT AWARD FROM NHTSA.

As I indicated earlier, the Division of Alcoholism and Alcohol Abuse has worked closely with Motor Vehicles in the conduct of the alcohol use assessment, referral for evaluation and treatment elements of the Program. They have gone on record in supporting the Program as one of the best early identification methods available today, towards treating the pre-problem drinker, in that the Program provides the opportunity for intervention -- identification and rehabilitative treatment while support systems such as job and family are still intact, which additionally results in a significant reduction in treatment costs -- short-term,out-patient counseling and/or treatment versus in-patient/detoxification, or long-term treatment.

As indicated earlier, most motorists entering the Program -- approximately 80 percent of the total program population -- are also eligible for issuance of a conditional or "high-priority" driving license. This license allows the holder to drive to and from work and during work if the job requires; to and from the Drinking Driver Program; to and from the treatment agency, if the motorist is referred for treatment; to and from class at any accredited educational institution; and, during an assigned daytime period of three consecutive hours on a non-work day, which allows for attending to any personal necessities. Every motorist has the above stipulations printed on a conditional license attachment. If he drives out of the limits of the license, or fails to attend any and all classes, or fails to attend treatment sessions if applicable, -- he is dropped from the program, the conditional license is revoked, and the original suspension or revocation period is reinstated. In other words, the traditional penalities for DWAI and DWI charges are reimposed -- they are revoked or suspended, <u>period</u>. In addition, where a motorist has received a

CONDITIONAL DISCHARGE FROM THE COURT, THE DEPARTMENT OF MOTOR VEHICLES INFORMS THE COURT THAT THE MOTORIST HAS VIOLATED THE CONDITIONS OF HIS DISCHARGE BY FAILING TO SATISFACTORILY COMPLETE THE PROGRAM. THE COURT WILL THEN GENERALLY RECALL THE MOTORIST FOR RESENTENCING AND POSSIBLE LEVY OF FINES.

SOME MOTORISTS, APPROXIMATELY 13 PERCENT OF THE TOTAL PROGRAM POPULATION, ARE INVITED TO ENTER THE PROGRAM, BUT ARE DENIED THE CONDITIONAL LICENSE BECAUSE OF THEIR PAST DRIVING HISTORY. HOWEVER, MANY OF THESE MOTORISTS STILL ELECT TO ENROLL IN THE PROGRAM, BECAUSE SATISFACTORY COMPLETION WILL ALLOW THEM THE OPPORTUNITY FOR EARLY RESTORATION OF THEIR FULL DRIVING PRIVILEGES AND REFUND OF COURT FINES.

INCIDENTALLY, ALL COSTS FOR THE PROGRAM ARE THE RESPONSIBILITY OF THE PARTICIPANT, INCLUDING AN ADMINISTRATIVE FEE PAID TO THE DEPARTMENT OF MOTOR VEHICLES ($30), A FEE PAID DIRECTLY TO THE AGENCY CONDUCTING THE PROGRAM -- EITHER $55 OR $75, DEPENDING ON COUNTY POPULATION, AND ALL COSTS INCIDENTAL TO THE EVALUATION AND TREATMENT ASPECTS OF THE PROGRAM.

FEES COLLECTED BY THE DEPARTMENT OF MOTOR VEHICLES ARE USED TO OFFSET SUCH COSTS AS DISTRICT OFFICE PERSONNEL PROCESSING OF MOTORISTS INTO THE PROGRAM, COMPUTER TIME FOR LICENSE PROCESSING, EXPENSES INCURRED IN THE ONGOING MONITORING OF PROGRAMS, AND COORDINATION AND ADMINISTRATIVE FUNCTIONS PERFORMED BY DEPARTMENTAL PERSONNEL. DEPARTMENTALLY, IT'S A BREAK-EVEN PROPOSITION -- BUT THE BIG PAYOFF IS IN HIGHWAY SAFETY AND THE OPPORTUNITY THIS PROGRAM PROVIDES FOR IDENTIFICATION AND TREATMENT OF THE PROBLEM DRINKER.

TO GIVE YOU AN IDEA OF THE CLIENT VOLUME -- IN THE FIRST THREE AND ONE-HALF YEARS OF OPERATION, APPROXIMATELY 77,000 MOTORISTS HAVE PARTICIPATED IN THE PROGRAM, AND NEARLY 20% OR 15,000 PEOPLE HAVE BEEN TREATED FOR ALCOHOL-RELATED PROBLEMS. QUITE FRANKLY, THE NUMBERS EVEN ASTONISH ME, ESPECIALLY SINCE THE PROGRAM IS VOLUNTARY, NOT MANDATORY.

EVALUATION

How effectively is the Program working? To date, our analysis and evaluation have focused on the highway safety aspects of the Program. We have attempted to answer the following questions:

First, two general questions:

- What effect has the Program had on the conviction rate of program participants?

AND

- What effect has the Program had on the accident involvement rate of the program participants?

And, secondly, two specific questions:

- What effect has the Program had on the conviction rates for alcohol-related driving offenses of program participants?

AND

- What effect has the Program had on the conviction rates for non-alcohol-related driving offenses of program participants?

In order to answer the general questions, we compared the driving records of two groups of drivers:

- Drivers exposed to the Program between October, 1975 and December, 1976.

  compared with

- Drivers who were eligible to renew a license in September and October of 1978- a sample of the licensed driver population.

Ideally, these comparisons would have been made to a non-treated control group, randomly selected from drivers eligible for the Program. However, since New York State law does not presently allow for the creation of a non-treated control group, we were required to seek an alternative for comparative purposes. I would like to note that we are in the process of amending regulations to provide for establishing non-treatment control groups for comparative evaluation purposes.

HOWEVER, EVEN WITH THE USE OF AN ALTERNATIVE NON-TREATED CONTROL GROUP, THE EVALUATION WHICH I AM ABOUT TO DISCUSS IS CREDIBLE AND THE RESULTS SIGNIFICANT.

THE SAMPLE OF THE GENERAL POPULATION WAS SELECTED IN THE FOLLOWING MANNER. THE ONLY CRITERIA FOR INCLUSION IN THE SAMPLE WAS THAT THE DRIVER MUST HAVE A LICENSE EXPIRING IN SEPTEMBER OR OCTOBER OF 1978. WITH NO KNOWN EVIDENCE THAT LINKS EITHER MONTH OR BIRTH OR ELIGIBILITY TO RENEW A DRIVERS LICENSE TO QUALITY OF DRIVING, THIS CRITERIA SHOULD HAVE PRODUCED A FAIRLY REPRESENTATIVE SAMPLE OF DRIVING HISTORIES.

THESE RECORDS WERE THEN PARTITIONED INTO TWO EIGHTEEN MONTH PERIODS:

- SEPTEMBER AND OCTOBER, 1974 THROUGH MARCH AND APRIL OF 1976;

AND

- APRIL AND MAY, 1976 THROUGH SEPTEMBER AND OCTOBER OF 1977.

THE DRIVING EVENTS OCCURRING IN THESE TIME PERIODS WERE CROSS TABULATED. THE DATA COLLECTION PERIODS FOR THIS REPRESENTATIVE SAMPLE ROUGHLY COINCIDE WITH THE DATA COLLECTION PERIODS FOR THE PROGRAM PARTICIPANT SAMPLE. IN CHART 1, WE CAN SEE THAT THESE DRIVER HISTORY DATA WERE COLLECTED IN CONCURRENT PERIODS.

THE FIRST COMPARISON CONCERNS CONVICTIONS. (REFER TO CHART 2) ALL DRIVERS WHO WERE EXPOSED TO THE PROGRAM HAD AT LEAST ONE CONVICTION DURING THE EIGHTEEN MONTHS BEFORE THEY ENTERED THE PROGRAM. THEREFORE, A COMPARISON OF DDP DRIVERS' CONVICTIONS WILL BE LIMITED TO DRIVERS IN THE REPRESENTATIVE SAMPLE WHO HAD AT LEAST ONE CONVICTION IN THE FIRST EIGHTEEN MONTH PERIOD.

OF THE 408,645 DRIVERS IN THE SAMPLE, THERE WERE 56,223 DRIVERS WHO HAD AT LEAST ONE CONVICTION DURING THE FIRST EIGHTEEN MONTH PERIOD.

THESE DRIVERS HAD A TOTAL OF 71,924 CONVICTIONS - A RATE OF 1.28 CONVICTIONS PER DRIVER.

THE 16,178 DRIVERS IN THE DDP GROUP HAD 27,238 CONVICTIONS IN THE EIGHTEEN MONTHS BEFORE ENTERING THE PROGRAM - A RATE OF 1.68 CONVICTIONS PER DRIVER.

DURING THE SECOND EIGHTEEN MONTH PERIOD, THE DRIVERS IN THE POPULATION SAMPLE GROUP HAD 23,669 CONVICTIONS - A RATE OF .42 CONVICTIONS PER DRIVER.

THE DDP GROUP DRIVERS HAD 5,973 CONVICTIONS IN THE EIGHTEEN MONTHS SUBSEQUENT TO ATTENDING THE PROGRAM - A RATE OF .37 CONVICTIONS PER DRIVER

THIS COMPARISON RESULTED IN THE FOLLOWING FINDINGS:

- THE DDP GROUP HAD A SIGNIFICANTLY HIGHER RATE OF CONVICTION DURING THE EIGHTEEN MONTHS PRIOR TO PROGRAM PARTICIPATION THAN THE DRIVER POPULATION GROUP DURING A CONCURRENT PERIOD;

AND

- THE DDP GROUP HAD A SIGNIFICANTLY LOWER CONVICTION RATE IN THE EIGHTEEN MONTHS SUBSEQUENT TO PARTICIPATION THAN THE DRIVER POPULATION GROUP DURING A CONCURRENT PERIOD.

THESE FINDINGS SUGGEST, AT LEAST IN TERMS OF TOTAL OFFICIALLY RECORDED CONVICTIONS, THAT DRIVERS PARTICIPATING IN THE PROGRAM HAVE MODIFIED SOME OF THEIR DRIVING BEHAVIORS AS A RESULT OF THEIR EXPOSURE TO THE PROGRAM.

IT IS ALSO POSSIBLE TO DRAW A SOMEWHAT SIMILAR COMPARISON FOR ACCIDENT EVENTS. (REFER TO CHART 3)

UNLIKE CONVICTIONS, HAVING AN ACCIDENT IS NOT A PREREQUISITE FOR ATTENDING THE DRINKING DRIVER PROGRAM. THEREFORE, IN COMPARING THE

ACCIDENT RATES OF THE DDP AND THE DRIVER POPULATION SAMPLE, WE USED THE ENTIRE SAMPLE OF 408,645 DRIVERS.

IN THE REPRESENTATIVE SAMPLE, THE 408,645 DRIVERS WERE INVOLVED IN 70,835 ACCIDENTS IN THE FIRST EIGHTEEN MONTH PERIODS (CONCURRENT WITH THE PRE-PARTICIPATION PERIOD OF THE DDP GROUP) - AN ACCIDENT RATE PER DRIVER OF .17.

THE DDP PARTICIPANT GROUP WAS INVOLVED IN 10,741 ACCIDENTS IN THE EIGHTEEN MONTHS BEFORE ATTENDING THE PROGRAM - AN ACCIDENT PER DRIVER RATE OF .66.

THE DRIVERS IN THE POPULATION SAMPLE HAD 58,527 ACCIDENTS IN THE SECOND EIGHTEEN MONTH PERIOD (CONCURRENT WITH THE SUBSEQUENT TO PARTICIPATION PERIOD) AN ACCIDENT PER DRIVER RATE OF .14.

THE PROGRAM PARTICIPANT GROUP HAD 4,626 ACCIDENTS IN THE EIGHTEEN MONTHS SUBSEQUENT TO ATTENDING THE PROGRAM - AN ACCIDENT PER DRIVER RATE OF .28.

THIS COMPARISON SUGGESTS THE FOLLOWING FINDINGS:

- BOTH GROUPS SHOW A STATISTICALLY SIGNIFICANT REDUCTION IN THE NUMBER OF ACCIDENTS FROM ONE EIGHTEEN MONTH PERIOD TO AN IMMEDIATELY SUBSEQUENT EIGHTEEN MONTH PERIOD.

(AS SHOWN IN OTHER STUDIES, IT IS RECOGNIZED THAT JUST THE EXPERIENCE OF HAVING AN ACCIDENT, SIMILAR TO BEING ARRESTED AND CONVICTED, DOES HAVE SOME EFFECT IN REDUCING FUTURE ACCIDENTS.)

SECONDLY, THIS COMPARISON SUGGESTS THE FINDING THAT:

- THE DRINKING DRIVER PROGRAM PARTICIPANT GROUP HAS A POST-TREATMENT ACCIDENT RATE THAT IS TWICE AS HIGH AS THE DRIVER POPULATION BASED SAMPLE.

THESE FINDINGS SUGGEST THAT THE PROGRAM HAS A POSITIVE IMPACT ON THE ACCIDENT INVOLVEMENT OF PERSONS PARTICIPATING IN THE PROGRAM.

THAT IS, THAT DRINKING DRIVERS EXPOSED TO THE PROGRAM HAD SIGNIFICANTLY FEWER ACCIDENTS IN THE EIGHTEEN MONTHS SUBSEQUENT TO EXPOSURE TO THE PROGRAM THAN THEY DID IN THE EIGHTEEN MONTHS BEFORE ATTENDING THE PROGRAM.

HOWEVER, EVEN WITH THIS REDUCTION, IT IS APPARENT THAT AS A GROUP, THESE DRIVERS STILL HAVE A HIGHER ACCIDENT POTENTIAL THAN THE POPULATION AS A WHOLE.

BEFORE GOING FURTHER, I WANT TO STATE THAT WE RECOGNIZE THAT THESE FINDINGS ARE SUBJECT TO MANY LIMITATIONS BECAUSE OF DIFFERENCES BETWEEN THE DDP PARTICIPANTS AND THE LICENSED DRIVER POPULATION AS A WHOLE. DIFFERENCES EXIST IN MEAN AGE, PROPORTIONS OF MALE AND FEMALE, AND AVERAGE REPORTED MILEAGE.

EVEN TAKING ALL OF THESE DIFFERENCES INTO ACCOUNT, WE BELIEVE THAT WE ARE JUSTIFIED IN COMING TO ONE IMPORTANT CONCLUSION: THE DRINKING DRIVER PROGRAM IS MEETING ITS MOST IMPORTANT STATED OBJECTIVE. THIS OBJECTIVE IS THAT A PROGRAM OF EDUCATION AND REHABILITATION SHOULD REDUCE THE RATE OR NUMBER OF ACCIDENTS OF THOSE DRIVERS WHO WERE EXPOSED TO THE PROGRAM.

OUR INTEREST IN THIS PROGRAM EXTENDS BEYOND THIS SINGLE OBJECTIVE. AS I INDICATED, WE ARE ALSO INTERESTED IN THE IMPACT OF THE PROGRAM ON THE SUBSEQUENT TO EXPOSURE ACCUMULATION OF ALCOHOL-RELATED CONVICTIONS, AND SUBSEQUENT TO EXPOSURE ACCUMULATION OF CONVICTIONS FOR OTHER MOVING VIOLATIONS.

IN THE ABSENCE OF A CONTROL GROUP, WE HAVE COMPARED THE PRE-TREATMENT, DURING TREATMENT, AND POST-TREATMENT DRIVING RECORDS OF VARIOUS SUB-GROUPS OF PROGRAM PARTICIPANTS. THESE SUB-GROUPS WERE FORMED ON THE BASIS OF WHETHER THE PARTICIPANTS HAD OR DID NOT HAVE A CONDITIONAL LICENSE, DID OR DID NOT COMPLETE THE PROGRAM, AND WHETHER OR NOT A REFERRAL WAS MADE FOR EVALUATION AND DIAGNOSIS OF A PERCEIVED ALCOHOL ABUSE PROBLEM. (REFER TO CHART 4)

THE 16,178 PROGRAM PARTICIPANTS HAD 1,189 ALCOHOL-RELATED CONVICTIONS IN THE EIGHTEEN MONTHS PRIOR TO ENTERING THE PROGRAM. THIS TOTAL DOES NOT INCLUDE THE CONVICTION THAT BROUGHT THEM TO THE ATTENTION OF THE PROGRAM. IN THE EIGHTEEN MONTHS SUBSEQUENT TO ATTENDING THE PROGRAM, THESE SAME DRIVERS ACCUMULATED 991 ALCOHOL-RELATED CONVICTIONS.

THE REDUCTION IN THE NUMBER OF CONVICTIONS FROM THE PRE-TREATMENT PERIOD TO THE POST-TREATMENT PERIOD IS STATISTICALLY SIGNIFICANT.

THE DRINKING DRIVER PROGRAM SEEMS TO BE EFFECTIVE IN REDUCING THE NUMBER OF CONVICTIONS AND BY IMPLICATION, ARRESTS FOR ALCOHOL-RELATED TRAFFIC OFFENSES OF THOSE PERSONS WHO ARE EXPOSED TO THE PROGRAM.

LIKE ALL EDUCATIONAL EFFORTS, IT IS REASONABLE TO EXPECT THAT ANY EFFECTS OF THE EFFORT WILL BE DEGRADED WITH TIME. AN INSPECTION OF DRIVER RECORD "SNAPSHOTS" OF THESE SAME DRIVERS USING SIX MONTH AND TWELVE MONTH PRE-TREATMENT AND POST-TREATMENT PERIODS, AS WELL AS THE EIGHTEEN MONTH INTERVAL MENTIONED ABOVE, SUGGESTS THAT THIS PROGRAM IMPACT MAY LAST AS LONG AS TWO YEARS.

HOWEVER, WITH THE ABSENCE OF AN UNTREATED CONTROL GROUP, THIS RESULT CAN ONLY BE CONSIDERED TO BE A POSITIVE INDICATOR OF PROGRAM IMPACT AND NOT A DEFINITIVE STATEMENT OF PROGRAM EFFECTIVENESS.

WE WERE ALSO INTERESTED IN DETERMINING THE IMPACT OF THE DRINKING DRIVER PROGRAM ON THE ACCUMULATION OF NON-ALCOHOL-RELATED CONVICTIONS BY THE DRIVERS EXPOSED TO THE PROGRAM. WHILE WE HAD EXPECTED TO MEASURE A REDUCTION IN THE ACCUMULATION OF ALCOHOL-RELATED CONVICTIONS, WE HAD NOT EXPECTED TO SEE A SIGNIFICANT REDUCTION IN NON-ALCOHOL-RELATED CONVICTIONS. HOWEVER, THIS WAS NOT THE CASE, AND FRANKLY, OUR FINDINGS WERE UNEXPECTED. (REFER TO CHART 5)

THE DRIVING RECORDS OF ALL THE DRIVERS EXPOSED TO THE PROGRAM SHOW A SIGNIFICANT REDUCTION IN THE ACCUMULATION OF NON-ALCOHOL-RELATED

CONVICTIONS IN THE EIGHTEEN MONTHS SUBSEQUENT TO PARTICIPATION COMPARED TO THE EIGHTEEN MONTHS PRIOR TO PARTICIPATION.

BEFORE I CONCLUDE, I WANT TO STATE THAT WE ARE WELL AWARE OF THE DEFICIENCIES OF OUR EVALUATION EFFORT TO DATE -- DEFICIENCIES SUCH AS:

- THE ABSENCE OF AN UNTREATED CONTROL GROUP;
- OUR INABILITY TO CONTROL FOR A VARIETY OF DEMOGRAPHIC DIFFERENCES BETWEEN VARIOUS DRIVER GROUPS, AND;
- OUR INABILITY TO COMMENT ON EFFECTIVENESS OF OUR REFERRAL COMPONENT.

THESE ARE PROBLEMS THAT WE ARE NOW ADDRESSING, SOME IN CONJUNCTION WITH THE DIVISION OF ALCOHOLISM AND ALCOHOL ABUSE, AND WE ANTICIPATE RESOLVING THEM IN THE NEAR FUTURE.

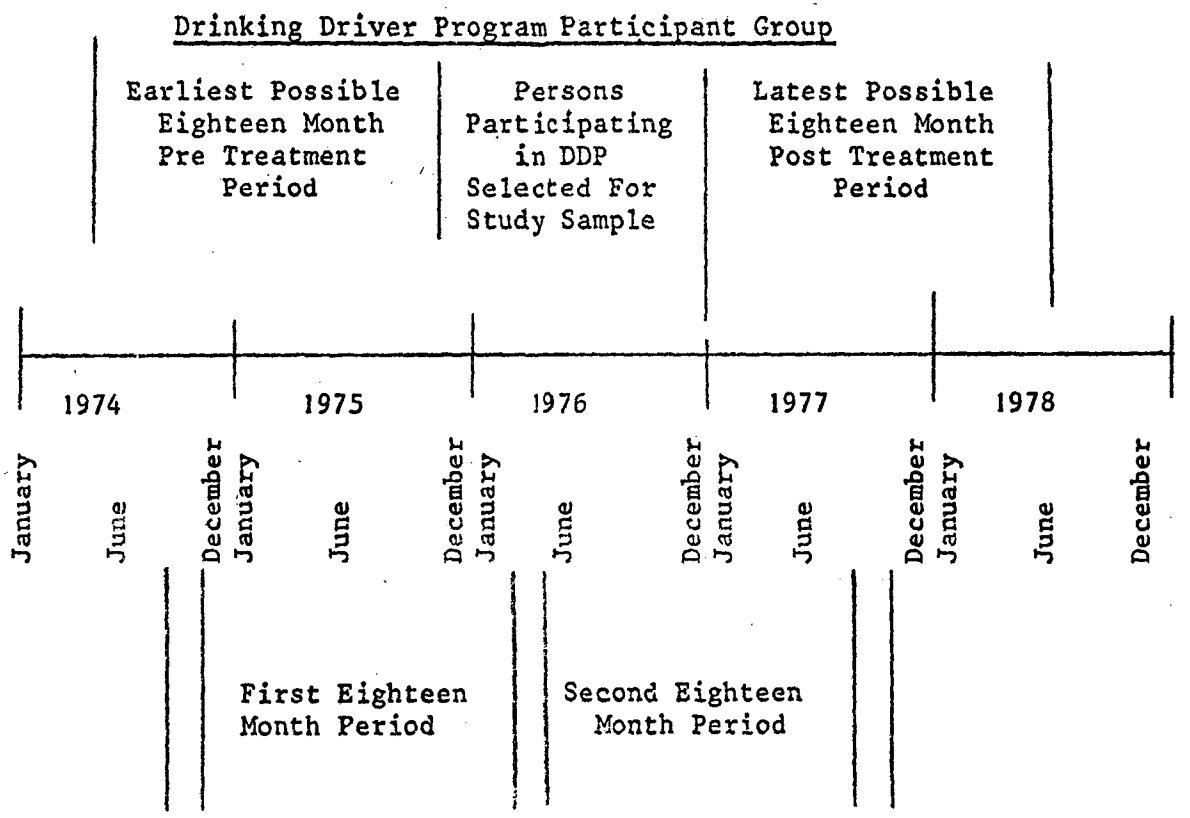
WE ARE FULLY COMMITTED TO THE UNDERTAKING OF A COMPLETE AND THOROUGH EVALUATION OF THIS PROGRAM. WE DO NOT BELIEVE THAT THE PROGRAM MODEL AS DESCRIBED IS QUOTE, "CAST IN CONCRETE," AND WE WILL CONTINUALLY REVIEW THE PROGRAM MODEL, WHICH MAY RESULT IN MODIFICATION AS MORE AND BETTER INFORMATION IS MADE AVAILABLE.

AGAIN, I WANT TO THANK YOU FOR THIS OPPORTUNITY TO REVIEW THE DRINKING DRIVER PROGRAM WITH YOU, AND SHARE OUR PRELIMINARY EVALUATION FINDINGS.

TO DATE, WE BELIEVE THAT THE APPROACH AND POTENTIAL OFFERED BY NEW YORK STATE'S PROGRAM IS THE PROPER DIRECTION IN THE EDUCATION AND REHABILITATION OF THE CONVICTED DRINKING DRIVER.

CHART 1

DATA COLLECTION PERIODS FOR THE DRINKING DRIVER PROGRAM PARTICIPANTS AND A SAMPLE OF THE LICENSED DRIVER POPULATION



DRIVERS RENEWING A LICENSE IN SEPTEMBER, 1978 AND OCTOBER, 1978 SELECTED AS A COMPARISON GROUP

CHART 2

A COMPARISON OF CONVICTION RATES
FOR DRINKING DRIVER PROGRAM
PARTICIPANTS AND A REPRESENTATIVE
SAMPLE OF LICENSED DRIVERS

		First Eighteen Months		Second Eighteen Months	
	Number of Drivers	Convictions	Rate Per Driver	Convictions	Rate Per Driver
DDP Group	16,178	27,238	1.68	5,973	.37
Driver Population Sample *	56,223	71,924	1.28	23,669	.42

* Drivers with at least one conviction in the first eighteen month period

CHART 3

A COMPARISON OF ACCIDENT RATES FOR DRINKING DRIVER PROGRAM PARTICIPANTS AND A REPRESENTATIVE SAMPLE OF LICENSED DRIVERS

		First Eighteen Months		Second Eighteen Months	
	Number of Drivers	Accidents	Rate Per Driver	Accidents	Rate Per Driver
DDP Group	16,178	10,741	.66	4,626	.28
Driver Population Sample	408,645	70,835	.17	58,527	.14

CHART 4

ALCOHOL-RELATED CONVICTIONS FOR VARIOUS DRINKING DRIVER REHABILITATION PROGRAM PARTICIPANT GROUPS FOR AN EIGHTEEN MONTH PRE TREATMENT AND POST TREATMENT PERIOD

	Status Within Program				Pre-Treatment*		During Treatment		Post Treatment	
Driver Group	Conditional License	Completion	Referral	Number of Drivers	AR Convictions	Rate Per Driver	AR Convictions	Rate Per Driver	AR Convictions	Rate Per Driver
1	Yes	Yes	No	12,194	769	.063	15	.001	676	.055
2	Yes	Yes	Yes	3,211	328	.102	5	.002	289	.090
3	Yes	No	No	508	60	.118	2	.004	6	.012
4	Yes	No	Yes	59	1	.017	1	.017	1	.017
5	No	Yes	No	138	20	.145	0	0	9	.065
6	No	Yes	Yes	53	11	.208	0	0	6	.113
7	No	No	No	15	0	.000	0	0	4	.267
Total				16,178	1,189	.073	23	.001	991	.061

*Not including the program related conviction.

CHART 5

NON-ALCOHOL-RELATED CONVICTIONS FOR VARIOUS DRINKING DRIVER REHABILITATION PROGRAM PARTICIPANT GROUPS FOR AN EIGHTEEN MONTH *PRE TREATMENT AND POST TREATMENT PERIOD

Driver Group	Status Within Program: Conditional License	Completion	Referral	Pre Treatment: Number of Drivers	Convictions	Rate Per Driver	During Treatment: Convictions	Rate Per Driver	Post Treatment: Convictions	Rate Per Driver
1	Yes	Yes	No	12,194	7,148	.586	185	.105	3,665	.300*
2	Yes	Yes	Yes	3,211	2,035	.634	68	.021	1,029	.320*
3	Yes	No	No	508	474	.933	28	.055	202	.398*
4	Yes	No	Yes	59	73	1.237	11	.186	20	.3 9*
5	No	Yes	No	138	90	.652	1	.007	46	.333*
6	No	Yes	Yes	53	37	.698	1	.019	13	.245*
7	No	No	No	15	17	1.133	1	.067	7	.467*
Total				16,178	9,874	.610	295	.018	4,982	.308

* Significant reduction

*U.S. GOVERNMENT PRINTING OFFICE: 1979 O-630-982/2739