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NEW HAMPSHIRE ALCOHOL SAFETY ACTION PROJECT

ANALYSIS OF THE EFFECTIVENESS OF DRIVER RETRAINING SCHOOLS

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16. Abstract

The Rehabilitation Countermeasure of the New Hampshire's Alcohol Safety Action Project provided referral, screening and a Driver Retraining School for modifying the drinking/driving behavior of individuals convicted of driving while intoxicated. Two studies using random assignments of subjects measured the effectiveness of the program. In the first study 500 driving while intoxicated (DWI) offenders were assigned to the Driver Retraining School and 500 DWI offenders were given no treatment and served as controls. The second study, part of a national Short Term Rehabilitation study, involved 101 problem drinkers in the assigned group and 101 problem drinkers in the control group. The major findings were as follows: (1) There were no major differences between the comparison groups in the primary traffic safety measure of DWI recidivism and subsequent accidents. It was found, however, that problem drinkers with initial BACs of .20 or over who were assigned to the Driver Retraining School had fewer subsequent DWIs than an equivalent control group; (2) Problem drinkers who were in the assigned group reported greater social interaction and more control over their drinking, but this latter effect diminished after one year.

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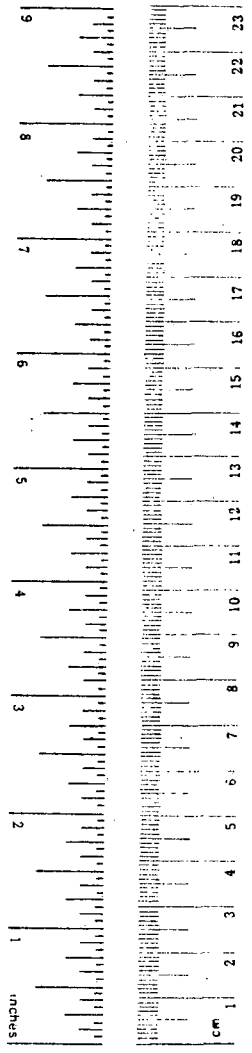
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

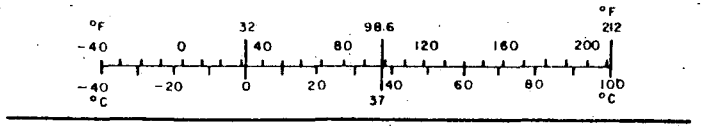
Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	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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FOREWORD

The New Hampshire Alcohol Safety Action Project (ASAP) was a statewide traffic safety effort designed to reduce the toll of alcohol related motor vehicle accidents. The ASAP was operational for five years, 1972-1976.

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 state was the Program on Alcohol and Drug Abuse of the Division of Public Health Services. Other participating agencies and organizations included the New Hampshire State Police, various local police departments, the Division of Motor Vehicles, the Bureau of Consumer Protection Services, the Department of Centralized Data Processing, the New Hampshire Highway Safety Agency, Dawson Advertising Inc. and Dunlap and Associates, Inc. Mr. John M. Muir was the ASAP Project Director and Mr. Paul Spack was the Rehabilitation Coordinator.

The present report is one of a series of analytic studies which are part of the final report of the ASAP. In addition to the basic final report volume, these other reports deal with overall project impact, adjudication of DWI offenses, patrol activity, and public information and education.

A comparison report entitled "Rehabilitating Drinking Drivers: An Analysis of the Three Years of Activities of the New Hampshire Alcohol Safety Action Project," examines the rehabilitation efforts between mid 1972 and mid 1975. The present report covers the expanded activities begun in July 1975.

We wish to express our appreciation to the numerous individuals in the state who assisted us in our work. We gratefully acknowledge the cooperation of Mr. Muir and his staff, Mr. John Bonds, Mr. William Jacques, Mr. Edward Rosen and Mrs. Lorraine Good.

I. INTRODUCTION

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 providing rehabilitative services, of a short term duration, to individuals convicted of driving while intoxicated (DWI).

This effort, referred to as the Rehabilitation Countermeasure, began operations in mid-1972 when the first referrals were received from the courts and the Driver Retraining Schools held their first classes. Between then and mid-1977, close to 8,500 people had been referred to the program.

At the completion of each year's operation since 1972, analytic studies were prepared evaluating the effectiveness of the rehabilitation countermeasure. To better evaluate the programs effectiveness, an experiment was begun in July 1975 wherein individuals were randomly assigned to either the Driver Retraining Schools or to a control group with no rehabilitative treatment. These groups were subsequently compared to measure the effectiveness of the Driver Retraining School experience.

This report describes the Rehabilitative Countermeasure and evaluates its effectiveness using the randomly assigned groups. The major elements involved in the rehabilitative process are described and the evaluation design, methods and results are presented and discussed.

II. REHABILITATION COUNTERMEASURE DESCRIPTION

A. Overview

The New Hampshire Alcohol Safety Action Project (ASAP) Rehabilitation Countermeasure was composed of four major elements (Figure 1). Through the referral process, individuals convicted of first offense DWI and other people, recommended from several state agencies, were referred to ASAP for driver retraining. A diagnosis or screening process was initiated to determine if the individual was a social or problem drinker. The Driver Retraining School then provided classroom instruction and opportunities for group discussions on the problem of drinking and driving. A Post-ASAP intervention referred those individuals evaluated as having an alcohol problem for more extensive treatment after completion of the Driver Retraining School.

An integral part of the Rehabilitation Countermeasure was the program evaluation involving the random assignment of individuals to either a treatment group (i.e., attend Driver Retraining School) or to a control group. These individuals were subsequently checked for accident, DWI and other re-arrest involvement.

In addition, the New Hampshire ASAP participated in the Department of Transportation's Short-Term Rehabilitation (STR) study to evaluate, on a national level, the effectiveness of various short-term treatment modalities for problem drinker/drivers. As part of this project, one hundered and one problem drinkers in the treatment group and a comparable number in the control group were interviewed every six months to determine if there were any changes in their styles of living as a result of the rehabilitation process.

The following section describes each of the major elements of the rehabilitation countermeasure.

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). Court referrals resulted from convictions for first offense DWI.

In general, the process began when the police stopped a vehicle and established that there was 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 administered in

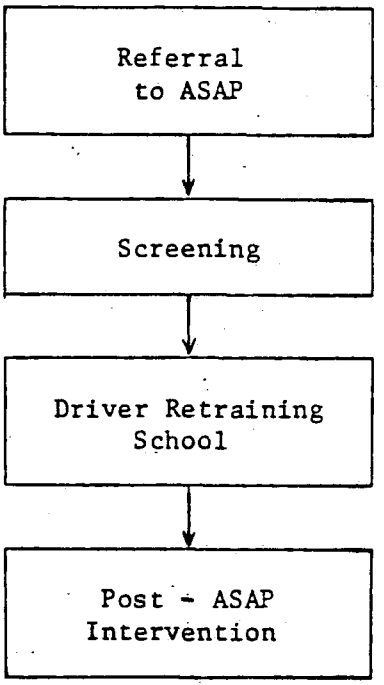

Figure 1. MAJOR ELEMENTS OF
N. H. ASAP REHABILITATION COUNTERMEASURE

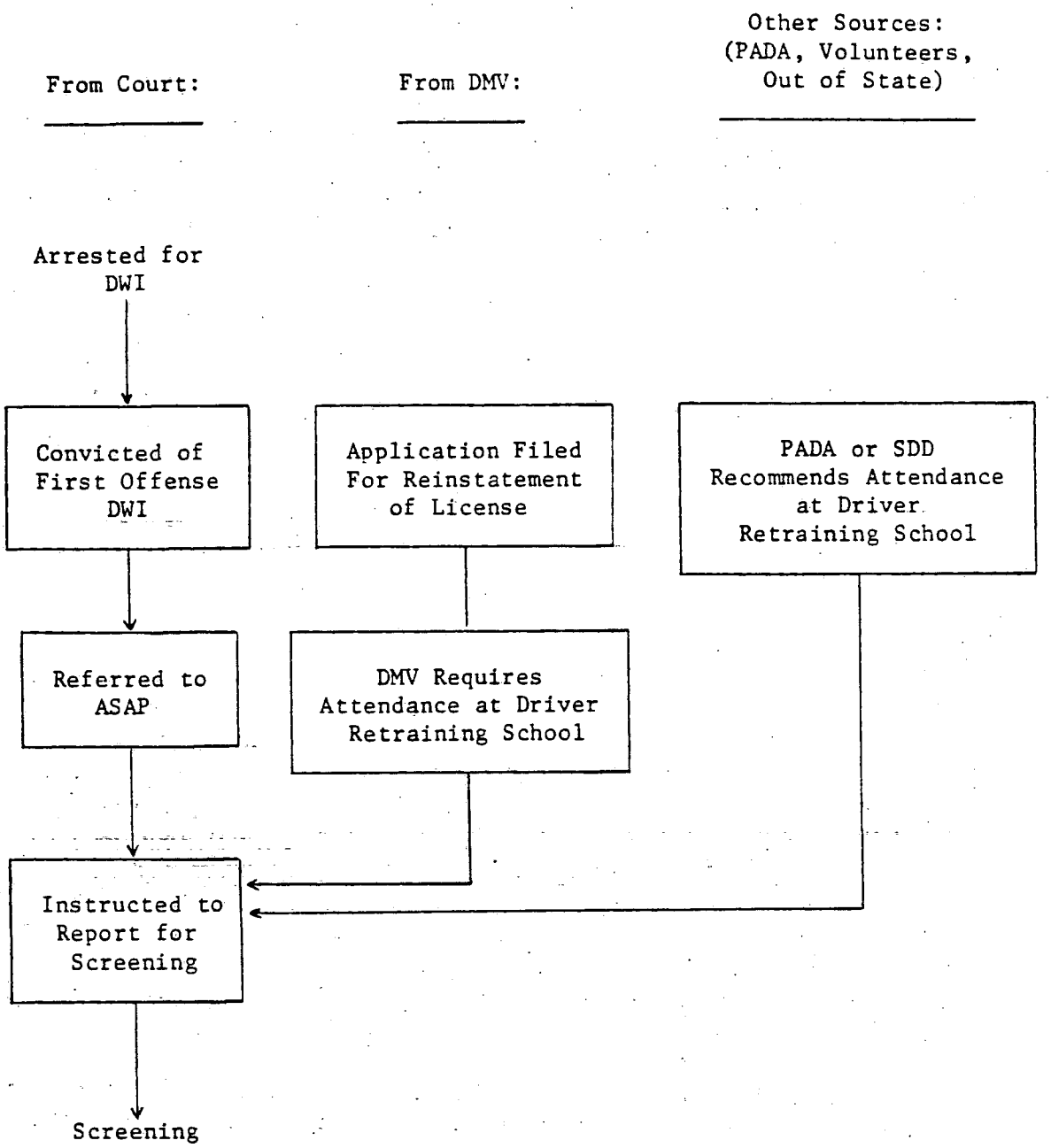

Figure 2. THE REFERRAL PROCESS

the state are taken on the Breathalyzer. If a driver refused to take the test, he or she was subject to the penalties specified in the implied consent law (90 days license revocation) administered by the Division of Motor Vehicles, and was still subject to DWI prosecution. If the results of the test indicate a blood alcohol concentration of .10 or over (i.e., where the driver is 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 cooperated 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.

The sentence was only applicable to drivers convicted of first offense DWI, since anyone convicted of a second offense faced 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 resulted 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.

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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 occurs.

Referrals from DMV usually occurred 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 now required to complete the course before being granted a license.

The other state agency referring 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 program 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, (e.g., volunteers). Referrals from DMV, PADA and from other sources were also requested to appear for the driver screening.

C. Screening

Three items of information were utilized in the screening process to classify the individual as a problem or social drinker (Figure 3). The first consisted of the results of a self-administered questionnaire designed to identify problem drinkers and referred to as the Mortimer-Filkins Form A (MF-A) alcohol screening questionnaire. This was administered to each individual when they appeared for the screening process.

The second item was the blood alcohol level (BAC) taken at the time of the individual's arrest. BAC levels over 0.20 percent were considered as evidence indicating that the individual was a problem drinker.

The final item was the individual's prior driving record. A check was made of the driving record of all those referred, and the incidence of a prior driving-while-intoxicated (DWI) offense was considered as evidence indicating a problem drinker.

Either a high score on the MF-A alcohol screening questionnaire, a BAC of 0.20 percent or over or the incidence of a prior DWI classified the individual as a problem drinker. Individuals not meeting these criteria were classified as social drinkers; those under 25 years of age were classified as young social drinkers.

Although it was not part of the screening process, the random assignment of individuals to either the treatment or control condition was accomplished at this point in the rehabilitation process (described in Section III).

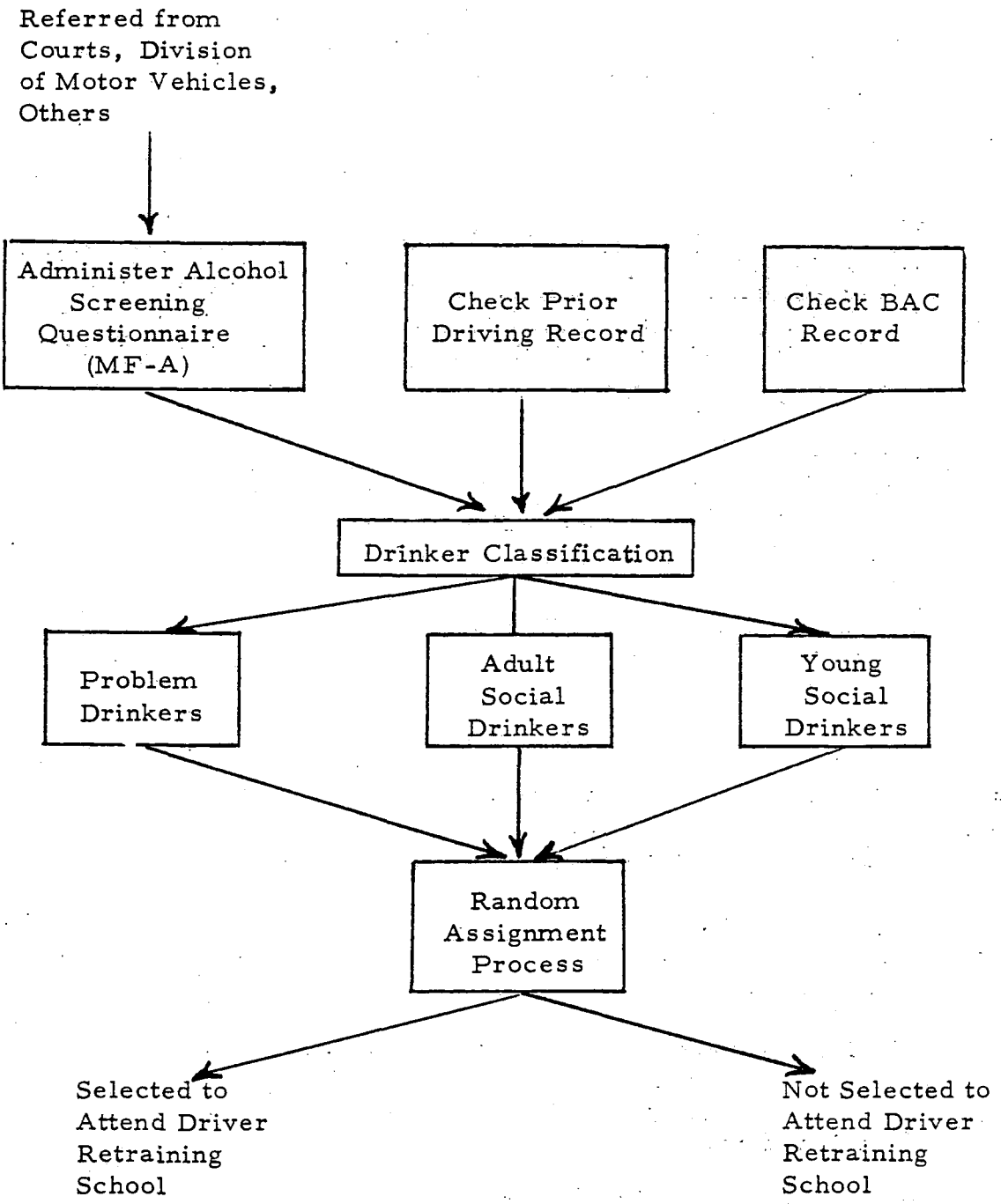

Figure 3. The Screening Process

Those designated to attend school were notified where and when to report for the first class session. Individuals in the control group were sent information on drinking and driving and informed that their presence at the school was not required.

Individuals failing to intially attend the screening session were sent a follow-up letter approximately one month after their conviction date. If there was still no response within the next month, the DMV was notified and their license was 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 this 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 film. After a brief break, the participants engaged in a group discussion on a related topic. 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 to obtain assistance with alcohol related problems.

Initially, an attempt was made to tailor the curriculum to the specific drinker classification groups. In practice, little if any differences were noted in the conduct of the sessions as a function of drinker classification. Coupled with this was the fact that at many school sites there were insufficient numbers of people to schedule separate classes for each drinker classification.

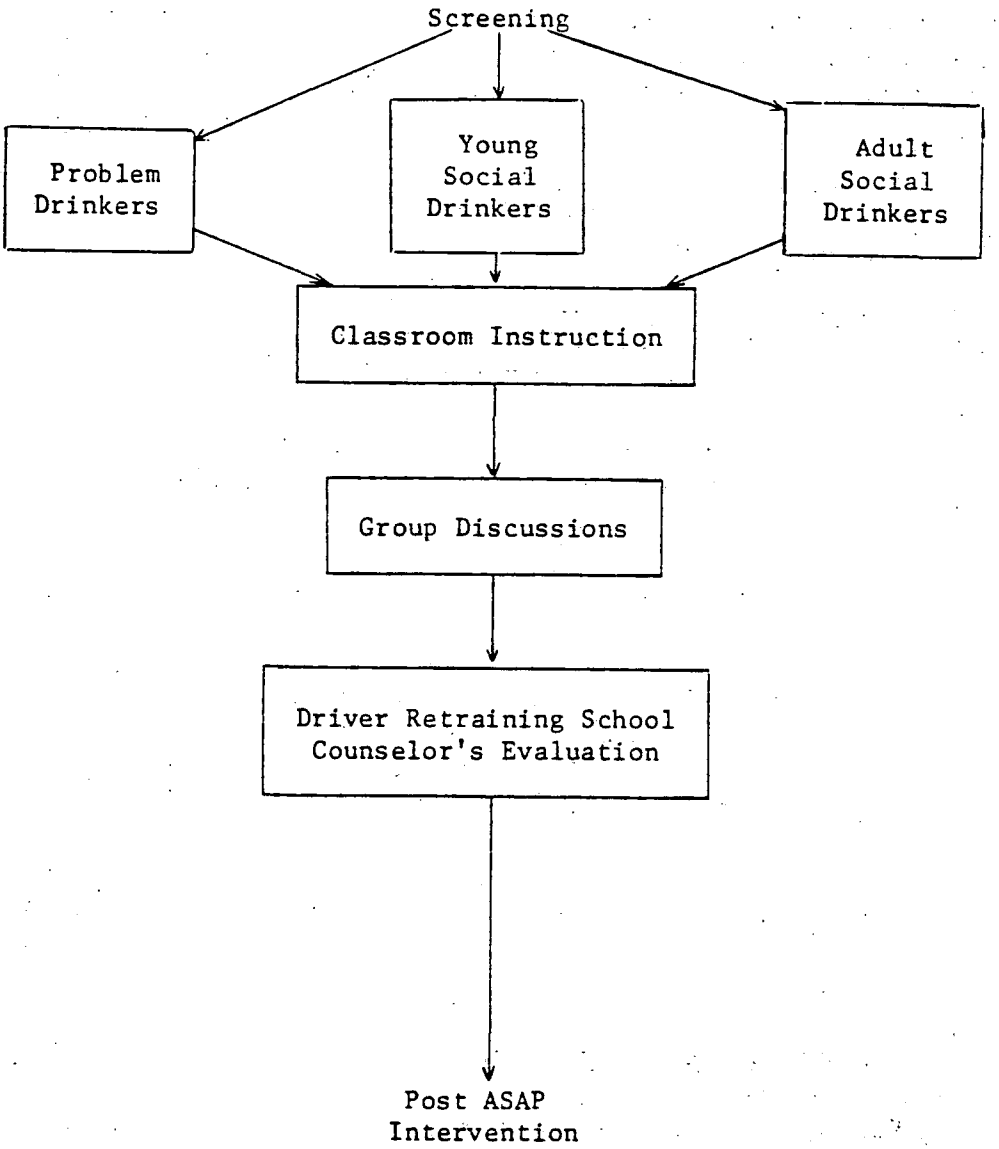

Figure 4. DRIVER RETRAINING SCHOOLS

One of the primary reasons for this was that nearly half of the individuals referred to ASAP were included in the control groups and, therefore, not required to attend the school. This situation necessitated the combining of young and adult social drinkers into a single course at certain sites and, at times, the combining of young and adult social drinkers and problem drinkers into a single course. Reports by the Rehabilitation Counselors, who conducted the sessions, indicated no adverse effects of combining the various drinker types into a single course.

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, consisting of the Rehabilitation Coordinator, a physician and a psychiatrist, 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 had 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 for treatment by its Services to Drinking Drivers program. Under a grant from the National Institute on Alcoholism and Alcohol Abuse, this program provided treatment in the form of 10 sessions of group therapy aimed at increasing the participants' capacity for coping with stress resulting from interrelationships without resorting to the misuse of alcohol.

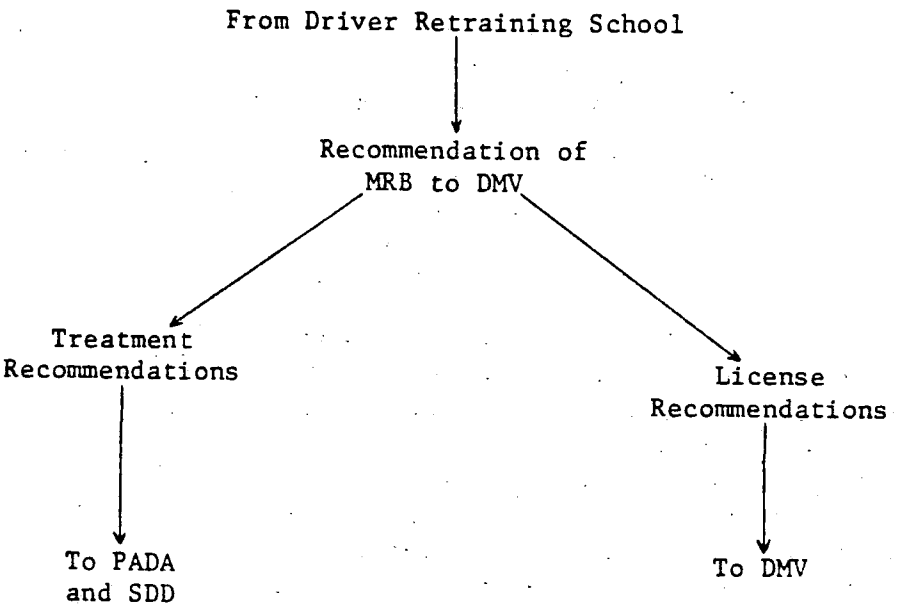

Figure 5. POST ASAP INTERVENTION

III. EVALUATION DESCRIPTION

A. Design

The basic design for evaluating the effectiveness of the rehabilitation countermeasure and, in particular the Driver Retraining School, involved the establishment of equivalent groups of DWI offenders. Treatment groups who were assigned to attend the Driver Retraining School and control groups, who received no treatment were created. These groups were then subsequently compared along several dimensions to determine if the treatment was effective.

These groups were created through a process of random assignment which operated as follows: Each individual referred to ASAP was assigned a case code number. Periodically, the case code numbers of all individuals eligible for inclusion in the random assignment pool were transmitted to the ASAP Evaluators. A specific set of guidelines was developed for excluding individuals from the random assignment pool. These included people who did not report for screening; DMV and PADA referrals, (as they were specifically required to attend the driver retraining school); volunteers; recidivists (e.g., previous school attendees who had subsequent DWI's); and individuals who were referred by the courts with the stipulation that they must attend the school.

Using a table of random numbers, half of the cases in the random assignment pool were designated to attend the driver retraining school and half to a control group. The case code numbers of the individuals assigned to each condition were transmitted in writing back to the rehabilitation office for appropriate action.

To ensure that the process was unbiased, the rehabilitation staff was not responsible for the assignments. Rather, the ASAP evaluators, working only with case code numbers, made the assignments.

There were, however, five cases where it was later discovered that individuals assigned to the control group did in fact attend the Driver Retraining School, usually as volunteers. A subsequent verification indicated that none of these people were part of the STR study. Data on these individuals were eliminated from the analyses of the overall control group.

The random assignment process and the composition of the various study groups are illustrated in Figure 6. The selection procedure began on July 1, 1975. The first 1,000 cases of problem, young social and adult social drinkers who were eligible for inclusion in STR and non-STR studies were randomly assigned to the treatment or control group, comprising the overall (or non-STR) study groups. From these groups, the first 202 individuals classified as problem drinkers were also selected for the STR study.

The evaluation design therefore encompassed two studies involving randomly assigned subjects;

- an STR study of 101 treatment and 101 control problem drinkers, and
- and overall (non-STR) study with a target of 500 treatment and and 500 control problem and social drinkers. (Actual total available for analysis was 504 treatment and 495 control subjects.)

Two primary measures of effectiveness were employed:

- Subsequent driving behaviors, in particular the incidence of DWI's, accidents and other violations were measured for each of the groups.
- In an attempt to evaluate more subtle behaviors, the STR study measured changes in the life activities of the problem drinkers. This consisted of periodic interviews of such items as drinking, health, social, family and economic issues.

B. Method

- Data Collection

For the overall study of problem and social drinkers, two types of data were collected and analyzed.

1. Initial background data, collected prior to the random assignment, when the individual first reported for screening. This also included a check of the individual's driving record.

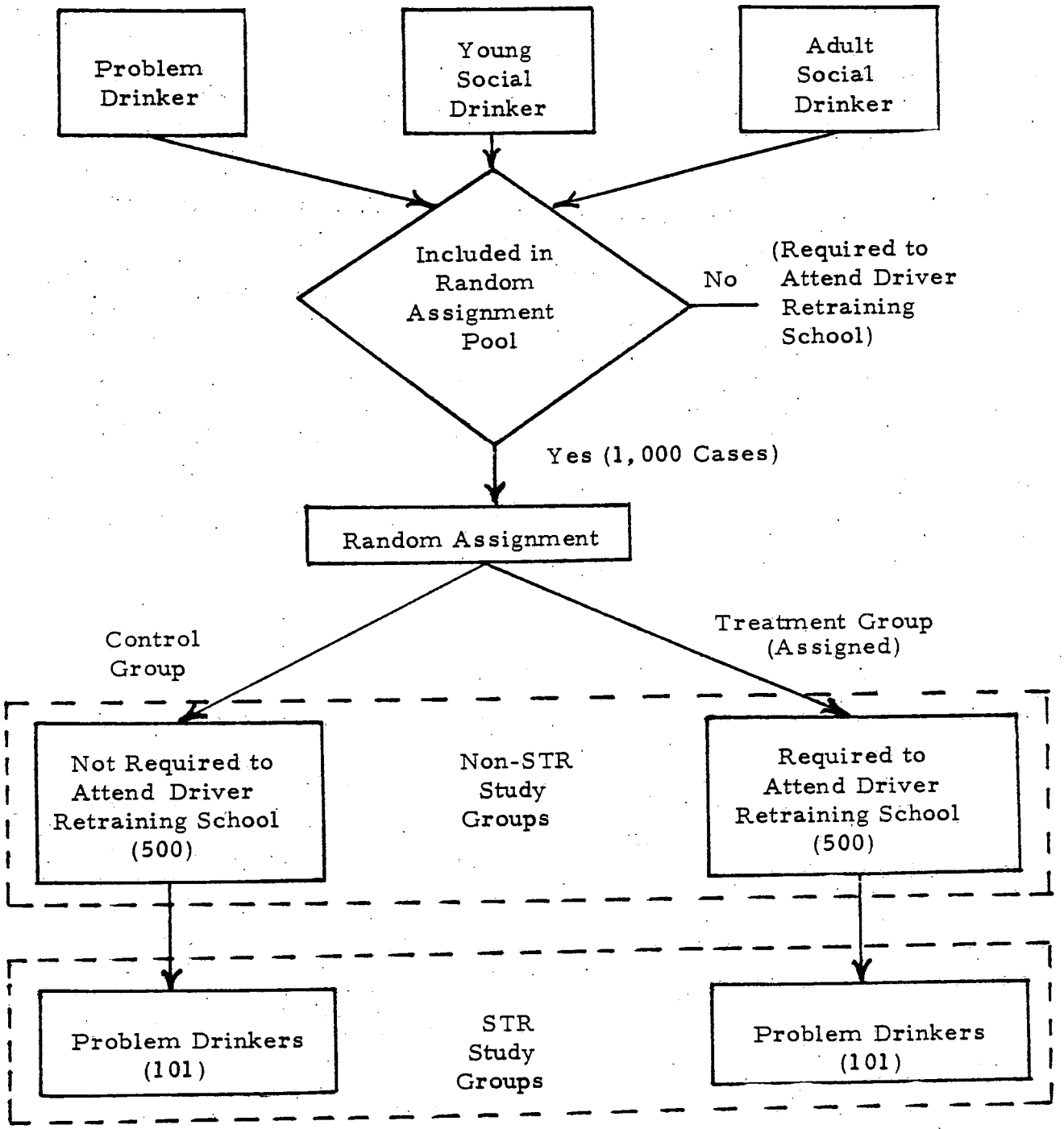

Figure 6. Random Assignment and Composition of the STR and Non-STR Study Groups

2. Subsequent driving records, collected in early 1977 and covering the period from the random assignment through the end of 1976. (Random assignments began in July 1975 and were completed in April 1976).

The initial driving records were manually accessed from the Division of Motor Vehicles driver history files and accident files. The subsequent driving records were first accessed through the state's newly installed computerized violation and accident file. A manual search of the original record system was also performed for cases where no record could be located on the computerized system.

For the STR study of problem drinkers, the same sources as the non-STR overall study were utilized for the initial data. Subsequently, at six month intervals a manual check was made of the driver history and accident files.

The participants in the STR study were also personally interviewed by the Rehabilitation Counselor servicing the area of the state wherein the participant resided. The initial contact was usually accomplished by telephone. A letter of introduction that outlined the purpose and safeguards of the STR study was also supplied to each Rehabilitation Counselor to use at their discretion.

The Rehabilitation Counselor met with the individual and administered the Life Activities Interview (LAI), the Current Status Questionnaire (CSQ) and the Personality Assessment Scale (PAS*). The instruments used in the STR study interviews were selected as a part of the overall (national) evaluation. The national STR study design, and the selection and scoring of the instruments used have been described in detail elsewhere.** The Life Activities Inventory (LAI) is an instrument developed by the University of South Dakota as part of the STR study. According to the authors, the LAI was designed to measure, "overt and potentially observable behavioral activity in those areas of the individual's life situation which were most apt to show the influence of alcohol abuse, and consequently those aspects of the life situation which might reflect change produced by successful short term alcohol rehabilitation interventions."

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*Ellingstad, V.S. Program Level Evaluation of ASAP Diagnosis, Referral and Rehabilitation Efforts: Volume IV, Development of the Short Term Rehabilitation (STR) Study. U.S. Department of Transportation, National Highway Traffic Safety Administration, Report No. DOT-HS-802-045, Sept. 1976.

**Ellingstad, H.S. and Struckman-Johnson, D.C. Short Term Rehabilitation (STR) Study: Abstract File Manual. U.S. Department of Transportation, National Highway Traffic Safety Administration, Contract No. DOT-HS-6-01366, March, 1977.

The Current Status Questionnaire (CSQ) and the Personality Assessment Survey (PAS) are instruments previously used in alcohol treatment evaluations to measure individual life status and change. The CSQ is an 82 item questionnaire which taps such areas as current drinking patterns and problems, social and residential stability, etc.

The PAS is a 151 item instrument containing MMPI type items providing measures on 14 personality dimensions (e.g., self image, phobias, introversion/extroversion, etc.).

Data from the initial interviews in New Hampshire and 10 other sites participating in the STR study were forwarded to the University of South Dakota. Based on the data for 3,681 cases, this organization derived 32 scales using factor analytic procedures and then scored each subject on each scale for the initial, six and 12 month interviews. These scale scores for the New Hampshire subjects were returned to the New Hampshire ASAP and analyzed herein.

One of the requirements for inclusion in the STR study was that the individuals complete the initial interview and agree to participate in the follow-up interviews at six, 12 and 18 month intervals. Problem drinkers who were otherwise eligible for the STR study but declined the initial interview, were excluded from the STR group but were retained in the overall study sample of 1,000 persons.

As expected in a study of this type, not all persons could be reinterviewed in the follow-up periods. This was so as some persons had moved from the state, could not be located, or simply refused to cooperate. As an added analytic complexity, some individuals could not be interviewed in the six month follow-up but were available for the 12-month interview.

The complete attrition data for the control and assigned groups at each of the scheduled interviews (6, 12 and 18 months) are listed in Table 1. (This report does not contain any 18 month interview data, as the interviews were completed after the data analyses.)

- Data Analysis

Data for the overall (non-STR) study and STR study were analyzed separately. The overall study data were analyzed using various cross tabulations of 31 identified variables consisting of background information

Table 1. STR Attrition Data

	CONTROL						ASSIGNED TO						TOTAL					
	6 mos.		12 mos.		18 mos.		6 mos.		12 mos.		18 mos.		6 mos.		12 mos.		18 mos.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
ORIGINAL NUMBER	101	100	101	100	101	100	101	100	101	100	101	100	202	100	202	100	202	100
Completed Interviews	82	81	65	64	55	54	72	71	64	63	60	59	154	76	129	64	115	57
Incomplete	19	19	36	36	46	46	29	29	37	37	41	41	48	24	73	36	87	43
Refusals	3	3	0	0	27	27	7	7	0	0	31	31	10	5	0	0	58	29
No Reply	6	6	21	21	0	0	9	9	18	18	0	0	15	7	39	19	0	0
Unable to Locate	3	3	5	5	3	3	9	9	12	12	0	0	12	6	17	8	3	1
Moved to Other State	5	5	8	8	14	14	3	3	4	4	7	7	8	4	12	6	21	10
Transferred	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
Deceased	2	2	2	2	2	2	0	0	1	1	1	1	2	1	3	1	3	1
Other	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1

(e.g., Age, Sex, BAC) and subsequent activity information (e.g., DWI's, accidents, other violations). In addition, calculations and cross tabulations of the elapsed time for various events (e.g., license restoration, subsequent violations) were made. Tests of significance were made using the chi-square statistic.

The background and subsequent activity data of the STR study were analyzed in the same manner. The information was derived from the tape returned to New Hampshire after coding and processing by the University of South Dakota.

As noted, the interview data previously had been subject to factor analyses by the University of South Dakota, together with over 3,600 cases from eleven sites across the country. After several analyses, six factors from the Life Activities Interview (LAI), seven factors from the Current Status Questionnaire (CSQ) and fourteen factors from the Personality Assessment Scale (PAS) were identified. In addition, five scales were derived from factor analysis of the LAI and CSQ in combined form. These factors are listed in Table 2. The responses of each interviewee were scaled and a score for each of the factors was developed having an overall mean of 500 and a standard deviation of 100.

Upon receipt of these scores from the University of South Dakota, a series of analyses were performed. First, the scores on the initial interview of the 202 New Hampshire subjects on each scale were intercorrelated to determine the viability of the factor analytic solutions for the local data. Second, the initial interview scale means for the experimental and control groups within each instrument were examined using the T^2 statistic to determine the success of the random selection process.

The individual scale scores were then subjected to repeated measures analyses of variance using an unweighted means solution to account for unequal group sizes. These analyses were applied separately to the initial-six months data and to the initial-12 months data.

Finally a "profile analysis"* was also performed which comprised three tests:

a. a test of parallelism (T^2) to determine the distribution over time of the assigned group and control group scores

*See Morrison, D.F. Multivariate Statistical Methods. New York: McGraw-Hill, 1967.

Table 2

Listing of Factors Derived from Interviews

Life Activities Interview (LAI)

I	Employment/Economic Stability
II	Current Drinking Pattern
III	Family Status (Marriedness)
IV	Social Interaction/Involvement
V	Current Physical Health Problems
VI	Immoderate Drinking Behavior

Current Status Questionnaire (CSQ)

I	Marital Problems
II	Control of Drinking Problems
III	Income/Employment Stability
IV	Physical Health
V	Residential Stability
VI	Social Interaction
VII	Drinking Level

Table 2 (contd.)

LAI/CSQ Composite

I	Current Quantity/Frequency of Drinking
II	Employment/Economic Stability
III	Current Physical Health Problems
IV	Social Interaction
V	Current Drinking Problems

Personality Assessment Scale (PAS)

I	Strange, Eccentric Thoughts
II	Anxiety, Depression and Tension
III	Projection of Attributes
IV	Intellectual, Aesthetic Interests
V	Phobias
VI	Self Image
VII	Moralism
VIII	Group Attraction
IX	Introversion/Extroversion
X	Paranoia
XI	Emotional Control
XII	Hypochondria
XIII	Acting out, anxiety
XIV	Sensitivity

b. a test of levels (t test) to determine if there was an overall difference between the levels of the assigned and control groups.

c. a test over time (T^2) to determine if there were differences between baseline, 6 month and 12 month scores.

The profile analysis was conducted using only those individuals who had completed all three interviews (initial, 6 and 12 month).

C. Results

1. Overall Study of Problem and Social Drinkers

a) Baseline Comparisons

To determine that the assigned (i.e., treatment) and control groups were initially similar in composition, the profiles of the two groups were examined. The age distribution for the assigned and control groups are listed in Table 3. No significant differences existed between the groups ($x^2 = 3.76$; d.f. = 9). As in the past, the 20-24 year old age group had the highest representation, accounting for over 20 percent of the participants.

Females comprised 8.9 percent (n =45) of the assigned group and 12.1 percent (60) of the control group. This difference approaches statistical significance ($x^2 = 2.71$; d.f. = 1; $p < .10$) indicating that females represented a somewhat greater proportion of the control group than the assigned group.

Within the assigned group, 38.3 percent (193) were diagnosed as social drinkers and 61.7 percent (311) were problem drinkers. The diagnosis within the control group was equivalent with 34.1 percent (168) social drinkers and 65.8 percent (324) problem drinkers ($x^2 = 1.85$; d.f. = 1, N.S.).

The distribution of blood alcohol concentrations (BAC) taken at the time of the index DWI arrests and listed in Table 4, was also equivalent for both groups ($x^2 = 5.56$; d.f. = 6).

The distributions of the MF-A Alcohol Screening Questionnaire are listed in Table 5. Scores of 16 or more were considered as evidence of problem drinking. There are no differences between the distribution of scores for the assigned and control groups ($x^2 = 2.05$; d.f. = 5; N.S.).

Table 3

Age Distribution of Assigned and Control Groups

Age	Assigned		Control	
	No.	% of Total	No.	% of Total
19 or Less	62	12.3	70	14.2
20-24	117	23.2	111	22.5
25-29	75	14.9	70	14.2
30-34	66	13.1	51	10.3
35-39	53	10.5	50	10.1
40-44	45	8.9	43	8.7
45-49	29	5.8	33	6.7
50-54	25	5.0	31	6.3
55-59	15	3.0	15	3.0
60 and over	17	3.4	19	3.9
	504		493	

Table 4

Blood Alcohol Concentration (BAC) at Index DWI Arrest

BAC	Assigned No.	Assigned % of Total	Control No.	Control % of Total
Less than .10	1	.2	5	1.0
.10 - .14	89	17.6	85	17.2
.15 - .19	183	36.3	168	33.9
.20 - .24	99	19.6	110	22.2
.25 and over	45	8.9	37	7.5
Implied Consent	57	11.3	53	10.7
Unknown	30	6.0	37	7.5
	504		495	

Table 5

MF-A Alcohol Screening Scores

MF-a Score	No.	% of Total	No.	% of Total
5 and Under	6	1.2	7	1.4
6 - 10	104	20.6	113	22.8
11 - 15	152	30.2	146	29.5
16 - 20	123	24.4	120	24.2
21 - 25	64	12.7	66	13.3
26 and Over	55	10.9	43	8.7
	504		495	

The marital status of both groups were equivalent (Table 6, $x^2 = 0.4$; d.f. = 4; N.S.) as was the number of times the individuals in each group were married (Table 7, $x^2 = 1.46$; d.f. = 3; N.S.).

The highest school grade completed by most of the participants was the twelfth grade (Table 8). No difference was found between the assigned and control groups in educational level attained ($x^2 = 2.56$; d.f. = 6; N.S.). or in their stated religious preference (Table 9, $x^2 = 6.11$; d.f. = 4; N.S.).

Most of the participants had current incomes over $200 per week (17.9% of the assigned and 18.4% of the control) and a similar number were unemployed (17.3% of the assigned and 17.4% of the control). The highest income ever earned by both groups was also equivalent with 37.9% of the assigned and 39.0% of the control having had incomes of $200 per week.

Most of the participants had one employer in the past five years (29.4% of the assigned and 29.5% of the control) with the next highest percentages having two employers (23.4% of the assigned and 24.8% of the control). The occupations of the assigned and control groups are listed in Table 10. There was no difference in the distribution of occupations between the groups ($x^2 = 7.12$; d.f. = 15; N.S.)

In summary, comparing the backgrounds of the individuals in the assigned and control groups indicates that with the exception of the sex of the participants, the groups were equivalent. There were somewhat more females in the control group than in the assigned group.

b) Recidivism

As noted earlier, the random selection procedure was in effect from July 1975 until April 1976. The median drivers entered the experimental and control groups sometime in November 1975 and, therefore, had approximately 15 - 16 months of subsequent exposure to the time the follow-up record check was made in April 1977.

Drivers in both the experimental and control groups, of course, had their licenses revoked for at least the first 60 days of "exposure," and in some cases for considerably longer. Table 11 shows the elapsed time from the input DWI conviction until license restoration for the members of the experimental and control groups.

The figures in the table show, firstly, that 212 persons (21 percent of the experimental group and 22 percent of the control group) had not yet had their licenses restored at least one year after their revocation.*

*At the completion of a court imposed revocation period, persons must apply for a new license and provide proof of financial responsibility. These 212 persons either had not reapplied or had not met the financial responsibility requirements.

Table 6

Marital Status

Status	Assigned		Control	
	No.	% of Total	No.	% of Total
Single	188	37.3	191	38.6
Married	192	38.1	186	37.6
Divorced	70	13.9	65	13.1
Separated	29	5.8	31	6.3
Widow(er)	8	1.6	9	1.8
Other or Not Specified	17	3.4	13	2.6
	504		495	

Table 7

Times Married

Times Married	Assigned No.	Assigned % of Total	Control No.	Control % of Total
Never	187	37.1	186	37.6
Once	229	45.4	234	47.3
Twice	57	11.3	50	10.1
Three or More	10	2.0	6	1.2
Other or Not Specified	21	4.1	19	8.8
	504		495	

Table 8

Highest School Grade Completed

Grade	Assigned		Control	
	No.	% of Total	No.	% of Total
1 - 7	20	4.0	18	3.6
8	41	8.1	52	10.5
9 - 11	117	23.2	117	23.6
12	199	39.5	180	36.4
13 - 15	71	14.1	75	15.2
16	25	5.0	27	5.5
17 and Over	13	2.6	12	2.4
Other or Not Specified	18	3.6	14	2.8
	504		495	

Table 9

Religion

Religion	Assigned No.	Assigned % of Total	Control No.	Control % of Total
Catholic	219	43.5	229	46.2
Protestant	192	38.1	198	40.0
Jewish	--	--	1	0.2
Other	30	6.0	23	4.6
None	41	8.1	27	5.5
Unspecified	22	4.4	17	3.4
	504		495	

Table 10

Occupational Classification

	Assigned		Control	
	No.	% of Total	No.	% of Total
Craftsmen and Foremen	85	16.9	89	18.0
Operations (e.g., Machine Operator)	58	11.5	60	12.1
Service Workers	55	10.9	57	11.5
Laborers	54	10.7	56	11.3
Unemployed	52	10.3	43	8.7
Managers, Officers and Proprietors (including farmers)	48	9.5	42	8.5
Unknown	34	6.7	39	7.9
Professional, Technical	34	6.7	27	5.5
Student	20	4.0	21	4.2
Retired	15	3.0	13	2.6
Professional Driver	14	2.8	10	2.0
Housewife	11	2.2	9	1.8
Sales Worker	11	2.2	17	3.4
Other	7	1.4	9	1.8
Military	4	0.8	3	0.6
Private Household	2	0.4	0	--

Table 11

License Revocation Period for
Experimental and Control Groups

Revocation Period*	No. of Cases: Experimental Group	Control Group
1 - 60 days	7	23
61 - 90	106	184
91 - 120	100	69
121 - 150	67	23
151 - 180	26	14
181 - 210	27	20
211 - 240	22	6
241 - 270	8	5
271 - 300	8	6
301 - 330	7	7
331 - 360	5	6
361 - up	16	20
Not Restored	103	109

*As of April 1977
Three cases where restoration date was unknown are excluded.

The revocation period distributions for those who had regained a license are significantly different when the experimental and control groups are compared ($x^2 = 71.7$, d.f. = 11, $p < .01$). The mean time to restoration for the experimental group was 114 days and was 97 days for the control group.

Similarly, in Table 11 it can be seen that 207 of 383 (54 percent) of the control group who were restored, achieved this within 90 days or less. The comparable figure for the experimental group was 28 percent. It appears, therefore, that the procedures associated with schooling and subsequent review served to increase the license revocation period of those involved.

Table 12 shows the number of persons in the experimental and control groups who had subsequent DWI arrests, accidents and other motor vehicle violations, arrayed by the elapsed time to the event from input convictions. Summarizing the figures shows the following:

	DWI Recidivist	
	Yes	No
Experimental	41	463
Control	47	446

$x^2 = .606$, d.f. = 1, N.S.

The recidivisim rate of 8.1 percent in the experimental group is not significantly sifferent from that of 9.5 percent in the control group. As noted in Table 12, the time to recidivism figures for DWI are not significantly different comparing the two groups.

Among the experimental group DWI recidivists, 16 (39 percent) were rearrested during their initial license revocation period while 18 (38 percent) of the control group were similarly rearrested.

	Subsequent Accident Involvement	
	Yes	No
Experimental	46	458
Control	52	441

$x^2 = .568$, d.f. =1, N.S.

Table 12

Subsequent Event and Elapsed Time

Days	No. of Cases					
	DWI		Accident		Other Violation	
	Assign	Control	Assign	Control	Assign	Control
1 - 90	6	5	2	3	18	13
91 - 180	12	9	9	13	14	24
181 - 270	7	8	11	8	15	27
271 - 360	5	10	13	8	20	19
361 +	11	15	11	20	20	28
Unspecified					1	2
	41	47	46	52	88	113
	$x^2 = 2.47$		$x^2 = 4.85$		$x^2 = 5.40$	
	d.f. = 4		d.f. = 4		d.f. = 4	
	N.S.		N.S.		N.S.	

These figures translate to 9.1 percent subsequent accident involvement for the experimental group and 10.5 percent rate for the control group. These rates do not differ significantly, nor do the elapsed time to accident figures in Table 12.

Only three of 46 subsequent accidents among experimental group members (6.5 percent) were reported to have occurred during license revocation. For the control group, eight of 52 (15.4 percent) accidents were reported during license revocation.

	Subsequent Motor Vehicle Violations	
	Yes	No
Experimental	88	416
Control	113	380

$x^2 = 4.62$, d.f. = 1, $p < .05$

The subsequent violation rate of 17.5 percent in the experimental group was significantly lower than the 22.9 percent rate for the control group. The elapsed time to violation figures in Table 12 are not significantly different, however.

Among the experimental group 35 of the 88 subsequent violations (39.8 percent) occurred during license revocation while 26 of 113 (23.0 percent) violations in the control group took place during revocation.

Arraying the violations of the experimental and controls groups according to whether they occurred during revocation or not, shows the following:

	Violations	
	During Revocation	After License Revocation
Experimental	35	53
Control	26	87

$x^2 = 6.58$, d.f. = 1, $p < .05$

The figures above show no overall differences between the experimental and control groups in terms of the traffic safety measures of DWI recidivism and subsequent accidents. The difference between the two groups in the rate of other motor vehicle violations is believed to be an artifact resulting from later license restoration in the experimental group. That is, if one assumes a lesser rate of driving and violations among persons whose licenses have been revoked, then the group with longer revocations (i.e., Assigned) should have more violations while revoked, but fewer violations overall.

The fact that almost 40 percent of the DWI rearrests and 30 percent of the other motor vehicle violations recorded by those in the study took place during license revocation, supports the view that revoked or suspended drivers do considerable driving. The fact that relatively few accidents were reported during revocation, may be related to failure to report accidents. That is, violations are recorded because of police involvement. Accidents, on the other hand, frequently are noted only in motorist reports with persons under revocation being less inclined to comply with accident reporting requirements.

c) Recidivism and Diagnosis

As noted earlier, approximately 62 percent of the assigned group and 66 percent of the control group were problem drinkers. The following shows recidivism by diagnosis and group.

	DWI Recidivism			
	Problem Drinkers		Social Drinkers	
	No.	Rate	No.	Rate
Assigned	30	9.6%	11	5.7%
Control	37	11.4%	10	5.9%

These figures show no difference in recidivism between the problem drinkers in the two groups or social drinkers in the two groups. On the other hand, the recidivism rate of the problem drinkers is almost twice that of the social drinkers, thus indicating some success in the diagnostic process.

The following shows the DWI recidivisim of the assigned and control groups as a function of blood alcohol concentration in the initial (or entry) DWI arrest:

BAC	Assigned Group		Control Groups	
	No.	Rate	No.	Rate
.14 or less	8	8.9%	4	4.4%
.15 -.19	17	9.3%	11	6.5%
.20 or more	9	6.2%	18	12.2%
Refused	5	8.8%	7	13.2%

$x^2 = 7.58$, d.f. = 3, $p < .10$

As the number of cases involved is small, care must be taken in interpretation. However, it does appear that the recidivism rate of those who had input arrest BACs of .20 or more, or who refused the test, was lower if these persons were in the assigned group rather than the control group.

Regarding those who had index arrest BAC's of .20 or more and, therefore, were diagnosed as problem drinkers on at least this basis, the recidivism figure are as follows:

	DWI Recidivist	
	Yes	No
Assigned	9	135
Control	18	129

$x^2 = 3.11$, d.f. = 1, $p < .10$

This distribution approaches statistical significance with 6.2% of the assigned drinkers with BAC's over .20 recidivating, compared to 12.2% of control drinkers in the same category. It should, however, be noted that among the assigned group there were ten individuals who, following the Driver Retraining School experience, were referred for evaluation to the Services to Drinking Drivers (SDD) program, which began operations in February 1976. Two of these had their licenses restored without further treatment and eight had their licenses restored on conditions that they participate in the SDD program. None of these ten people recidivated during the exposure period. This additional contact must be considered as part of the treatment program for these individuals and may also have played some role in the lower recidivism rate for the assigned group.

Recidivism in the assigned and control groups as a function of individuals' MF-A score was as follows:

MF-A Score	Assigned Group		Control Group	
	No.	Rate	No.	Rate
1 - 9	4	6.2%	4	5.3%
10 - 15	14	7.1%	19	10.1%
16 - 20	9	7.3%	10	8.3%
21 - up	14	11.8%	14	12.8%

($x^2 = 0.40$, d.f. = 3, N.S.)

These data show no difference in recidivism between the two groups related to MF score. Pooling the data for the two groups yields:

MF-A Score	DWI Recidivist		
	Yes	No	Rate
1 - 9	8	132	5.7%
10 - 15	33	354	8.5%
16 - 20	19	224	7.8%
21 - up	28	200	12.3%

$x^2 = 5.42$, d.f. = 3, N.S.

The figures show that the MF-A in the present application was not predictive of future DWI events. That is, statistically, those with higher MF scores were not more likely to recidivate.

These results indicate that among the problem drinkers, those with initial BAC's of .20 and over who were assigned to the Driver Retraining School were less likely to recidivate than an equivalent group of control problem drinkers.

In summary, although there were no differences between the assigned and control groups in the major traffic safety measures of DWI recidivism and subsequent accidents, there was one subgroup of participants namely, problem drinkers with high initial BAC's that were assigned, who had fewer recidivists than the equivalent control group.

2. STR Study of Problem Drinkers

a) Correlation Among Scales

The intercorrelations of the 32 scales in the STR measurement system for the 202 New Hampshire subjects on the initial interview are shown in Table 13. It can be seen in the table that, as would be expected from the factor analytic development, the within-instrument scales on the LAI, CSQ and LAI/CSQ are generally uncorrelated. Several of the correlation coefficients within the PAS are relatively robust, however.

The LAI and CSQ instruments generally tap similar aspects of life status. As expected, several of the scales from the two instruments are at least modestly correlated and are similarly correlated with the combined LAI/CSQ scales.

With some exceptions, the PAS scales are uncorrelated with other scales. Thus, for the most part, this instrument appears to be tapping different domains than the other instruments.

b) Baseline Comparisons

The results of the T^2 tests on the mean rectors for the LAI, CSQ and LAI/CSQ instruments verified that the experimental and control groups were equivalent at the time of the random selection process. As noted earlier, subsequent analyses are confounded by the loss of subjects at the six and 12 month follow-up, and by the fact that a few subjects, not available at six months, were interviewed at 12 months.

c) Subsequent Comparisons

The results of examining the subsequent driving activities of the individuals in the STR study showed no difference between the groups. Table 14 lists the number of DWI's, accidents, reckless and moving violations and other violations for each of the groups. The results of chi-square tests are also listed indicating no significant differences were found.

Table 13. Intercorrelations of the STR Measurement Scales

	LAI					CSQ							LAI/CSQ					PAS												
	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	5	1	2	3	4	5	6	7	8	9	10	11	12	13	14
LAI																															
1	060	013	114	-085	050	080	089	722	256	219	137	-082	069	945	-144	187	-003	-107	-158	145	-024	017	-169	-038	-076	068	125	019	-178	019	038
2		-008	044	-041	159	-144	005	014	041	-057	050	-519	925	051	-039	032	087	-022	-088	091	142	071	-006	029	053	-046	-069	-016	-117	048	044
3			106	-027	-070	572	026	153	031	083	146	112	-049	061	-022	229	-084	038	-157	175	069	-034	-070	-064	-046	023	088	-017	003	-035	180
4				102	-044	-044	043	157	231	-195	426	-058	014	090	-078	906	017	-066	-129	134	-245	-170	-149	259	-257	325	245	-046	-222	077	-087
5					234	070	-328	-213	-622	-122	-212	002	-043	-130	958	-046	371	150	537	-308	113	233	231	-028	150	-262	-339	322	459	-330	-214
6						-185	-438	-015	-035	-165	-049	-336	236	015	197	072	804	092	154	-032	049	028	056	165	-015	-122	-069	059	088	-072	-097
CSQ 1							026	049	-081	165	-045	261	-202	113	084	036	-129	011	052	037	-014	083	021	-154	011	-033	-026	-018	129	-157	036
2								126	303	128	317	159	-068	100	-330	122	-818	-145	-375	218	-043	-032	-227	-119	-186	217	273	-171	-267	121	236
3									367	020	277	-074	041	831	-282	262	-076	-154	-388	232	-001	-125	-204	043	-133	103	269	-069	-241	077	089
4										048	335	-072	059	277	-767	236	-233	-136	-532	315	-136	-234	-293	152	-211	204	339	-175	-610	231	181
5											002	046	-049	176	-090	-103	-182	-019	-131	103	-030	008	-097	-111	-033	011	046	-096	-070	056	177
6												-054	012	175	-240	635	-246	-268	-502	310	-273	-214	-407	227	-486	478	430	-196	-345	276	157
7													-761	-054	023	-070	-292	045	022	-021	-106	022	070	-201	046	-032	-046	043	110	-058	-021
LAI/CSQ 1														060	-046	006	167	-032	-077	071	168	045	-013	044	-036	-036	-065	-040	-110	051	021
2															-185	181	-047	-156	-246	187	-006	-047	-195	-037	-083	090	170	-032	-183	037	065
3																-102	345	135	533	-312	121	215	222	-051	156	-234	-324	264	483	-313	-195
4																	-061	-120	-224	213	-293	-218	-255	239	-342	417	323	-082	-236	121	-030
5																		160	374	-190	089	088	215	154	138	-267	-226	173	241	-173	-203
PAS 1																			469	-342	032	236	355	-046	190	-200	-387	262	584	-404	-073
2																				-485	156	346	557	-065	365	-407	-575	377	637	-499	-356
3																					-077	-254	-247	123	-139	262	562	-200	-436	370	375
4																						111	248	047	272	-412	-204	230	193	-156	133
5																							293	-248	073	-253	-432	358	260	-339	-116
6																								-077	445	-449	-397	435	388	-273	-052
7																									-001	066	210	-014	-178	131	117
8																										-345	-241	310	232	-178	-074
9																											306	-246	-330	299	-033
10																												-326	-490	429	292
11																													232	-355	-002
12																														-435	-254
13																															247
14																															

Leading decimal points are omitted from the figures in the table.

An r of .138 is significant at p = .05, for 200 degrees of freedom.

Table 14

Subsequent Driving Activities--STR Study

	No. of Cases		Statistical
	Assign	Control	Data
DWI	13	10	$x^2=0.44$, d.f. =1, N.S.
Accidents	4	7	$x^2=0.87$, d.f. =1, N.S.
Reckless and Moving Violations	7	10	$x^2=0.57$, d.f. =1, N.S.
Other Violations	9	4	$x^2=2.06$, d.f. =1. N.S.

The first phase of examining the STR interview data subjected the results of each of the scales to an analysis of variance using a repeated measures design. Because of the differential loss of subjects, the analyses comparing the baseline with the six-month interview were done separately from the comparison of the baseline with the 12 month interviews. To account for unequal group sizes, a weighted-means solution was employed.*

The basic analytic framework was as follows:

Source of Variation	Degree of Freedom
Between subjects	
A (Groups)	1
Subjects within groups	N-2
Within subjects	
B (Time Period)	1
AB	1
B x subjects within groups	N-2

The subjects within groups mean square was used to test factor A (Groups) while the B x subjects within group term was used to test factor B (Time Period) and the AB interaction. Note that in this framework, a significant AB interaction would be indicative of differential change between the experimental and control groups.

The results for the analyses of the baseline and six-month data are in Table 15, while the baseline and 12-month data are in Table 16. It can be seen in Tables 15 and 16 firstly that only two of the PAS scales produced significant changes over time period and none of the groups-by-time-period interactions were significant. The PAS scales which showed changes over time were scale V (phobias) in the direction that the subjects expressed fewer fears in the follow-up interviews and scale IV (introversion/extroversion) in the direction that the subjects were more extraverted in the follow up periods. The absence of any significant interaction terms indicates no differential changes as measured by the PAS.

*Winer, B.J. Statistical Principles in Experimental Design. New York, McGraw-Hill, 1971

Table 15

Results of Analyses of Variance
Baseline and Six Month Measurements

		ASSIGNED			CONTROL			F		
		N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
	LAI									
I	Employment/Economic Stability	72	506	495	82	494	489	--	--	--
II	Current Drinking Pattern	72	533	497	82	506	498	--	9.32**	3.77**
III	Family Status	72	471	475	82	496	482	1.4	--	2.68
IV	Social Interraction	72	505	492	82	534	540	7.18**	--	1.59
V	Health Problems	72	554	527	82	563	522	--	9.53**	--
VI	Immoderate Drinking Behavior	72	506	465	82	477	467	2.59	13.25***	4.98**
	CSQ									
I	Marital Problems	31	483	489	33	490	502	--	--	--
II	Control of Drinking	73	482	522	81	516	540	4.41**	19.49***	1.22
III	Income/Employment Stability	74	485	487	82	484	478	--	--	--
IV	Physical Health	74	460	485	80	487	498	1.86	5.33**	--
V	Residential Stability	74	538	534	82	522	527	1.47	--	--
VI	Social Interaction	74	487	497	82	507	513	1.70	1.64	--
VII	Drinking Level	74	488	514	81	514	518	1.24	3.50*	1.88

Table 15

Results of Analyses of Variance
Baseline and Six Month Measurement
(continued)

		ASSIGNED			CONTROL			F		
		N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
	LAI/CSQ									
I	Quantity/Frequency Drinking	72	524	487	82	501	491	--	9.98***	3.29*
II	Employment Stability	72	494	488	82	485	475	--	--	--
III	Physical Health	72	563	527	82	561	527	--	10.91***	--
IV	Social Interaction	72	499	494	82	523	531	4.27**	--	--
V	Drinking Problems	72	507	462	82	475	456	4.37**	29.60***	4.90**
	PAS									
I	Strange, Eccentric Thoughts	74	505	499	81	505	490	--	1.30	--
II	Anxiety, Depression Tension	74	523	511	82	501	491	1.50	2.32	--
III	Projection of Attributes	74	487	503	82	513	516	1.68	2.13	--
IV	Intellectual, Aesthetic Interests	74	508	498	82	505	509	--	--	1.88
V	Phobias	74	495	486	82	484	467	--	4.49**	--
VI	Self Image	74	526	520	82	505	499	1.92	--	--
VII	Moralism	74	504	505	82	491	506	--	1.48	1.13
VIII	Group Attraction	74	514	504	82	497	496	--	--	--

Table 15

Results of Analyses of Variance
Baseline and Six Month Measurements
(continued)

	ASSIGNED			CONTROL			F		
	N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
PAS continued									
IX Introversion/ Extroversion	74	469	489	82	497	509	2.51	7.60***	--
X Paranoia	74	480	495	82	502	508	1.68	1.32	--
XI Emotional Control	74	523	514	82	504	490	2.30	2.27	--
XII Hypochondria	74	523	513	82	517	499	--	3.64*	--
XIII Acting out Anxiety	74	494	493	82	508	503	--	--	--
XIV Sensitivity	74	488	499	82	497	510	--	2.43	--

*** $p < .01$
** $p < .05$
* $p < .10$

Omitted F values are less than 1.0

Table 16

Results of Analyses of Variance
Baseline and 12 Month Measures

		ASSIGNED			CONTROL			F		
		N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
	LAI									
I	Employment/Economic Stability	63	507	508	63	491	501	--	--	--
II	Current drinking Pattern	63	529	491	63	503	483	1.25	10.06***	--
III	Family Status	63	468	475	63	491	481	--	--	1.67
IV	Social Interaction	63	521	526	63	526	516	--	--	--
V	Health Problems	63	553	534	63	553	534	--	2.39	--
VI	Immoderate Drinking Behavior	63	515	465	63	484	461	3.21*	15.71***	2.15
	CSQ									
I	Marital Problems	26	497	510	24	489	501	--	--	--
II	Control of Drinking	64	472	519	61	513	543	5.35**	26.06***	1.29
III	Income/Employment Stability	64	483	504	62	475	476	--	1.36	1.12
IV	Physical Health	64	463	466	60	484	498	1.85	--	--
V	Residential Stability	64	545	549	62	525	535	2.90*	1.32	--
VI	Social Interaction	63	492	502	62	505	496	--	--	1.54
VII	Drinking Level	64	493	518	62	513	544	2.71	7.43***	--

Table 16

Results of Analyses of Variance
Baseline and 12 Month Measures
(continued)

		ASSIGNED			CONTROL			F		
		N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
	LAI/CSQ									
I	Quantity/Frequency Drinking	63	521	482	63	499	465	1.71	14.57***	--
II	Employment Stability	63	495	498	63	483	483	--	--	--
III	Physical Health	63	560	537	63	554	534	--	2.91*	--
IV	Social Interaction	63	510	522	63	513	503	--	--	1.76
V	Drinking Problems	64	520	473	62	477	454	8.15***	23.90***	2.81*
	PAS									
I	Strange, Eccentric Thoughts	63	498	495	62	503	483	--	1.53	--
II	Anxiety, Depression Tension	64	521	510	62	496	486	1.6	1.98	--
III	Projection of Attributes	64	485	474	62	510	520	4.00**	--	2.21
IV	Intellectual, Aesthetic Interests	63	506	501	62	507	519	--	--	1.52
V	Phobias	63	490	455	62	487	466	--	13.30***	--
VI	Self Image	64	527	521	62	500	499	1.78	--	--
VII	Moralism	64	511	506	62	483	493	1.62	--	1.14
VIII	Group Attraction	64	515	514	62	505	510	--	--	--

Table 16

Results of Analyses of Variance
Baseline and 12 Month Measures
(continued)

	ASSIGNED			CONTROL			F		
	N	Base-line Mean	Six Month Mean	N	Base-line Mean	Six Month Mean	(A) Groups	(B) Time Period	AB
PAS continued									
IX Introversion/ Extroversion	63	483	484	62	492	511	2.04	5.36**	--
X Paranoia	64	482	488	62	503	507	1.52	--	--
XI Emotional Control	63	526	512	62	512	496	--	2.51	--
XII Hypochondria	64	523	514	62	518	512	--	--	--
XIII Acting out Anxiety	64	494	500	62	518	512	2.19	--	--
XIV Sensitivity	64	492	485	62	501	518	1.48	--	2.31

*** $p < .01$
** $p < .05$
* $p < .10$

Omitted F values are less than 1.0

Regarding the LAI and CSQ scales, it can be seen in Tables 15 and 16 that the various health scales showed improvement over time, but not differentially between groups. Positive findings may be noted regarding the various drinking scales. For example, the LAI/CSQ scale V--drinking problem shows greater improvement for the assigned than for the control groups in the follow up interviews. Support of this finding can also be found in LAI/CSQ scale I (Quantity/Frequency of drinking) at the six month follow up and in LAI scale VI (immoderate drinking behavior) at the six month follow up.

By the twelve month interview, however, these findings are less pronounced with only the LAI/CSQ scale V indicating a difference that approached significance. These results would indicate that the treatment had a short term (i.e., 6-month) effect in moderating the drinking behavior of the attendees. It should, however, be noted that in most cases the interviewer who gathered the data from both the assigned and control groups was also the instructor who conducted the Driver Retraining School sessions attended by the assigned group members. Whether this had any effect in producing reports of moderated drinking behavior is not possible to determine.

The final phase of examining the STR interview data employed the profile analysis technique on the LAI, CSQ and composite LAI/CSQ instruments. Due to the absence of relevant findings on the analyses of variance, the PAS instrument was not subjected to the profile analysis. As previously noted this technique was only applicable for the cases wherein all three interviews were available (i.e., initial, 6 month and 12 month). The average number of cases included for each of the two groups was 58; fewer than the average of 73 available for the 6 month analysis of variance and also less than the average of 63 available for the 12 month analysis of variance.

The results of the analysis fell into three categories; those where no change was detected, those where there was a change for both groups and, of primary importance, those where there was a change for either the assigned or control group. The results are listed in Tables 17 - 19.

The tables lists the results as follows:

a. T^2 test of parallelism, wherein a significant F value indicates a differential rate of change for the assigned and control groups, which is the primary measure of interest.

Table 17

LAI, CSQ and LAI/CSQ Scales--
No detected change

Scale	Descriptions	Statistical Data
LAI Scales		
LAI I	Employment/Economic Stability	a. F=0.12, d.f. =2&113, N.S. b. t =1.72, d.f. =114, N.S. c. F=1.73, d.f. =2&113, N.S.
LAI III	Family Status	a. F=1.57, d.f. =2&113, N.S. b. t =0.70, d.f. =114, N.S. c. F=0.07, d.f. =2&113, N.S.
CSQ Scales		
CSQ III	Income/Employment Stability	a. F=1.46, d.f. =2&115, N.S. b. t =1.37, d.f. =116, N.S. c. F=1.13, d.f. =2&115, N.S.
CSQ IV	Current Physical Health	a. F=0.25, d.f. =2&113, N.S. b. t =1.29, d.f. =114, N.S. c. F=2.22, d.f. =2&113, N.S.
CSQ V	Residential Stability	a. F=0.39, d.f. =2&115, N.S. b. t =1.46, d.f. =116, N.S. c. F=1.34, d.f. =2&115, N.S.
CSQ VI	Social Interaction	a. F=0.77, d.f. =2&114, N.S. b. t =0.36, d.f. =115, N.S. c. F=0.35, d.f. =2&114, N.S.
LAI/CSQ Scales		
LAI/CSQ II	Employment/Economic Stability	a. F=0.62, d.f. =2&113, N.S. b. t =1.78, d.f. =114, N.S. c. F=1.27, d.f. =2&113, N.S.

Table 18

LAI, CSQ and LAI/CSQ Scales--
Changes for both Groups

Scale	Description and Change	Statistical Data
LAI Scales		
LAI II	Decrease in quantity/frequency of alcohol consumption	a. $F=2.30$, d.f. =2&113, N.S. b. $t=0.54$, d.f. =114, N.S. c. $F=5.30$, d.f. =2&113, $p<.01$
LAI V	Current Physical Health	a. $F=0.35$, d.f. =2&113, N.S. b. $t=0.20$, d.f. =114, N.S. c. $F=2.99$, d.f. =2&113, $p<.10$
LAI VI	Decrease in immoderate drinking behavior	a. $F=2.18$, d.f. =2&113, N.S. b. $t=0.23$, d.f. =114, N.S. c. $F=6.84$, d.f. =2&113, $p<.01$
CSQ Scales		
CSQ II	Increase in control over drinking	a. $F=1.00$, d.f. =2&113, N.S. b. $t=1.88$, d.f. =114, N.S. c. $F=1.33$, d.f. =2&113, $p<.001$
CSQ VII	Increase in abstention from drinking	a. $F=0.69$, d.f. =2&114, N.S. b. $t=1.35$, d.f. =115, N.S. c. $F=4.44$, d.f. =2&114, $p<.05$
LAI/CSQ Scales		
LAI/CSQ I	Decrease in quantity/frequency of drinking	a. $F=3.45$, d.f. =2&113, N.S. b. $t=0.63$, d.f. =114, N.S. c. $F=7.39$, d.f. =2&113, $p<.001$
LAI/CSQ III	Decrease in health complaints	a. $F=0.03$, d.f. =2&113, N.S. b. $t=0.14$, d.f. =114, N.S. c. $F=3.58$, d.f. 2&113, $p<.05$

Table 19

LAI, CSQ and LAI/CSQ Scales--
Changes for One Group

Scale	Description and Change	Statistical Data
LAI IV	Increase in social interaction for assigned group	a. $F=3.78$, d.f. =2&113, $p < .05$ b. $t=0.87$, d.f. =114, N.S. c. $F=0.01$, d.f. =2&113, N.S.
LAI/CSQ IV	Increase in social interaction for assigned group	a. $F=3.28$, d.f. =2&113, $p < .05$ b. $t=0.32$, d.f. =114, N.S. c. $F=0.41$, d.f. =2&113, N.S.
LAI/CSQ V	Decrease in alcohol/drinking problems	a. $F=2.93$, d.f. =2&113, $p < .10$ b. $t=1.95$, d.f. =114, N.S. c. $F=14.21$, d.f. =2&113, $p < .001$

b. t test of levels, wherein a significant t value indicates a difference between the overall means of the assigned and control groups.

c. T^2 test over time, wherein a significant F value indicates that there was a difference in the combined population means between the baseline, 6 month and 12 month data.

The scales where no change was detected are listed in Table 17. On all three instruments, the scales pertaining to employment and economic stability were found not to have changed (LAI I, CSQ III, LAI/CSQ II). Other scales measuring family status (LAI III), health (CSQ IV), residential stability (CSQ V) and social interaction (CSQ VI) also did not change.

The scales wherein changes were detected for both groups are listed in Table 18. The common element in five of the seven scales was the pattern of alcohol consumption. In these scales, all of the changes indicated a general decrease in the amount and frequency of alcohol consumption. Two scales related to health (LAI V, LAI/CSQ III) showed a decrease in reports of problems.

The scales wherein a change was detected for one of the groups are listed in Table 19. There was an increase in the social interaction of the assigned group (LAI IV and LAI/CSQ IV). Both these scales used many of the same interview items and were, therefore, measuring essentially the same thing. The change indicated that those who were assigned to attend the Driver Retraining School tended to become more outgoing, gregarious and socially active over the twelve month period than those in the control group. This finding could have resulted from the fact that the assigned group was required to attend a somewhat "social gathering" in the form of the Driver Retraining School. This five-week experience, in which they were encouraged to speak and react to others, may indeed have made them more socially outgoing than they previously had been.

The other scale in which a change was detected was the composite LAI/CSQ V scale measuring current drinking problems. There was a decrease in reports of drinking problems for the assigned group that approached statistical significance. This finding matches that found in the analysis of variance (ANOVA) using the baseline and 12 month data.

There were, however, some differences between the findings of the ANOVA and that of the profile analysis in particular in the area of social interaction. These differences can most probably be attributed to

to differences in the sample size used in the analyses. As previously noted, the average number of cases available for the profile analysis was 58. This compares to 63 for the 6 month ANOVA and 73 for the 12 month ANOVA which could account for the different findings.

In summary, the STR study of life activities indicated that those who were assigned to the Driver Retraining Schools, reported greater control of their drinking problems than the control group. It appears, however, that this effect may be of a short term nature, (i.e., of a six month duration), since at the twelve month interview control of problem drinking was found only using the composite LAI/CSQ instrument and at a lower confidence level than after the six month interview. In addition, there was also an indication using the profile analysis, that those who were assigned reported greater social interaction with others.

The key results of the overall study of social and problem drinkers and of the STR study of problem drinkers were as follows:

The assigned and control groups used in both studies were essentially equivalent.

No major differences were found between the comparison groups in the primary traffic safety measures of DWI recidivism and subsequent accidents.

Using recidivism as a measure of problem drinking, the initial diagnosis based on BAC was more successful than the diagnosis based on the MF-A score.

Problem drinkers, with initial BACs of .20 or more, who were assigned, appeared to have fewer subsequent DWIs than an equivalent control group.

Problem drinkers who were assigned reported greater control over their drinking problems than the control group, however, this effect diminished after one year.

Problem drinkers who were assigned reported greater amounts of social interaction than the problem drinkers in the control group.

In terms of the basic question of the effectiveness of the Driver Retraining School, the measures and techniques used in the present studies

provided some limited evidence as to the school's effectiveness. Although there is much anecdotal and personal evidence from school attendees supporting the Driver Retraining School, these studies did not show a difference between assigned and control groups in the primary measures of subsequent DWIs and accidents. The finding, however, that some problem drinkers who were assigned had fewer subsequent DWI's and problem drinkers reported greater short term control of drinking, and reported becoming more socially outgoing was an important element in helping these people with their drinking/driving problem.

Speculation as to the reason why stronger evidence could not be found to support the effectiveness of the schools includes the following:

a. Drinking patterns are deeply ingrained in our society and probably in each of the individuals who were part of these studies. A five-session course may not be enough of a "treatment" to modify these patterns of behavior.

b. Although the life activities information was an attempt to measure items other than infrequent driving events, the tools may still be too course to measure subtle changes that may have resulted from school attendance.

In conclusion, the rehabilitation countermeasure provided an educational option for dealing with DWI offenders. The two studies reported herein indicated that some problem drinkers assigned to the Driver Retraining School had fewer subsequent DWIs and had made what are considered some rehabilitative short term life activities changes.