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NEW HAMPSHIRE ALCOHOL SAFETY ACTION PROJECT  
REHABILITATING DRINKING DRIVERS: AN ANALYSIS OF  
THREE YEARS OF ACTIVITIES OF THE NEW HAMPSHIRE  
ALCOHOL SAFETY ACTION PROJECT

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16. Abstract <p>The rehabilitation efforts of the Alcohol Safety Action Project were initiated to provide people convicted of driving while intoxicated (DWI) with retraining and resources for dealing with problems related to drinking and driving. From mid-1972 through mid-1975, a total of 4,388 people were referred for screening to determine their eligibility to attend the Driver Retraining Schools. Of those referred, 2,160 people were selected and 1,817 were eventually graduated from the schools during the period.</p> <p>To evaluate the program's effectiveness, the subsequent accident involvement and DWI rearrest records of those referred were compared with groups of not-referred people.</p> <p>The results indicated that the total number of subsequent accidents and DWI rearrests were less for the referred groups than they were for the not-referred groups. The differences that were found occurred within the same and subsequent year after conviction but were not present in later years.</p> <p>Because of possible differences that may have existed between the groups initially, these findings, while not conclusively proving the effectiveness of the schools, do indicate that the rehabilitation experience can reduce the incidence of subsequent accidents and DWI rearrests. The cost of processing an individual who attended the Driver Retraining School was \$69.57.</p>			
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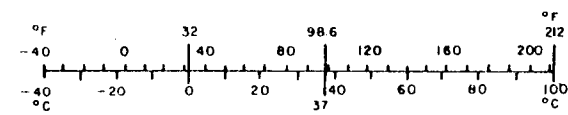
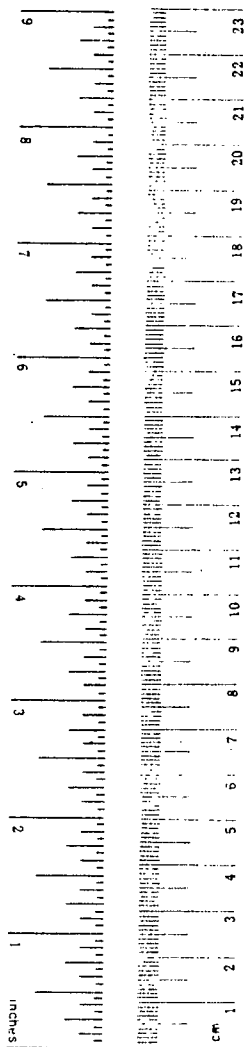
## METRIC CONVERSION FACTORS

### Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
<b>LENGTH</b>				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	6.5	square centimeters	cm <sup>2</sup>
ft <sup>2</sup>	square feet	0.09	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yards	0.8	square meters	m <sup>2</sup>
mi <sup>2</sup>	square miles	2.6	square kilometers	km <sup>2</sup>
	acres	0.4	hectares	ha
<b>MASS (weight)</b>				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
<b>VOLUME</b>				
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 <sup>3</sup>	cubic feet	0.03	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.76	cubic meters	m <sup>3</sup>
<b>TEMPERATURE (exact)</b>				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

### Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
<b>LENGTH</b>				
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
<b>AREA</b>				
cm <sup>2</sup>	square centimeters	0.16	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	1.2	square yards	yd <sup>2</sup>
km <sup>2</sup>	square kilometers	0.4	square miles	mi <sup>2</sup>
ha	hectares (10,000 m <sup>2</sup> )	2.5	acres	
<b>MASS (weight)</b>				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
<b>VOLUME</b>				
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 <sup>3</sup>	cubic meters	35	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.3	cubic yards	yd <sup>3</sup>
<b>TEMPERATURE (exact)</b>				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



\* On 1-2-64 (revised). For other exact conversions, and more detailed tables, see GPO (Gen. Publ. Div.), Dept. of Weights and Measures, Proc. 2-25-50 (Metric No. 1) 1-10-296.

## FOREWORD

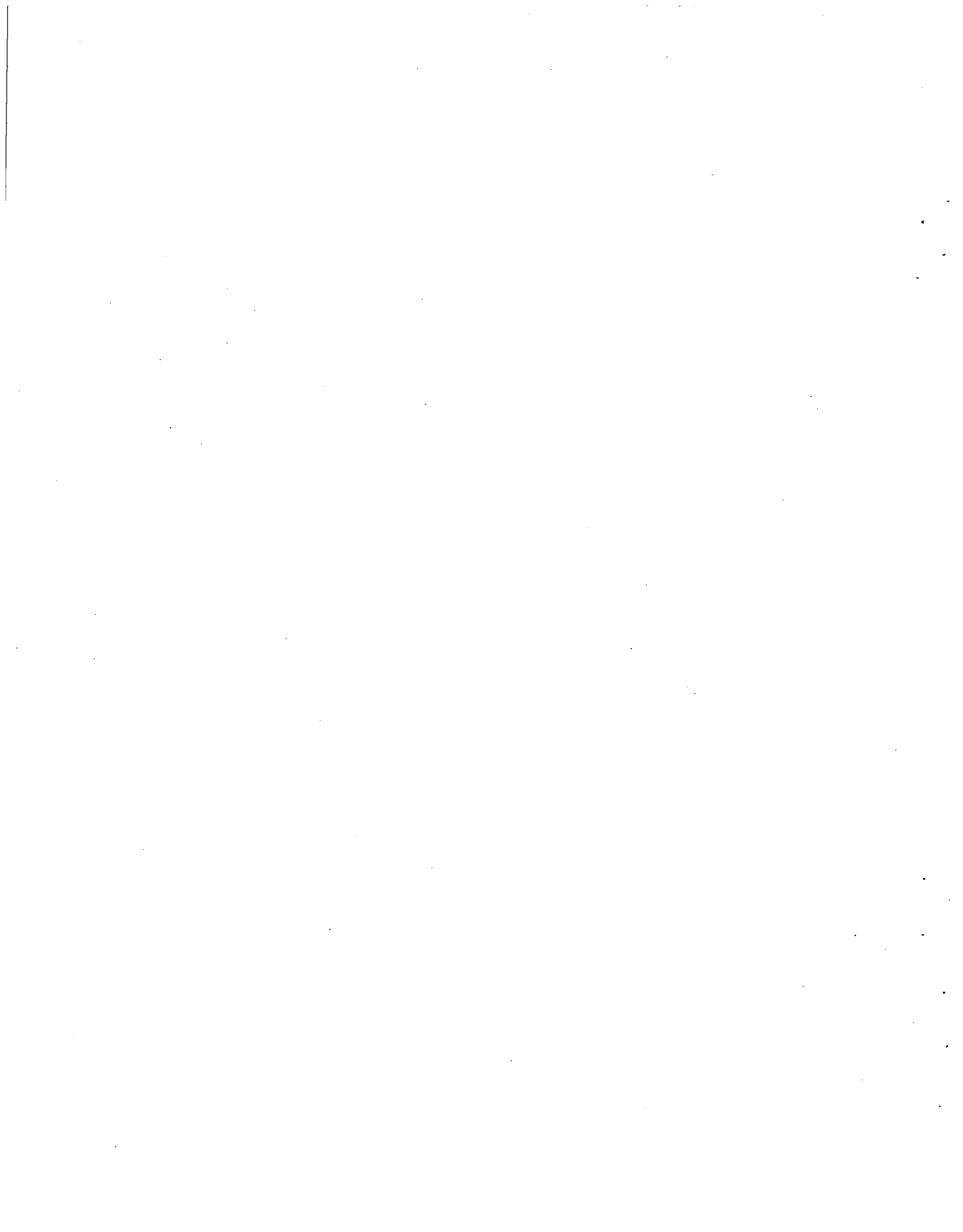
The New Hampshire Alcohol Safety Action Project (ASAP) was a statewide project which had as its overall objective the reduction of alcohol related fatal and injury producing motor vehicle accidents. Funding for the ASAP came from the Office of Driver and Pedestrian Programs of the National Highway Traffic Safety Administration and from the State of New Hampshire.

The prime contractor for the ASAP was the New Hampshire Program on Alcohol and Drug Abuse of the Division of Public Health Services. Other participating agencies and organizations included the Department of Safety, the New Hampshire State Police, various local police departments, the Division of Motor Vehicles, the Bureau of Consumer Protection Services, the New Hampshire Highway Safety Agency, Dawson Advertising, Inc., and Dunlap and Associates, Inc.

The ASAP Project Director was John M. Muir. The rehabilitation activities within the project have been coordinated by Mr. David Deans, Ms. Carol Conboy and most recently by Mr. Paul Spack.

The purpose of this report is to summarize and evaluate the project's efforts from mid-1972 through mid-1975 in referring, screening and retraining people convicted of driving while intoxicated. This volume is the final report of the rehabilitation efforts for this period. Another report in the present series will analyze the expanded rehabilitation activities begun in mid-1975.

We gratefully acknowledge the cooperation of Mr. Spack and his staff Ms. Susan Miller, Ms. Pat Rainey, Ms. Karen Hawkins and Ms. Michelle Snow in providing the data for this report. We also appreciate the efforts of Mr. Muir and his staff, Mr. John Bonds, Mr. William Jacques and Mr. Edward Rosen for assisting in the analysis of the data and Ms. Lorraine Good for typing the manuscript.



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## I. DESCRIPTION OF THE ASAP REHABILITATION EFFORTS

### A. Introduction and Overview

During the planning stages of the Alcohol Safety Action Project (ASAP), a basic premise was that an overall systems approach, consisting of a series of countermeasures, could be utilized to alleviate the accident and death rate resulting from drunken driving. One of the most promising of these activities was the concept of attempting to provide rehabilitative services, of a short term duration, to individuals convicted of driving while intoxicated (DWI).

The basic approach was to provide DWI offenders with information on alcohol and its effects on the body and on driving performance, as well as with information on sources of assistance for alcohol-related problems. This information was used as a basis of personal group discussions in an attempt to encourage the participants to modify their drinking-driving behavior, and, where indicated, to seek further assistance with alcohol problems.

Four major elements comprised the rehabilitation activity area (Figure 1). The referral process provided the mechanism whereby the courts and other agencies recommended individuals for participation in the program. The screening or diagnosis provided an initial evaluation of the severity of the individual's drinking problem. The Driver Retraining School provided the informational and group discussion sessions on the problem of combining drinking with driving. Finally, the Post-ASAP Intervention referred those individuals who were evaluated as having an alcohol problem, for more extensive treatment after completion of the Driver Retraining School.

This report covers the period from the inception of the rehabilitation efforts in mid-1972 through July 1975. During this period, the program was continually refined in response to reports and evaluation. The major elements, however, remained intact.

The following sections describe each of the major elements of the rehabilitation process.

### B. Referral

Referrals to ASAP resulted primarily from the courts and secondarily from the Division of Motor Vehicles (DMV) and other state agencies (Figure 2).

In general, the court referral process began when the police stopped a vehicle and established that there was a probable cause for making a DWI arrest. The driver was then arrested and requested to take a chemical test to determine if he or she was intoxicated. The vast majority of chemical tests now administered in the state are taken on the Breathalyzer. If the driver refused to take the test, he or she was subject to the penalties specified in the implied consent law (mandatory 90 days license revocation) administered by the Division of Motor Vehicles, and is still subject to DWI prosecution. If the results of the test indicated a blood alcohol concentration of .10 or over (i.e., where the

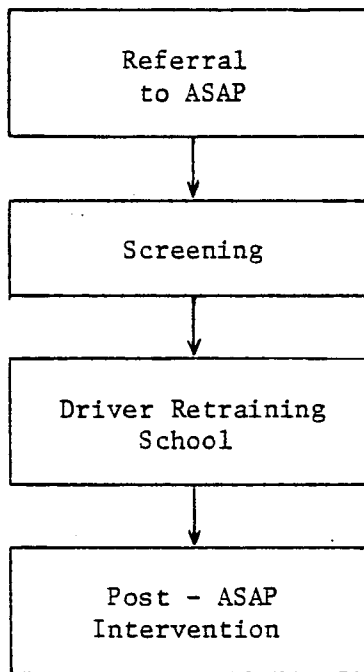


Figure 1: MAJOR ELEMENTS OF  
N. H. ASAP REHABILITATION COUNTERMEASURE

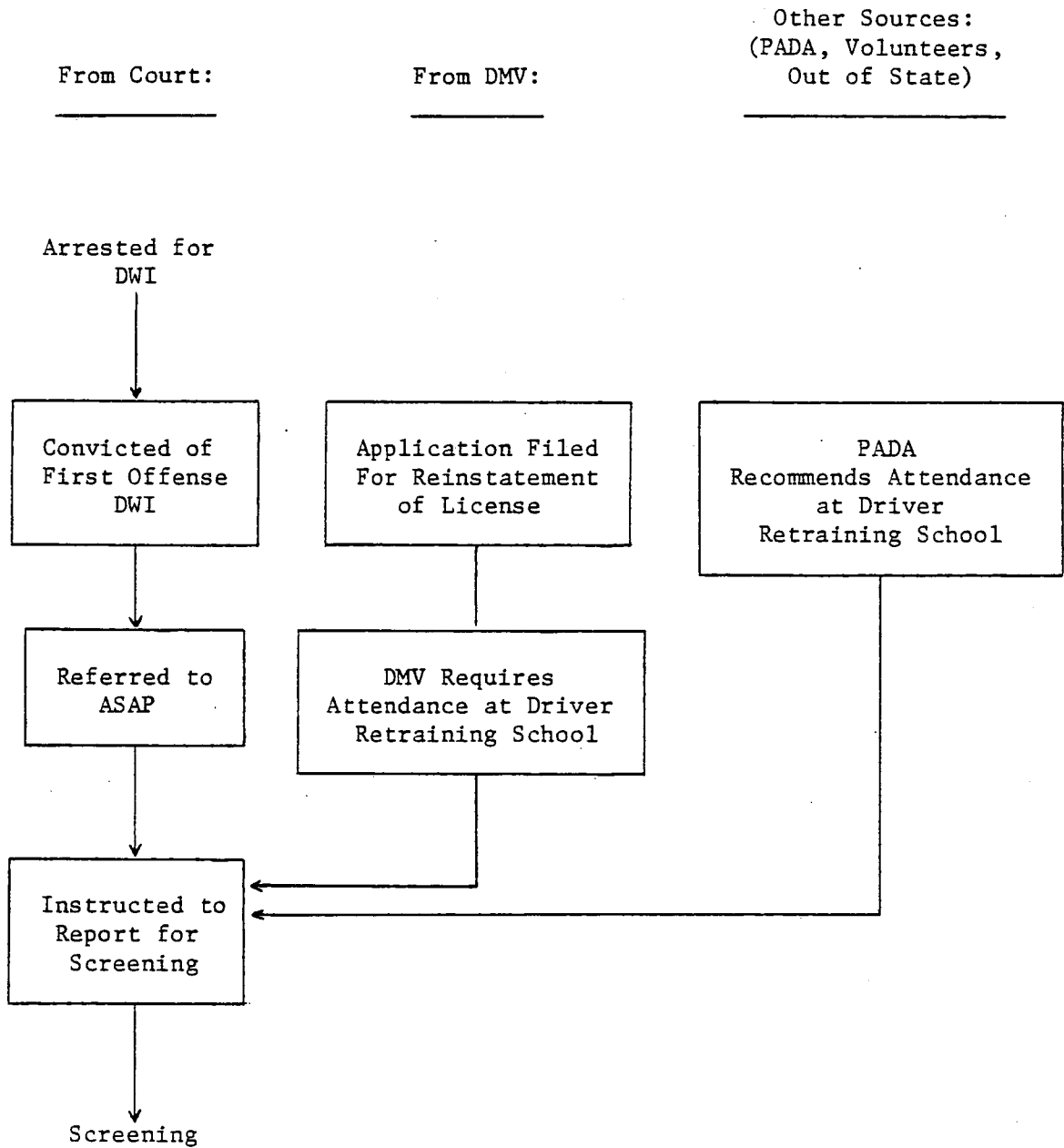


Figure 2: THE REFERRAL PROCESS

driver was at or above the prima facie level for being under the influence of intoxicating liquor),\* the driver was arraigned. A plea was entered and where required a trial was held. If the driver was found to be not guilty, he or she was released without any formal contact with ASAP. Drivers pleading or found guilty of DWI had their license revoked and, in most cases, were required to pay a fine. Most of the courts who were cooperating with the referral process employed the following sentence:

"License revoked for a minimum of 60 days or until the Medical Review Board of the Department of Health and Welfare recommends restoration of your license. Total revocation not to exceed 120 days."

DWI offenders complying with the referral procedure may have had their licenses restored after the minimum revocation period of 60 days. If they failed to comply, their licenses were revoked for the maximum 120 day period.

Several courts modified the recommended sentence, changing the 60/120 day provision to periods of 90/180 days, 60 days/6 months and 4 months/6 months. Also on occasion, a suspended jail sentence was employed to obtain driver cooperation.

The sentence is only applicable to drivers convicted of first offense DWI, since anyone convicted of a second offense faces a three year license revocation in addition to the fine and possible imprisonment. There were, however, cases where actual second offenders were convicted of first offense DWI. This came about from plea bargaining and from cases where a thorough prior record check was not initiated. For referral purposes and subsequent Driver Retraining School attendance, individuals in this category were considered as first offenders - having a prior alcohol related motor vehicle violation.

Upon conviction of the DWI, the participating court informed the offender of the referral process and the ability to regain their license within the minimum revocation period - if they appeared for the screening.

Referrals from DMV usually resulted when an individual reapplied for a license after a period of revocation that resulted from an alcohol-related driving offense. These people had not previously attended the Driver Retraining School and were required to complete the course before being granted a license.

The other state agency which referred individuals was the Program on Alcohol and Drug Abuse (PADA). Normally, this program accepted referrals from ASAP for more intensive treatment. There were, however, cases of individuals within the PADA programs who had drinking and driving problems and had not attended the Driver Retraining School. As part of their treatment, they were requested to complete the school.

In addition, referrals were received from out-of-state agencies and from other sources, the majority of which were volunteers. Referrals from DMV, PADA and from other sources were also requested to appear for the driver screening.

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\*In New Hampshire, as elsewhere, BACs in the range of .05 to .09 percent are considered supportive rather than prima facie evidence. Persons with BACs under .10 percent can be prosecuted, therefore. In practice, however, this rarely occurred.

### C. Screening

The screening process was used to identify problem drinkers who were then selected to attend the Driver Retraining School. Individuals classified as social or unidentified drinker types were not required to attend the school; they were sent literature on the problems and dangers associated with driving while intoxicated, but were not requested to appear for classes after the initial diagnosis.

When appearing for the screening, the individual was requested to take a self-administered alcohol screening test, referred to as the Mortimer/Filkins Form A, which was used to indicate the presence of a drinking problem (Figure 3). In addition, the individual's prior driving record was checked at the Division of Motor Vehicles. Based upon the obtained information, an individual was classified as a problem drinker if he/she met certain criteria established by a Medical Review Board. This board, consisting of a physician, a psychiatrist and the Rehabilitation Coordinator, was responsible for the screening criteria and for the subsequent Post-ASAP Intervention. Any one of the following criteria classified the person as a problem drinker:

- A conviction of first offense DWI and having a prior alcohol related motor vehicle violation.
- A score on the Mortimer/Filkins Form A alcohol screening test indicating evidence of a problem drinker.
- Other evidence considered as indicative of problem drinking, such as a teenager with high blood alcohol concentration (BAC) at time of arrest.

In addition, people who volunteered or who were specifically ordered by the court to attend the Driver Retraining School were also selected for school attendance.

Individuals failing to initially attend the screening session were sent follow-up letters. If there was still no response, the DMV was notified and their license revoked for the maximum period specified in the sentence.

### D. Driver Retraining School

The primary goal of the driver retraining schools (Figure 4) was to modify the drinking/driving behavior of DWI offenders. The method involved a combination of providing information on the legal, social and personal issues involved in driving while intoxicated and providing the opportunity for group discussions on the subject. These discussions attempted to develop within the individual a sense of responsibility about one's drinking and driving behavior.

The schools met for approximately two and one-half hours once a week for five consecutive weeks. Each meeting was structured so as to provide an initial presentation of information followed by a relevant movie. After a brief break, the participants engaged in a group discussion on a related topic.



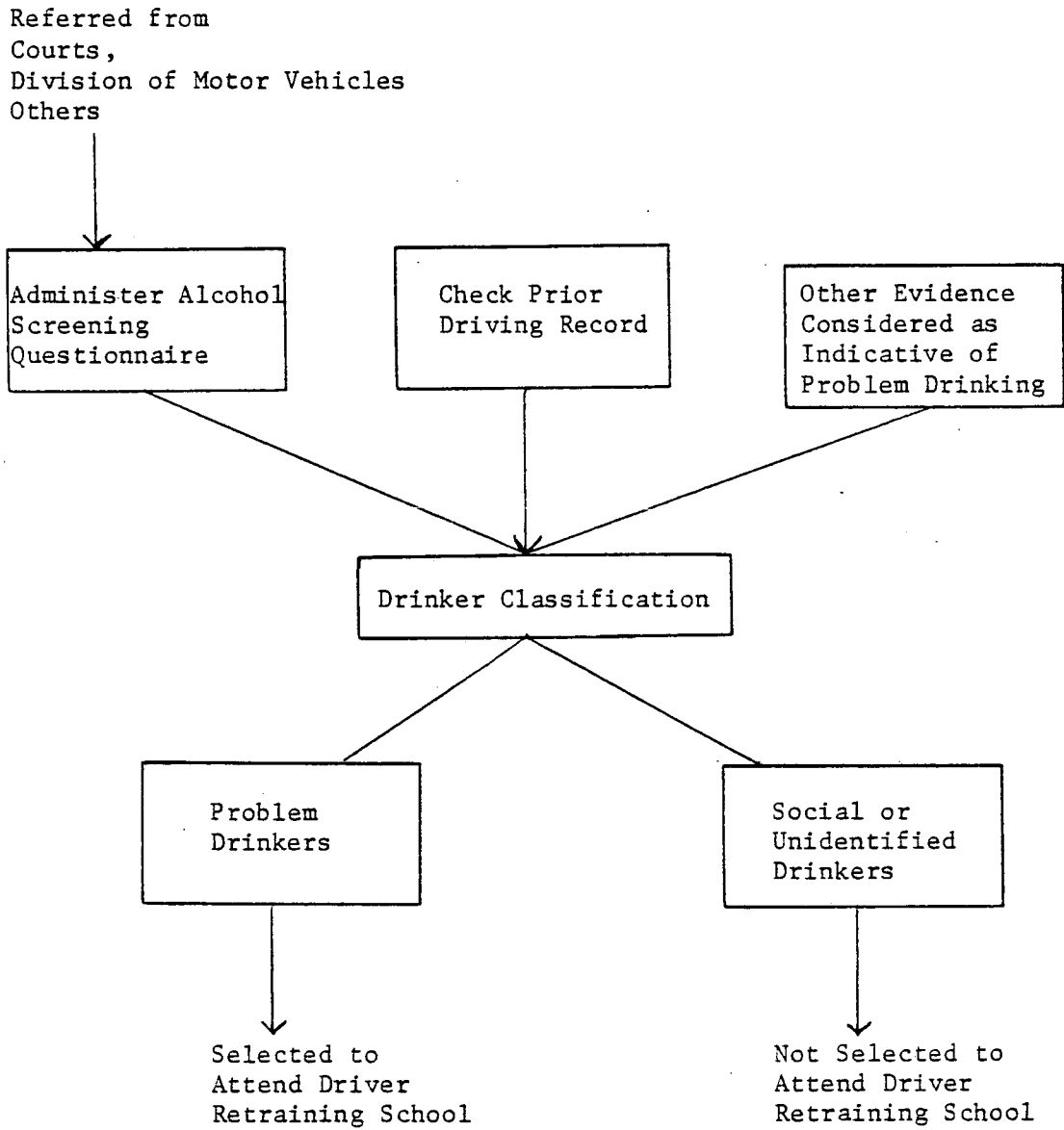


Figure 3. The Screening Process

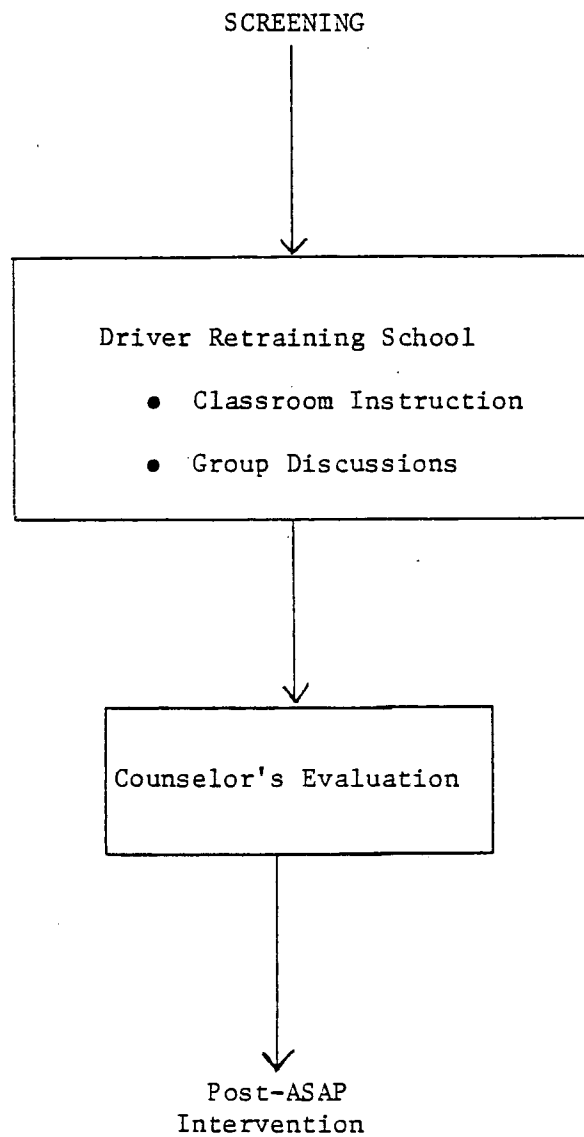


Figure 4. Driver Retraining Schools

The major topics covered in the school included:

- Rights, privileges and responsibilities of driving motor vehicles safely.
- Alcohol and its effects on the human physical and mental systems.
- The effects of alcohol impairment on safe driving.
- Individual drinking patterns and controls.

The final session focused on personal action to avoid future instances of driving while intoxicated and ways to obtain assistance with alcohol-related problems.

Following completion of the prescribed curriculum, the Rehabilitation Counselors evaluated each of the students in terms of their success or failure with the school experience and the severity of their drinking problem. This information provided a basis for a recommendation by a Medical Review Board as to the need for further treatment and the advisability of license restoration during a phase of the program referred to as the Post-ASAP Intervention.

#### E. Post-ASAP Intervention

The Medical Review Board provided recommendations to the Division of Motor Vehicles for decisions regarding license restoration for the individual and the need for assistance with a drinking problem (Figure 5). In general, individuals classified as problem drinkers were recommended for further treatment either as a precondition for license restoration or to coincide with license restoration. Individuals classified as social drinkers who successfully completed the Driver Retraining School program were usually recommended for license restoration.

Where further treatment beyond the ASAP Driver Retraining School was recommended, the individual was referred by DMV to the Program on Alcohol and Drug Abuse where an evaluation was conducted and appropriate referrals and in-depth counselling services were provided.

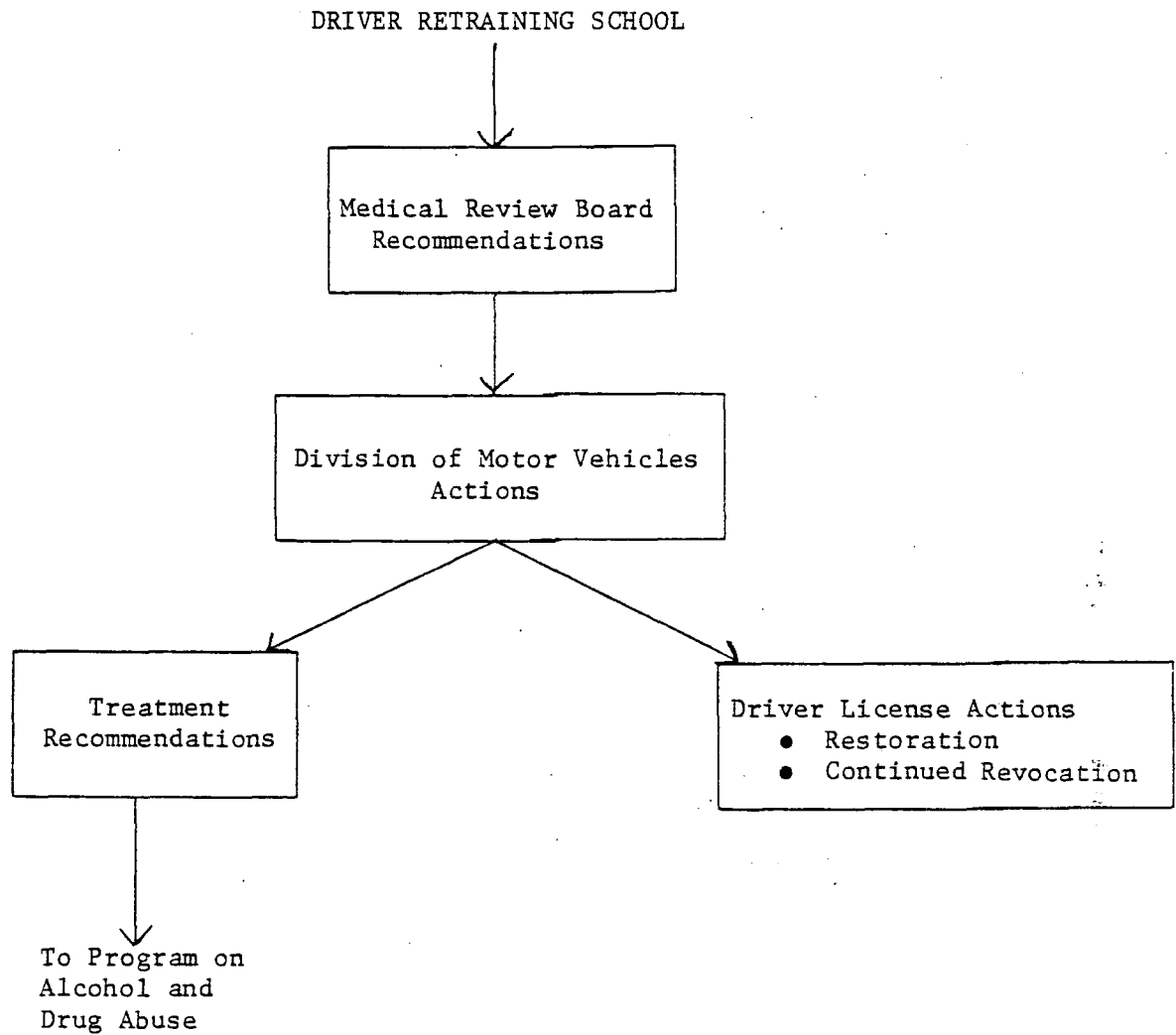


Figure 5. Post-ASAP Intervention

## II. RESULTS OF OPERATIONS

From the start of the referral process in mid-1972 through June 1975, a total of 4,388 referrals have been made in the state with a distribution over the years as follows:

<u>Year</u>	<u>No. of Referrals</u>
1972 (July-Dec.)	434
1973	1,296
1974	1,879
1975 (Jan.-June)	779

Over 96 percent (4,240) of these referrals came from courts in the state with the remainder coming from the Division of Motor Vehicles and the Program on Alcohol and Drug Abuse.

For the years 1973 and 1974, an analysis was performed to compare the number of actual referrals received with the "potential" number of referrals. The potential number of referrals was derived from the first offense DWI conviction data in the counties containing a driver retraining school. During 1973, 58.4 percent of the potential referrals were actually referred to the program and in 1974, the figure was 72.5 percent.

The age and sex distribution of those referred are listed in Table 1. For comparison purposes the distributions for all those arrested and all licensed drivers in 1973 and 1974 are also listed.

The age group having the highest percentage of referrals is the 20-24 year old group (22.5%). This is consistent with the percentage of people in that age group who were arrested (21.3%), but far higher than their percentage among licensed drivers (13.3%). The under twenty age group represented 8.9% of the referrals, approximately equivalent to their percentage among licensed drivers (8.1%). However, this group accounted for 14.6% of those arrested.

In terms of sex differences, 91.7% of the referrals were males, equivalent to their percentage among those arrested (91.2%), but far higher than their percentage among licensed drivers (54.3%).

These percentages indicate that young males in the 20-24 age group had the highest representation among those arrested and eventually referred, whereas those less than twenty were under represented among those referred. For all other age categories and for the distribution by sex, the referrals were representative of the arrest population.

As a result of the screening process, 2,160 individuals were classified as problem drinkers and were selected to attend the Driver Retraining School. This figure represents 50.9 percent of the direct court referrals during the period. The breakdown by selection criteria was as follows:

TABLE 1.

<u>Age Group</u>	<u>1973-1974 Referrals (N=3,526)</u>	<u>1973-1974 Arrests (N=15,973)</u>	<u>1973-1974 Licensed Drivers (1,031,716)</u>
Under 20	8.9%	14.6%	8.1%
20-24	22.5	21.3	13.3
25-29	16.3	15.9	13.6
30-34	12.5	11.4	10.8
35-39	9.1	8.9	8.5
40-44	8.1	8.2	7.9
45-49	8.7	7.1	7.9
50-54	6.4	5.5	7.5
55-59	3.9	3.5	6.6
60+	3.6	3.5	15.7
-----			
Males	91.7	91.2	54.3
Females	8.3	8.7	45.7

<u>Criteria</u>	<u>No.</u>	<u>Percent of Total</u>
Alcohol Screening Test	1,209	56.0
Prior Driving Record	260	12.0
Alcohol Screening Test and Prior Driving Record	278	12.9
Court Directed Mandatory Attendance	175	8.1
Volunteer	59	2.7
Other Evidence of Problem Drinker/Driver	95	4.5
Unspecified on Record	<u>84</u>	4.4
	2,160	

The data indicate that most people were selected for school attendance based primarily on their scores on the alcohol screening test and secondarily on their prior driving record. The mean score on the alcohol screening test of those selected was 19.3 compared to 10.6 for those not selected.

During the three-year period, there were 1,817 graduates from the Driver Retraining School which represented 41.4 percent of the total number of referrals. There were 312 people who did not report for school and 148 who dropped out after starting, representing 21.3 percent of all those selected to attend school. In addition, there were 584 people who never reported for the initial screening representing 13.3 percent of the total referrals.

In summary, the disposition of those referred was as follows:

	<u>Three Year Period</u> <u>Mid 1972 - Mid 1975</u>	
	<u>No.</u>	<u>Percent of Total</u>
Graduates	1,817	41.4
Non-Graduates		
Drop Out	148	
No Show at School	312	
No Show at Screening	584	
Total Non-Graduates	1,044	23.8
School Attendance Not Required	1,473	33.6
Other	<u>54</u>	1.2
	4,388	

Included in the "other" category are individuals whose referrals were withdrawn by the courts or who were subsequently referred to another jurisdiction such as the adjoining New England states.

As part of the Post-ASAP Intervention, the Medical Review Board (MRB) made relicensing and treatment recommendations on individuals completing the Driver Retraining School. In 975 cases (53.7 percent of the recommendations), the MRB found no evidence to withhold the individual's drivers license and recommended restoration. In 96 cases (5.3%), license restoration was not recommended. Further evaluation or treatment was recommended in 745 cases (41.0%) either coincident with, or as a condition, for license restoration.

### III. EFFECTIVENESS

#### A. Method

##### 1. Evaluation Measures

Two primary measures have been used to evaluate the effectiveness of the rehabilitation countermeasure and in particular the Driver Retraining Schools.

Subsequent crash involvement is herein defined as the occurrence of any reportable motor vehicle accident (i.e. alcohol related or not) by an individual after the index conviction date for DWI. In New Hampshire, the term "reportable" refers to an accident with bodily injury or to an accident where total damage to all vehicles exceeds \$300. Prior to August 1973, the dollar figure was less and also a function of whether or not the individual had insurance, which is not mandatory in the state. If all vehicles in an accident had insurance, the accident was reportable when the total damage exceeded \$100. If there was no insurance, the figure dropped to \$50.

DWI rearrest is herein defined as the arrest for driving while intoxicated offense after having been previously convicted for that same offense and having been entered into the ASAP data system.

It is postulated that people who have attended the Driver Retraining School have less of a chance of being involved in an accident or being rearrested for DWI as compared with people who have not attended the school. It is also postulated that the screening process distinguishes between problem and social drinkers as measured by a lesser incidence of subsequent crash involvement and DWI rearrest for social drinkers.

Data on several groups of people were available to evaluate these hypotheses. The primary groups were:

- Those referred during the 1972, 1973 and 1974 calendar years.
- Those not referred during the same years.

In addition, a small group of Driver Retraining School graduates and a group of not-referred DWIs were matched so as to make the profiles of the two groups as similar as possible. The individuals in each of these matched groups had a prior DWI before the index DWI which placed them in the referred (or not-referred) group. The individuals in these two groups were also matched according to the following characteristics:

- Same sex
- Similar age group (mean age difference was plus or minus two years)
- Same or adjacent county of residence
- Similar exposure time to rearrest--accomplished by matching DWI arrest dates within same or adjacent month.



This matching procedure attempted to approximate a control group. It was, however, limited in that the procedure produced a sample of only 168 individuals in each group who could be matched using the above criteria.

## 2. Subsequent Crash Involvement

For the analysis of subsequent crash involvement, the referred groups from 1972, 1973 and 1974 were compared with samples of not-referred individuals. The samples were randomly drawn from the population of all in-state residents who were arrested for DWI in each of the years 1972, 1973 and 1974 but who were not referred. A sample of 200 was selected for each year, for a total not-referred sample of 600.

An analysis of subsequent crash involvement was also made for the matched groups. As discussed above, both the referred and not-referred group consisted of 168 individuals.

The data used in the analysis of subsequent crash involvement was obtained through the Department of Safety's computerized accident and violation file. The driving records of the individuals in each of the groups was accessed and the incidence of crashes occurring after the index arrest for the years 1973, 1974 and 1975 was tallied. For cases where the computerized system was unable to locate the individual's record, a manual check was made of the hard copy system (being maintained in parallel with the computerized system) to locate any subsequent crash involvement. Where the records indicated that a person had several accidents (either in the same year or another accident at a later date) the individual was only counted for the first accident.

## 3. DWI Rearrest

For the examination of DWI rearrest, three types of analyses were conducted:

- Where available, the total population data were utilized in the analysis, that is, the total number of referred and not-referred individuals rather than samples of the total.

- Where population data were not available, samples of the population of not-referred individuals were used. The entry and exposure years wherein population and sample data were utilized are illustrated in Figure 6.

- As was done in the crash involvement analyses, the matched group of referred and not-referred individuals were also compared utilizing the exposure years 1973, 1974 and 1975.

The data used in the analysis of DWI rearrest was obtained by a manual search of the arrest logs maintained by ASAP for the years 1973, 1974 and 1975. Where people had several DWI rearrests, the person was only counted once and classified as a recidivist at the date of the first DWI rearrest.

<u>Entry Year</u>	<u>EXPOSURE YEARS</u>		
	<u>1973</u>	<u>1974</u>	<u>1975</u>
1972	Population	Sample	Sample
1973	Population	Sample	Sample
1974	-----	Population	Sample

Figure 6. Population and Sample Data Utilized  
for the DWI Rearrest Analyses

## B. Results

### 1. Subsequent Crash Involvement

The crash involvement data was analyzed for the years 1972, 1973 and 1974 for both the referred population and the not-referred sample group. To account for the effects of time on the rehabilitation process, the data were grouped in terms of years of exposure after initial entry. Accidents that occurred within the same calendar year as the index arrest and conviction are listed in part a. of Table 2. The 'Total N' refers to the number of people that were included in that portion of the analysis (e.g. 3,609 referred and 600 not-referred). For part a., this includes cases from 1972, 1973 and 1974. The 'No. Accid.' refers to the number of people having accidents within the same exposure year. The number of people having accidents as a percentage of Total N is also listed. These data were calculated for the total number of referred, the various subgroups of referred individuals and for the not-referred sample group.

Accidents that occurred within the first subsequent calendar year after the index arrest and conviction are listed in part b. For 1972 cases, the exposure year is 1973. For 1973 cases, the exposure year is 1974 and for 1974 cases, the exposure year is 1975. Accidents that occurred within the second subsequent calendar year are listed in part c.--1972 cases with accidents in 1974, and 1973 cases with accidents in 1975. Cases from 1974 were not applicable in this Section since the exposure period was only complete through 1975. Similarly, part d. lists the accidents in the third subsequent calendar year and only 1972 cases have the requisite exposure period. Finally, part e. lists the overall three-year summary of accidents combining all exposure periods.

For the overall three year accident data (Table 2, part e), the total referred group had significantly fewer accidents (8.5%) than the not-referred sample (11.0%) ( $\chi^2 = 3.96$ , d.f. = 1;  $p < .05$ ). When the Graduates and the Attendance Not Required groups were individually compared with the not-referred sample, no significant differences were found ( $\chi^2 = 1.32$ , N.S. and  $\chi^2 = 1.68$ , N.S. respectively). Within the referred population, the Non-Graduate group had significantly fewer accidents when compared with the Graduates and the Attendance Not Required groups ( $\chi^2 = 7.36$ , d. f. = 2,  $p < 0.5$ ).

It should be noted that because of the different accident rates for the sub-groups within the referred population, and in particular the lower accident rate for the Non-Graduates, it is not possible to attribute the detected difference between the referred and not-referred groups directly to the effects of the Driver Retraining School. Similarly it is also not possible to attribute any effect to the screening process, as the Attendance Not Required group did not have a significantly different accident rate than the not-referred group. The difference could have resulted from the Non-Graduates who either did not drive or were extremely cautious in their driving. Not only were they convicted of DWI and were under license revocation, as were the other referred groups, but they were also not in compliance with the courts rehabilitation directive possibly making them even more cautious. In addition, the noncompliance with the courts directive increased their license revocation period to the maximum specified in their sentence which could have exceeded the revocation period of the other groups.

TABLE 2. REFERRED AND NOT-REFERRED - CRASH INVOLVEMENT

	REFERRED				NOT-REFERRED SAMPLE
	<u>Graduates</u>	<u>Non-Graduates</u>	<u>Attendance Not Required</u>	<u>Total</u>	
a. Same Exposure Year Accidents					
Total N	1,425	888	1,296	3,609	600
No. Accid.	27	12	25	64	12
% Accid.	1.9	1.4	1.9	1.8	2.00
b. First Subsequent Calendar Year Accidents					
Total N	1,425	888	1,296	3,609	600
No. Accid.	75	24	64	163	37
% Accid.	5.3	2.7	4.9	4.5	6.2
c. Second Subsequent Calendar Year Accidents					
Total N	647	458	625	1,730	400
No. Accid.	28	16	24	68	14
% Accid.	4.3	3.5	3.8	3.9	3.5
d. Third Subsequent Calendar Year Accidents					
Total N	167	119	148	434	200
No. Accid.	3	4	5	12	3
% Accid.	1.8	3.4	3.4	2.8	1.5
e. Overall Three Year Accidents					
Total N	1,425	888	1,296	3,609	600
No. Accid.	133	56	118	307	66
% Accid.	9.3	6.3	9.1	8.5	11.0

For each of the exposure year periods, the data from Table 2 is plotted in Figure 7 in two graphs. The upper graph indicates the percentage of people having an accident as a function of the calendar years between their index arrest and conviction and the subsequent accident. The lower graph uses the same data, but plots the percentages cumulatively over the exposure years. An examination of these graphs indicates that in the first subsequent year after the index arrest and conviction, the not-referred group had more accidents than the referred group since the difference approaches statistical significance ( $\chi^2 = 3.10$ , d. f. = 1,  $p < .10$ ). The difference between the groups, however, diminishes in the second and third subsequent years.

These results indicate that, when data for the entire exposure period are combined, people who were referred had fewer accidents than people who were not-referred. The difference is most pronounced after the first subsequent calendar year and the effect may only be of short term duration.

Accident data were also analyzed for the matched groups of referred and not-referred people for the years 1973, 1974 and 1975. The number of people having accidents in each group are listed in Table 3. When people had more than one accident in the three year period, only the first accident was used in the tally. No statistical differences were found for the total or for the individual years indicating that the accident rate for both groups was essentially equivalent.

## 2. DWI Rearrest

The DWI rearrest data was analyzed for the sample data and where available, for the population data. Table 4 lists the results for the individual years of population data and a composite of the overall population. The 'Total N' refers to the number of people that were included in the particular portion of the analysis. The 'No. Rearrested' refers to the number of people who were rearrested for DWI during the listed time period, and '% Rearrested' considers the number rearrested as a percentage of the Total N. The composite data indicates that more of the not-referred people were rearrested (5.2%) than were the referred people (3.6%;  $\chi^2 = 16.6$ , d. f. = 1,  $p < .001$ ).

The data for the individual years indicates that there was no difference between the referred and not-referred for the 1973 Entry/1973 Exposure year (3.7% versus 3.5%;  $\chi^2 = .08$ , d. f. = 1, N.S.), a significant difference for the 1974 Entry/1974 Exposure year (4.6% versus 2.9%;  $\chi^2 = 9.33$ , d. f. = 1,  $p < .01$ ), and a difference that approaches statistical significance for the 1972 Entry/1973 Exposure year (9.3% versus 6.5%;  $\chi^2 = 3.59$ , d. f. = 1,  $p < .10$ ).

Table 5 lists the results for those years wherein sample data was used. The composite data indicates that difference between the not-referred and referred groups approached statistical significance ( $\chi^2 = 3.55$ , d. f. = 1,  $p < .10$ ) with 10.2% of the not-referred group being rearrested, compared with 8.9% of the referred group. There was no significant difference, however, between the referred and the not-referred groups when the data was analyzed for each individual Entry and Exposure period.

These data, and in particular the population analysis, indicate that people who were not-referred had a higher rate of DWI rearrests than the people who were referred.

TABLE 3. MATCHED GROUP STUDY - CRASH INVOLVEMENT

	<u>Experimental Group</u> (Graduates)	<u>Control Group</u> (Not Referred)
Total N	168	168
No. Accid. - 1973	7	4
- 1974	7	6
- 1975	<u>5</u>	<u>6</u>
Total Accidents	19	16

TABLE 4. DWI REARREST - POPULATION DATA

<u>Entry</u> <u>Year</u>		<u>Exposure Year</u>			
		<u>1973</u>		<u>1974</u>	
		<u>Referred</u>	<u>Not Referred</u>	<u>Referred</u>	<u>Not Referred</u>
1972	Total N	434	2,354		
	No. Rearrested	28	218		-----
	% Rearrested	6.5	9.3		
1973	Total N	1,296	4,350		
	No. Rearrested	46	162		-----
	% Rearrested	3.5	3.7		
1974	Total N			1,879	4,327
	No. Rearrested		-----	55	199
	% Rearrested			2.9	4.6
-----					
Composite	Total N		<u>Referred</u>		<u>Not Referred</u>
	No. Rearrested		3,609		11,031
	% Rearrested		129		579
			3.6		5.2

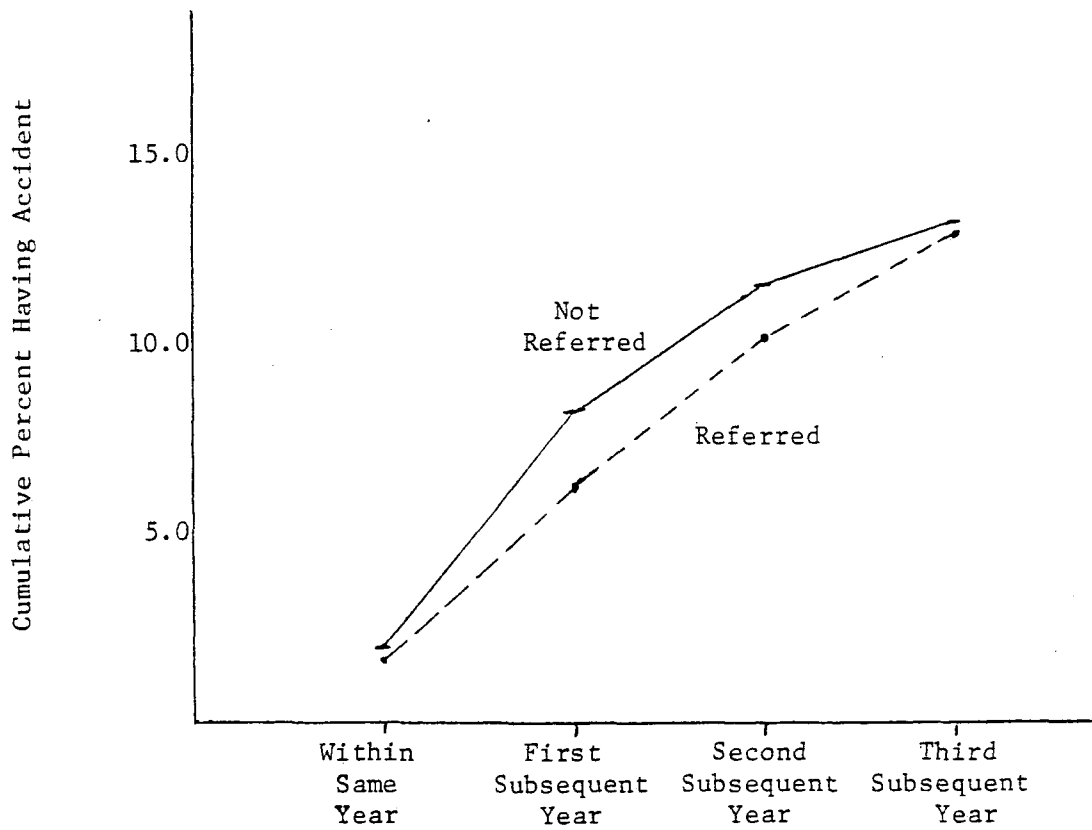
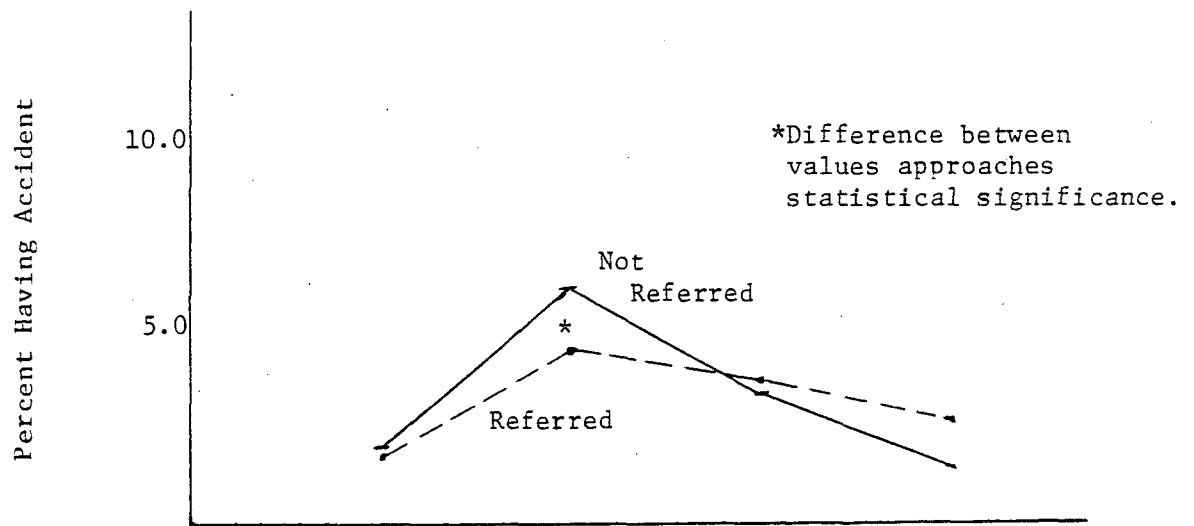


Figure 7. Calendar Years to Reportable Accident

TABLE 5. DWI REARREST - SAMPLE DATA

<u>Entry</u> <u>Year</u>		<u>Exposure Year</u>			
		<u>1974</u>		<u>1975</u>	
		<u>Referred</u>	<u>Not Referred</u>	<u>Referred</u>	<u>Not Referred</u>
1972	Total N	434	434	434	434
	No. Rearrested	25	29	26	18
	% Rearrested	5.8	6.7	6.0	4.1
1973	Total N	1,296	1,296	1,296	1,296
	No. Rearrested	78	102	65	76
	% Rearrested	6.0	7.9	5.0	5.9
1974	Total N			1,879	1,879
	No. Rearrested	-----		126	142
	% Rearrested			6.7	7.6
-----					
				<u>Referred</u>	<u>Not Referred</u>
Composite	Total N			3,609	3,609
	No. Rearrested			320	367
	% Rearrested			8.9	10.2



As was found with the accident analysis, the data indicate that the difference between the referred and not-referred groups is more pronounced in the first subsequent year, represented by the population data, and that this difference diminishes in the subsequent years, as represented by the sample data.

The composite sample data was further analyzed for each of the referred groups (Table 6). The graduates, with a 9.7 percent rate of recidivism and the non-graduates with a 9.3 percent rate were not significantly different from the not-referred group, which had a 10.2 percent rate ( $\chi^2 = .27$ , d. f. = 1, N.S. and  $\chi^2 = .54$ , d.f. = 1, N.S. respectively). The Attendance Not Required group however, had significantly fewer recidivists (7.6 percent) than the not-referred group (10.2%;  $\chi^2 = 7.1$ , d. f. = 1,  $p < .01$ ). This indicates that when rearrests were used as the criterion measure, the screening process was capable of distinguishing between problem and social drinkers.

The rearrest data was also analyzed for the matched groups of referred and not-referred people for the years 1973, 1974 and 1975 (Table 7). Where people had more than one DWI arrest, only the first recidivating arrest was counted. There was no difference in the total number of recidivists or in the yearly totals with the exception of the 1973 data wherein the difference approached statistical significance, with the graduates having fewer recidivists.

One possible reason why the results with the matched group did not parallel that of the referred and not-referred groups was that the measure of subsequent accidents and rearrests are relatively infrequent events requiring large numbers of people to establish statistically significant differences. The matched groups, with only 168 eligible individuals was too small a group for measuring these relatively infrequent events.

Summarizing the results of the subsequent crash involvement and DWI rearrest analyses indicates the following. When the referred and not-referred groups were compared, the referred group had fewer total accidents and rearrests than the not-referred group. When examined over the years, the differences occurred in the initial years and were not present in subsequent years. When the matched groups were examined, these differences were not found.

### C. Conclusion

These analyses attempted to evaluate the effectiveness of the rehabilitation process by comparing the subsequent behavior of those who went through the program with a sample of those who did not. The measures used were subsequent crash involvement and DWI rearrest.

In terms of the effectiveness of the overall rehabilitation process, there was evidence that the process had an initial short-term effect, within the same and subsequent year, of reducing the number of subsequent accidents and DWI rearrests. Although the major difference between the groups used in the analyses was the attending of the driver retraining schools, it is possible that

TABLE 6. DWI REARREST - REFERRAL GROUPS AND NOT-REFERRED

COMPOSITE SAMPLE DATA

	REFERRED				NOT-REFERRED SAMPLE
	<u>Graduates</u>	<u>Non-Graduates</u>	<u>Attendance Not Required</u>	<u>Total</u>	
Total N	1,425	888	1,296	3,609	367
No. Rearrested	138	83	99	320	3,242
% Rearrested	9.7	9.3	7.6	8.9	10.2

TABLE 7. MATCHED GROUP STUDY - DWI REARREST

	<u>Experimental Group</u> ( <u>Graduates</u> )	<u>Control Group</u> ( <u>Not Referred</u> )
Total N	168	168
No. Recidivists - 1973	3	9
- 1974	12	11
- 1975	<u>7</u>	<u>6</u>
Total	22	26

\*Difference approaches statistical significance ( $\chi^2 = 3.1$ , d.f. = 1,  $p < .10$ )

other factors, in particular initial differences between the groups, may have also contributed to these results. In terms of the effectiveness of the screening process, there was some evidence from the recidivism data, that the process was capable of distinguishing between social and problem drinkers.

It should be recognized that the comparisons employed in this evaluation (i.e., between persons referred for retraining and those not referred) are of limited value in deciding on the effectiveness of the retraining process. This is so, generally, because the comparisons do not control for many factors external to the countermeasure which could differentially affect the subsequent driving records of the groups being examined. Specifically, the groups being compared were created by the adjudication process and the courts' decisions about whether or not to refer persons convicted. A plausible alternative hypothesis, therefore, is that the referral decisions created groups which were somehow different in exposure (to arrest, for example), driving ability, etc., and that these differences, rather than retraining effectiveness, led to the outcomes described above. Within the present design there is no way to eliminate this alternative explanation for the results attained.

With the establishment of the expanded rehabilitation countermeasure in July 1975, the evaluation technique was modified so as to provide the random assignment of individuals to either retraining or a control group thereby eliminating biases in the selection process. In-depth interviews were also obtained from a portion of each group so as to measure various life activity changes in addition to crash involvement and DWI rearrest. The results of this analysis (documented in a separate report) will provide more reliable data so that more definitive conclusions on the rehabilitation effectiveness can be made. Generally, the findings of this experimental design showed no effect of the retraining process on DWI recidivism. On the other hand, some significant changes in the life activities measures were obtained.

#### IV. COST ANALYSIS

The costs associated with the rehabilitation countermeasure were examined for the years 1973, 1974 and for the first half of 1975. Each of the four major components of the rehabilitation system was examined in terms of the federal funding and the direct and indirect state funding. The overall costs incurred in this time period are listed in Table 8.

The costs associated with the referral process primarily include the time and travel expenses associated with soliciting and maintaining the cooperation of the judges in referring convicted DWI offenders to ASAP.

The costs associated with the screening process involve the expenses associated with administering and scoring the alcohol screening test and with checking the driver's prior record.

The primary expense associated with the Driver Retraining School consists of the salary and travel expenses for the Rehabilitation Coordinator and the Driver Retraining Specialists. Also included are the equipment expenses for films and supplies, classroom rental and the salary of the Rehabilitation clerks who maintain the record system.

The costs associated with the Post-ASAP Intervention include the fees of the members of the Medical Review Board and the expenses associated with coordinating and maintaining the record system.

The cost-per-case associated with the rehabilitation countermeasure is as follows:

- The referral, screening and Post-ASAP Intervention processing of each of the 3,954 individuals during the period of this cost analysis averaged \$17.76 per case--excluding school costs.
- The per-pupil costs of operating the Driver Retraining School for the 1,786 graduates and drop-outs were \$51.81.
- The combined cost, therefore, of processing an individual who attended the Driver Retraining School was \$69.57 (\$17.76 plus \$51.81). On a yearly basis, this figure was \$77.25 during 1973, dropped to \$59.57 during 1974 and increased again to \$80.86 per pupil in the first half of 1975.

TABLE 8. COSTS ASSOCIATED WITH THE REHABILITATION COUNTERMEASURE

	<u>1973</u>	<u>1974</u>	<u>Jan-June</u> <u>1975</u>
Referral	\$ 3,528	\$ 4,324	\$ 3,451
Screening	8,705	10,013	7,967
Driver Retraining School	30,725	37,729	24,081
Post-ASAP Intervention	<u>12,183</u>	<u>13,897</u>	<u>6,151</u>
	\$55,141	\$65,963	\$41,650

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