

FIELD EVALUATION OF COURT PROCEDURES FOR  
IDENTIFYING PROBLEM DRINKERS

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16. Abstract <p>Twelve Alcohol Safety Action Projects cooperated in field evaluation of HSRI-developed questionnaire and interview protocols for identifying problem drinkers. Responses from 709 Driving While Intoxicated defendants from three ASAPs, with differing demographic profiles and score distributions, were analyzed. To validate the test a composite criterion, constructed from blood alcohol concentration at time of arrest and number of previous DWI and other alcohol offenses, was used to evaluate the test predictions. Validity and reliability data indicate the protocols provide useful performance, particularly when combined with other generally available criteria.</p> <p>Additionally, ASAP users were surveyed to determine their judgments about the operational effectiveness of the identification procedures. Results from 57 respondents in 12 ASAPs indicate that the tests are well received and of particular use in training court workers. An improved scoring key and a Spanish translation of the questionnaire were prepared, and questionnaire scoring templates were constructed. Reduced cut-off scores and re-wording of troublesome questionnaire items were recommended for improving diagnostic effectiveness.</p>			
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## PREFACE

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## CONTENTS

Preface	iii
List of Tables	iv
List of Figures	v
INTRODUCTION	1
Objectives	1
Background	1
VALIDITY AND RELIABILITY ESTIMATES OF THE HSRI PROTOCOL	7
The Data Base	7
Description of ASAP Samples	8
Development of an External Criterion	13
Administration of the HSRI Test	15
Distribution of HSRI Test Scores	16
Test Battery Validity	17
Effects of Changing the HSRI Test Cut-off Scores	25
Item Analysis	34
Evaluation of Test Battery Weights	37
Test Reliability	39
SURVEY OF OPERATIONAL CONSIDERATIONS	41
Survey Results	42
Interviewer Characteristics	42
Administration of the Questionnaire and Interview	43
Rating of the Questionnaire and Interview	44
Treatment-Related and Affective Considerations	46
Specific Content and Scoring Considerations	47
Scoring Considerations	49
Summary of Interviewer Survey	50

DISCUSSIONS AND CONCLUSIONS	53
RECOMMENDATIONS	57
Appendix A - Survey of Operational Considerations	
Appendix B - Revised Questionnaire	
Appendix C - Spanish Version of Questionnaire	
REFERENCES	



## LIST OF TABLES

Table		Page
1	Some Characteristics of the ASAP Samples	9
2	Interaction of Driver Age with Other Variables: Fairfax	11
3	Interaction of Driver Age with Other Variables: San Antonio	12
4	Interaction of Driver Education with Other Variables: San Antonio	12
5	Test Score Means and Standard Deviations by ASAP	17
6	Test Scores vs. Criteria Classifications by ASAP	18
7	Current Cut-Off Scores of HSRI Test	20
8	Test Score Correlations with Criterion	25
9	Test Classification vs. Criterion by ASAP: Current Cut-Offs	26
10	Mean Test Classification vs. Criterion: Current Cut-Offs	26
11	Test Classification vs. Criterion by ASAP: Revised Cut-Offs	29
12	Mean Test Classification Criterion: Revised Cut-Offs	29
13	Test Classification vs. Criterion by ASAP: Recommended Cut-Offs	30
14	Mean Test Classification vs. Criterion: Recommended Cut-Offs	30
15	Interaction of Driver Education with Test Classification: San Antonio	33
16	Questionnaire Classification vs. Criterion by ASAP: Recommended Cut-Offs	35
17	Mean Questionnaire Classification vs. Criterion: Recommended Cut-Offs	35
18	Interview Classification vs. Criterion by ASAP: Recommended Cut-Offs	36
19	Mean Interview Classification vs. Criterion: Recommended Cut-Offs	36
20	Test Variables Correlations with Modified Criterion by ASAP	38

Table		Page
21	Split Half Corrected Estimates of Reliability	40
22	Questionnaire and Interview Administration	45
23	Interviewer Assessment of Instrument Diagnostic Capability	45

#### LIST OF FIGURES

Figure		Page
1	Discrimination Between Social and Problem Drinkers: Fairfax	22
2	Discrimination Between Social and Problem Drinkers: New Orleans	23
3	Discrimination Between Social and Problem Drinkers: San Antonio	24

## INTRODUCTION

### Objectives

The principal objectives of this study were (1) to conduct a field evaluation of the validity and reliability of the questionnaire and interview portion of procedures for identifying problem drinkers in a court setting and (2) to determine the operational acceptability and practicality of these procedures among court workers using them in NHTSA's Alcohol Safety Action Projects. Secondary objectives included the preparation of a Spanish version of the questionnaire and construction of scoring template sets to accurately and quickly score questionnaire results.

### Background

In order to deal effectively with drinking drivers convicted of Driving While Intoxicated (DWI) or related offenses, it has been clearly recognized that it is necessary to differentiate between problem drinkers and social drinkers in a court setting. Even with limited treatment alternatives available in a jurisdiction, the ability to make this discrimination is of considerable practical importance in placing defendants into appropriate remedial programs.

Accordingly, in a previous study (Mortimer, Filkins and Lower, 1971) a set of procedures was developed for the identification of problem drinkers. The procedures were to be relatively simple to administer, not be excessively time consuming, use inexpensive materials, and be capable of making a valid discrimination between problem and social drinkers.

Mortimer, R.G., Filkins, L.D. and Lower, J.S. Development of Court Procedures for Identifying Problem Drinkers. Final Report, Highway Safety Research Institute, The University of Michigan, Ann Arbor, November 1971.

The results of that work, aside from the summary report referred to above, were provided in the form of an interim report describing the validation studies conducted (Mortimer, et.al., 1971) and three manuals (Kerland, et.al., 1971;- Mudge, et.al., 1971; and Lower, et.al., 1971) consisting of the diagnostic protocols and other recommended practices, supplementary information, and the protocol scoring keys, respectively.

Since the intitial study used samples of social drinkers and persons attending alcoholism treatment facilities either as in- or out-patients, the operational validity of the procedures could not be readily generalized to drivers convicted of driving-drinking offenses. Further, it was recognized at the outset that defendants in a DWI proceeding, who may perceive that their best interests are served by concealing their problem drinking, might respond very differently to probing questions about their drinking behavior than others not in a threatening situation. Therefore, it was evident that a further study should be conducted to evaluate the effectiveness of the HSRI protocols under actual operational conditions, particularly when administered by personnel having little prior training.

Mortimer, R.G., Filkins, L.D., Lower, J.S., Kerlan, M.W., Post, D., Mudge, B. and Rosenblatt, C.A. Development of Court Procedures for Identifying Problem Drinkers, Report on Phase I, Highway Safety Research Institute, The University of Michigan, Ann Arbor, July 1971.

Kerlan, M.W., Mortimer, R.G., Mudge, B. and Filkins, L.D. Court Procedures for Identifying Problem Drinkers, Volume 1: Manual, Highway Safety Research Institute, The University of Michigan, Ann Arbor, June 1971.

Mudge, B., Kerlan, M.W., Post, D.V., Mortimer, R.G. and Filkins, L.D. Court Procedures for Identifying Problem Drinkers, Volume 2: Supplementary Readings, Highway Safety Research Institute, The University of Michigan, Ann Arbor, June 1971.

Lower, J.S., Mortimer, R.G. and Filkins, L.D. Court Procedures for Identifying Problem Drinkers, Volume 3: Scoring Keys, Highway Safety Research Institute, The University of Michigan, Ann Arbor, June 1971.

It will be readily appreciated that the attempt to provide validity information in such settings poses at least one major problem.

In attempting to assess the validity of predictive tools, such as the HSRI questionnaire and interview, it is necessary to independently measure the condition being predicted. In the original study (Mortimer, et.al., 1971) the validation was made by using samples of known problem drinkers and presumed social drinkers. The social drinkers were randomly selected from various sub-samples of the population meeting certain characteristics of age, sex, occupation, etc. Inevitably, some members of these samples could be expected to be problem drinkers, since it is estimated (Alcohol and Health, 1971) that about 5% of the adult population are alcoholic and almost another 5% are serious alcohol abusers. This procedure allowed a clear-cut validation technique to be employed on the scoring profiles by means of conventional item analysis methods. Thus, in that case, validation was straightforward because the members of the validation samples were identifiable beforehand in terms of their problem-drinker classification.

The same conditions do not prevail in the present study. The major problem here centers around the ability to obtain an external criterion against which to validate the HSRI protocol. In this study, the assignment of DWI drivers to problem-drinker classifications could not be made by any procedure, either before or after they had been administered the HSRI test, other than to use the test results themselves or the results of highly similar tests. This was, of course, the whole purpose of developing the test in the first place. Therefore, to assess validity in the operational setting it

Alcohol and Health, First Special Report to the U.S. Congress from the Secretary of Health, Education and Welfare. Edited by M. Keller and S.S. Rosenberg. U.S. Government Printing Office, December 1971. DHEW Publication No. (HSM) 72-9099.

was necessary to obtain other information on each defendant from which a criterion measure could be constructed.

A suitable external criterion may have taken the form of a separate diagnosis made by staff of an alcoholism treatment center, using their classification schemes and extensive experience in recognizing the existence of drinking problems. However, while some of the ASAPs include some type of psychological and medical screening, it is the exception rather than the rule. Therefore, alternative external criteria had to be developed.

The only remaining alternatives appeared to be those that relate to the individual's past behavior, such as prior arrests for drinking offenses, whether or not they concern driving; the blood alcohol concentration (BAC) at the time of this arrest and previous ones; and arrests for other types of offenses, some of which appear to be characteristically associated with the use of alcohol. Use of such indices poses some real problems which affect their value as criterion measures.

Such measures make it difficult to make a diagnosis of current problem-drinking, as compared with their use in diagnosis of a long-standing problem. However, even in the latter case such background variables may be of little use, because of the relatively low probability that individuals who are habitual users of alcohol will be apprehended for misuse of the drug, such as by traffic violations or criminal acts. For example, it is estimated that only about one driver out of 1500 who is under the influence of liquor is likely to be apprehended by police agencies (Klebel, 1973). Furthermore, even if an individual is apprehended for an offense involving alcohol, this involvement may not appear on either a driving or a criminal record. Driving offenses

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Klebel, E. Reported at the Working Party on Alcohol, Drugs and Driving Behavior. IDBRA, International Conference on Driver Behavior, Zürich, October 1973.

involving the use of alcohol are frequently resolved by the courts as other forms of traffic offenses, and criminal records generally do not include identification of alcohol use as a contributing factor to a criminal act.

These considerations imply that background history items of prior alcohol involvement in driving, or other activities which resulted in apprehension by police agencies, are relatively unreliable indicators, in the sense that any measuring instrument can be considered unreliable if it has low internal-consistency in the behaviors which it measures.

Therefore, at least two elements of the criterion problem confronting this study can be stated. One of these concerns the probable low reliability of the criterion measure, if it is based on a previous history of recorded offenses involving alcohol, which implies that any attempt made to develop an index of validity of the HSRI protocols must be limited. This is because the extent of validity that can be achieved is dependent upon the reliability of the criterion measure. Thus, while a test may be valid it will not be possible to demonstrate this if the criterion against which the validation is made is itself unreliable (Guilford, 1954).

Secondly, the above analysis indicates that the most reliable single item of information concerning the drinking behavior of a driver who enters an ASAP sample is the fact of his apprehension and conviction and the BAC level at the time of that specific arrest. This also indicates that the samples to whom the HSRI protocol is administered in the traffic court are distinctly different, in the probability of containing problem-drinkers, than the validation sample of "social drinkers" used in the original study. This implies that it would be expected that a relatively large percentage of the convicted drivers are indeed problem-drinkers.

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Guilford, J.P. Psychometric Methods. McGraw-Hill, New York, 1954.

To carry out the validation portion of this study individual questionnaire and interview responses were obtained on samples of DWI defendants in cooperating ASAPs. As much other available information as possible was concurrently obtained about each defendant so that the questionnaire and interview diagnostic results could be compared with other indicators of problem drinking and so that a criterion measure could be constructed. Data were obtained on about 700 DWI defendants from cooperating ASAPs--Fairfax, Virginia; New Orleans; San Antonio; and South Dakota.

In addition to attempting to establish the operational validity of the HSRI procedures for identification of problem drinkers, a second objective has been determination of the operational acceptability and practicability of the procedures among court workers actually using them. Typically these court workers are called on to determine the nature and extent of problem drinking among DWI defendants and to recommend to the judiciary appropriate remedial measures and activities designed to prevent subsequent drunk driving. Additionally, it was hoped to capture the insights and opinions of experienced questionnaire and interview users so that revisions of the instruments would be more effective and palatable. A survey of ASAP users was undertaken for these purposes.

A Spanish translation of the questionnaire has also been prepared. To date, no operational nor validating data are available to determine whether this translation is suitable for identifying problem drinkers among Spanish-speaking people.

Sets of questionnaire scoring templates have been developed and delivered under separate cover to NHTSA's Office of Alcohol Countermeasures.



## VALIDITY AND RELIABILITY ESTIMATES OF THE HSRI PROTOCOL

In order to develop estimates of the validity and reliability of the HSRI procedures for identifying problem drinkers, data were obtained from four ASAPs: New Orleans, Louisiana; San Antonio, Texas; Fairfax County, Virginia; and South Dakota. The data for South Dakota ultimately were not used in these analyses. For the remaining three ASAPs, various procedures were developed in order to make the desired evaluations.

### The Data Base

A number of ASAPs were initially solicited and asked whether they would be willing to cooperate with HSRI staff in providing the needed validating data. Visits were made to various of these ASAP sites, and in some instances assistance was given in the form of initial training in the use of the court procedures manuals. Final selection of the participating ASAPs was based on many considerations, uppermost being the ability to obtain criterion measures, full use of the HSRI procedures, and timely availability of data consistent with the research schedule.

The data subsequently obtained from San Antonio, New Orleans, and Fairfax County differed in a number of respects, dependent upon the specific approach used in each of these jurisdictions. While each ASAP made use of the questionnaire and interview on the drivers charged with DWI offenses, the manner in which each defendant was processed differed in certain details, thereby affecting the type of descriptive data and criterion measures that became available.

The form in which the data was obtained from these ASAPs also differed as described below.

The Fairfax ASAP provided copies of hard-copy questionnaires and interviews on 304 DWI defendants arrested between

January 15 and February 15, 1973. Along with these was included a "Probation Office Data Analysis (PODA) Form" for each case. The PODA form provided demographic information, eight driving and criminal behavior information items, and HSRI test scores. The pre-sentence investigator based the classification of drinking problem severity and court recommendations largely on these items. In addition, copies of the Department of Motor Vehicles record and the Central Criminal Record were provided when available.

The New Orleans ASAP provided 200 cases of hard-copy questionnaires and interviews. Along with these was included a "Personal History Form" which provided demographic information. In addition, a copy of the "Pre-Sentence Investigator's Report (PSIR)" was provided for each case. The PSIR provided summary categorizations for nine information items. The pre-sentence investigator based the classification of drinking problem severity upon these nine items. Every seventh alphabetic case was taken whose pre-sentence investigation was completed between April 1, 1972 and April 1, 1973.

The San Antonio ASAP provided 205 cases of keypunched questionnaires and interviews, using the format recommended by HSRI (Lower, et.al., 1971). Additional keypunched information derived from the pre-sentence investigation was provided in PSI Data File form. The cases constitute a census of all DWI arrestees processed through pre-sentence investigation activities during September, October and November 1972.

#### Description of ASAP Samples

The characteristics of the driver samples obtained in the Fairfax County, New Orleans and San Antonio ASAPs are shown in Table 1 in terms of sex, race, marital status, age, education, income level, BAC at time of arrest, previous DWI arrests, and number of previous alcohol offenses. The latter are most frequently Drunk and Disorderly (D&D), Drunk in Public (DIP), or Public Intoxication (PI).

TABLE 1. SOME CHARACTERISTICS OF THE ASAP SAMPLES

Variable	Fairfax County	New Orleans	San Antonio
Number of Cases <sup>1</sup>	304	200	205
<u>Sex</u>			
% Female	6.6	3.0	5.9
% Male	93.4	97.0	94.1
<u>Marital Status</u>			
Married	52.6	51.3	Not available
Single	25.7	17.6	Not available
Widowed	3.0	3.5	Not available
Separated/Divorced	18.8	25.1	Not available
Other	0.0	2.5	Not available
<u>Age</u>			
<29	34.3	20.2	29.7
29-40	28.3	34.2	34.8
>40	37.4	45.6	35.5
<u>Education</u>			
Elementary School or Less	10.6	Not available	41.0
Some High School or Diploma	47.9	Not available	49.3
Some College or More	41.5	Not available	9.8
<u>Income/Year (x\$1000)</u>			
\$10	35.7	Not available	88.2
\$10-15	26.9	Not available	9.3
\$15-25	22.9	Not available	2.0
\$25	14.5	Not available	0.5
<u>Number of Previous DWIs</u>			
0	86.1	70.2	-----
1	11.2	22.2	-----
2 or more	2.7	7.6	-----
<u>Number of Other Alcohol Offenses</u>			
0	77.3	82.1	54.1 <sup>2</sup>
1-2	19.4	12.8	24.4
3 or more	3.3	5.1	21.5
<u>BAC(%) at Arrest</u>			
.14 and lower	25.2	27.5	20.1
.15-.19	37.9	35.7	44.0
.20 and higher	36.9	36.8	35.9
<u>Race</u>			
Black	5.9	65.7	Not available
White	92.8	34.3	Not available
Other	1.3	0.0	Not available

<sup>1</sup>Percentages may be based on less than the total sample due to incomplete information on some cases or variables.

<sup>2</sup>Includes number of previous DWI.

It will be noted that the samples differ in a number of respects, and that comparable data are not available for all variables.

Most of the subjects were males, with about half married. The Fairfax County and San Antonio samples were similar in age distribution, while in New Orleans the drivers were older. In Fairfax County, 41.5% had some college education with 20.2% being college graduates. In San Antonio, only 9.8% had some college education, and only 2.5% were graduates. These two samples also differed in income level, which was much lower in San Antonio than Fairfax County. There were also substantial differences in racial composition, with 92.8% being white in Fairfax County and 34.3% in New Orleans.

Insofar as the distribution of these samples on the variables associated with drinking offenses is concerned, the Fairfax County drivers had fewer recorded previous DWI convictions than the New Orleans drivers; these two groups were similar in the frequency of other alcohol offenses not related to driving. A direct comparison between these two samples and that in San Antonio could not be made on these variables because in San Antonio the DWI and other alcohol offenses (DIP) were not separated.

However, if the combined probability of number of previous DWI and other alcohol offenses is taken from the Fairfax County and New Orleans data, it would be expected that 62.3% would have no previous DWI or other alcohol offenses, 32.8% would have one-two such offenses, and 4.9% three or more. Thus, it appears that, compared to the Fairfax County and New Orleans samples, the San Antonio drivers have been arrested for more previous drinking related offenses.

It will also be noted that most drivers do not have prior records of drinking arrests.

The distributions of the blood alcohol concentration (BAC) at the time of arrest were quite similar in the three ASAPs, with about 36% of the drivers being at or above 0.20%.

To show the manner in which age and education interact with BAC at time of arrest, number of previous DWI arrests, and number of previous other alcohol offenses, some two-way tables are shown for Fairfax County and San Antonio.

Table 2A shows the interaction of age and BAC level at time of arrest in Fairfax County. The relationship falls just short of significance, but it can be seen that there is a tendency for older drivers to have somewhat higher BACs. There was no significant interaction between the number of previous DWI (Table 2B) or other alcohol offenses (Table 2C) and age, with most of these drivers having no prior record.

TABLE 2. THE INTERACTION OF AGE OF DRIVER WITH BAC AT TIME OF ARREST, NUMBER OF PREVIOUS DWI AND NUMBER OF PREVIOUS OTHER ALCOHOL OFFENSES IN FAIRFAX COUNTY SAMPLE, BY PERCENT OF CASES

	BAC at Arrest				
	Age (years)	.14	.15-.19	.20 or more	Total
A. Age x BAC at Arrest	<29	36.2	34.8	30.0	100
	29-40	24.1	34.5	41.4	100
	>40	16.2	44.1	39.7	100
	Number of Previous DWI				
	Age (years)	0	1	2 or more	Total
B. Age x Number of Previous DWI	<29	91.0	8.0	1.0	100
	29-40	85.9	10.6	3.5	100
	>40	83.0	13.2	3.8	100
	Number of Previous Alcohol Offenses				
	Age (years)	0	1-2	3 or more	Total
C. Age x Number of Other Alcohol Offenses	<29	76.6	21.3	2.1	100
	29-40	82.1	15.4	2.5	100
	>40	74.5	20.4	5.1	100

Tables 3A and 3B show similar, non-significant, trends in the San Antonio sample.

Table 4A shows the interaction of education with BAC at time of arrest and (Table 4B) the effect of education upon the number of prior alcohol-related arrests in San Antonio. While

TABLE 3. THE INTERACTION OF AGE OF DRIVER WITH BAC AT TIME OF ARREST, AND THE SUM OF NUMBER OF PREVIOUS DWI AND OTHER ALCOHOL OFFENSES IN SAN ANTONIO SAMPLE, BY PERCENT OF CASES

	BAC at Arrest			
	Age (years)	.14	.15-.19	.20 or more
A. Age x BAC at Arrest	<29	21.6	45.4	33.0
	29-40	22.2	42.0	35.8
	>40	16.7	45.1	38.2
	Number of Previous Alcohol Offenses			
	Age (years)	0	1-2	3 or more
B. Age x Number of Previous DWI and Other Alcohol Offenses	<29	55.3	27.3	17.4
	29-40	55.5	24.3	20.2
	>40	51.9	22.2	26.1

TABLE 4. THE INTERACTION OF EDUCATION OF DRIVER WITH BAC AT TIME OF ARREST AND THE SUM OF NUMBER OF PREVIOUS DWI AND OTHER ALCOHOL OFFENSES IN SAN ANTONIO SAMPLE, BY PERCENT OF CASES

	BAC at Arrest			Total	
	.14	.15-.19	.20 or more		
A. Education x BAC at Arrest					
Elementary School or Less	18.0	47.5	34.5	100	
Some High School or Diploma	24.2	37.1	38.7	100	
Some College or More	9.1	63.6	27.3	100	
	Number of Previous Alcohol Offenses			Total	
	0	1-2	3 or more		
B. Education x Number of Previous Alcohol Offenses	Elementary School or Less	39.3	32.1	28.6	100
	Some High School or Diploma	61.4	19.8	18.8	100
	Some College or More	80.0	15.0	5.0	100

there was no significant association between education and BAC at arrest, there was a significant association between education and frequency of total arrests for alcohol offenses (Table 4B). Persons with more education had fewer previous arrests recorded for abuse of alcohol, such as DWI or DIP.

## Development of an External Criterion

The problems associated with the development of a suitable exterior criterion of problem drinking have already been discussed. It must be recognized that the present sample can be expected to include a far greater proportion of individuals with a drinking problem, than a sample drawn at random from the population. Thus, even an individual without a prior history of drinking-related arrests has a high expectation of being a problem drinker simply on the basis of his entering the sample of convicted DWI drivers. A good deal of emphasis must therefore be placed upon the BAC level at the time of the present arrest, which may be the only available indicator of the drinking behavior of this individual.

For example, a categorization into social drinker, excessive drinker and problem drinker groups was developed in the New Orleans ASAP based upon BAC at time of arrest, previous DWI arrests and number of previous other alcohol offenses. Based on BAC at time of arrest, Table 1 shows that 27.5% of the drivers would be classified as social drinkers, 35.7% as excessive drinkers and 36.8% as problem drinkers. When similarly categorized by the number of previous DWI arrests, 70.2%, 22.2% and 7.6% of drivers would be assigned to the social drinker, excessive drinker and problem drinker categories, respectively. Similarly, 82.1%, 12.8% and 5.1% of drivers would be assigned to these respective categories, based upon the number of previous other alcohol offenses. These comparisons show that the use of the number of DWI and the number of other alcohol offenses would lead to a relative underestimate of the assignment to a problem drinker category compared to use of the BAC at the time of arrest. As already explained, the reliability of the number of previous DWI arrests and the number of other alcohol-related arrests is clearly far less than that of the BAC level at the time of arrest and, therefore, emphasis should be placed upon the latter in the development of an exterior criterion.

Taking means across the ASAPs indicates that only 5.2% of these drivers would be classified as problem drinkers based on the number of previous DWI arrests and 4.2% based on the number of previous other alcohol offenses, while 36.5% would be so classified based on BAC of 0.20% or greater. Therefore, use of the number of DWI or other alcohol offenses alone clearly would lead to underestimates of problem drinking, since it is estimated that 5-10% of the general population can be categorized as problem drinkers.

It was decided that the BAC at time of arrest, previous record of DWI offenses, and the number of recorded other alcohol offenses could be combined to form an objective exterior criterion to measure the extent of a drinking problem. Therefore, these objective measures were formed into a composite variable, CRIT, and used as a criterion measure for validation purposes.

The combination variable, CRIT, has been used here to develop three categories of classification: social drinker, excessive drinker, problem drinker.

Social drinkers are defined as: BAC less than 0.15% at the time of arrest, and no previous DWI or DIP arrests. It should be noted that this does not mean that persons in this category are social drinkers per se, but that the criteria failed to indicate that they are excessive drinkers or problem drinkers.

Excessive drinkers are defined as persons whose BAC at the time of arrest was 0.15-0.19%, or who had one prior DWI arrest, or who had one and not more than two prior DIP arrests.

Problem drinkers are defined as persons with a BAC of 0.20% or greater, or who had two or more prior DWI arrests, or who had three or more DIP arrests, or who had any two of the items which classified a person as an excessive drinker.

Use of this composite variable, CRIT, not only classified the approximately 36% of the DWI population who had high BACs as problem drinkers, but also included those offenders with poor DWI or other alcohol offense records. Thus, it is found



(Table 6) that over 50% of the DWI samples are classified as problem drinkers based on this composite criterion.

It should be noted that the San Antonio ASAP did not distinguish between the number of DWI arrests and the other alcohol-related offenses. For the purpose of assigning drivers to a criterion group classification it was assumed that all previous alcohol-related offenses were DIPs. This led to underclassifying as excessive drinkers rather than problem drinkers only those few drivers in the San Antonio sample who had precisely two DWI arrests as the recorded alcohol-related arrests.

#### Administration of the HSRI Test

There are some differences in the manner in which the HSRI test was administered in the three ASAPs, since it was one item of a number of procedures that were used.

In Fairfax County the test was administered by the pre-sentence investigators, most of whom were college graduates. Only one is known to be a recovered alcoholic.

Thus, the Fairfax County data base represents responses obtained by trained personnel, with some experience, who have considerable variation in sex and age characteristics. The information was obtained from defendants three-four weeks after the DWI offense and prior to trial. The results of the pre-sentence investigation determined the defendant's probation and treatment type. The HSRI test was scored by the interviewers before they made their overall assessment of the severity of the drivers' drinking problems and determination of recommended remedial action.

In New Orleans the test was administered by the pre-sentence investigators who were also probation officers. At least eight of the PSI were college graduates, with at least one year of experience in a related field. One PSI is a recovered alcoholic. The investigators included two black females, one white female, two black males and three white males. Their age range was 22-45 years. The pre-sentence

investigators had considerable prior experience in using the HSRI test on the defendants in this sample.

Those persons convicted of DWI, via plea or trial, were sent to DWI School or Defensive Driving School. These schools met two hours per week for eight weeks. The PSI interviewed most of the DWI convictees assigned to their territory during the eight weeks of classes. About 20% of DWI convictees did not go through the pre-sentence investigation procedure because they were not required to at the judge's discretion or were not residents of Orleans Parish.

As a part of the pre-sentence investigation, tests for alcoholism developed by the National Council on Alcoholism and John Hopkins University were administered, before the HSRI test.

Thus, the New Orleans data base represents responses obtained by trained personnel, with some experience, who have considerable variation in sex, race and age characteristics. The information was obtained from defendants ranging from shortly after DWI conviction up to three months after conviction. These persons had just completed two obvious tests for alcoholism prior to administration of the HSRI test. In addition, the results of the pre-sentence investigation determined the convictees' sentences in terms of probation and type of treatment. The HSRI test was scored by the pre-sentence investigators before they classified a driver by severity of drinking problem and assisted in determining the sanctions to be recommended.

In San Antonio the test was administered by experienced pre-sentence investigators, who were college graduates, prior to sentencing. The information was obtained from defendants one or more months after the DWI offenses.

#### Distribution of HSRI Test Scores

Since it was discovered that a number of inadvertent errors in scoring were made by the ASAP project staffs, the coded questionnaire and interview forms were used to remove this source of error.

Table 5 shows the means and standard deviations of the scores obtained on the questionnaire, interview, and weighted sum of the questionnaire and interview scores, for each of the three ASAPs. The mean and standard deviation of the interview scores were highest in Fairfax and lowest in New Orleans.

TABLE 5. MEAN AND STANDARD DEVIATION FOR THE QUESTIONNAIRE, INTERVIEW AND TOTAL SCORES IN THE FAIRFAX COUNTY, NEW ORLEANS AND SAN ANTONIO SAMPLES

Scale	Fairfax County		New Orleans		San Antonio	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Questionnaire Score	13.6	7.9	13.9	7.2	14.5	7.3
Interview Score	46.5	31.9	36.4	24.5	42.0	27.9
Total Score	60.0	37.3	50.2	29.3	56.4	33.6

#### Test Battery Validity

The problems associated with obtaining a satisfactory external criterion, against which scores on the HSRI questionnaire/interview can be compared, have already been discussed. The CRIT variable consists of a composite of BAC at time of arrest, the number of previous DWI arrests, and the number of previous alcohol offenses. The combination of these variables into a classification scheme having three levels has also been described earlier (see page 14). Table 6 shows the percent of DWI drivers within each CRIT level in the three ASAPs. The table also shows the overall mean percent of drivers assigned to each CRIT drinking classification, showing that 17.4%, 29.3% and 53.0% were assigned to social drinker, excessive drinker and problem drinker categories.

A secondary criterion measure, which was available in Fairfax and New Orleans, consisted of a classification of each driver into the same three categories by the pre-sentence investigator. This classification was generally made after the pre-sentence investigator had completed administration of

TABLE 6. HSRI TESTS AND CRITERIA CLASSIFICATIONS, IN PERCENT,  
BY ASAP SAMPLE

Variable	Social Drinkers			Excessive Drinkers			Problem Drinkers					
	FX	N.O.	S.A. Mean	FX	N.O.	S.A. Mean	FX	N.O.	S.A. Mean			
Questionnaire Score Category	62.5	64.6	59.7	62.3	26.0	24.8	26.5	25.8	11.5	10.6	13.8	12.0
Interview Score Category	62.5	82.0	70.0	71.5	6.9	5.0	7.4	6.4	30.6	13.0	22.7	22.1
Total Score Category	57.2	69.7	64.9	63.9	20.1	19.7	17.0	18.9	22.7	10.6	18.0	17.1
Composite Criterion (CRIT)	21.1	19.9	11.2	17.4	32.0	29.8	26.9	29.3	46.9	50.3	61.9	53.0
Pre-Sentence Investigator's Classification	54.5	50.3	-----	52.4	24.6	34.9	-----	29.8	20.9	14.8	-----	17.8
Psychometrist's Classification	-----	-----	45.7	-----	-----	-----	21.0	-----	-----	-----	33.3	-----

the questionnaire and interview and had before him most of the other background information items. It will be noted that this classification assigned 52.4% of the drivers to the social drinker category, 29.8% to the excessive drinker category and 17.8% into the problem drinker category. Therefore, the pre-sentence investigators' classifications were much more conservative in assigning drivers to the problem drinker category than the CRIT composite variable.

Another secondary criterion was available in San Antonio. This consisted of an independent evaluation and classification of 81 cases by a psychometrist. As shown in Table 6, the psychometrist assigned 45.7% of the drivers to the social drinker category, 21.0% to the excessive drinker category and 33.3% to the problem drinker category. Thus, the psychometrist assigned more drivers to the problem drinker group than the pre-sentence investigators or the HSRI test, though less than the CRIT criterion variable.

One measure of test validity can be determined by comparing the classification of drivers into social- and problem-drinker categories by the questionnaire, interview, and the questionnaire and interview total score, with those made by the criterion variables.

Current scoring for the HSRI test battery is shown in Table 7, which indicates the score cut-offs for assigning the drivers to social drinker, presumptive problem drinker and problem drinker classifications. The scoring cut-offs were chosen after a double crossvalidation of the test instruments had been made, using a randomly selected sample of subjects and an alcoholic sample (Mortimer, et.al., 1970). In the original study 99.5% of the alcoholics and 6% of the social drinkers had a total questionnaire and interview score, appropriately weighted, above 60; and 98.5% of the alcoholics and 1.5% of the social drinkers had a total score above 85. Those scoring cut-offs are relatively conservative in the present context, in that they estimate that 1.5% of the population of drivers are problem drinkers and 6% are

presumptive problem drinkers. That conservatism was considered necessary in the original validation study, as HSRI wanted to protect innocent parties among the general population from being falsely labeled as problem drinkers.

TABLE 7. CURRENT CUT-OFF SCORES OF HSRI TEST

Scale	Classification		Problem Drinker
	Social Drinker	Presumptive Problem Drinker	
Questionnaire	<15	16-23	>24
Interview	≤49	50-59	≥60
Questionnaire and Interview Total	≤59	60-84	≥85

Using these scoring cut-offs, Table 6 shows the percent of individuals classified as social drinkers, presumptive problem drinkers (or excessive drinkers) and problem drinkers.

Using the mean questionnaire score category alone, 62.3% of the DWI drivers were classified as social drinkers, 25.8% as presumptive problem drinkers, and 12.0% as problem drinkers. Using the mean interview score category alone 71.5% of the drivers were classified as social drinkers, 6.4% as presumptive problem drinkers and 22.1% as problem drinkers. By means of the total score, which is the weighted sum of the questionnaire and interview scores, 63.9% of the DWI drivers were classified as social drinkers, 18.9% as presumptive problem drinkers and 17.1% as problem drinkers.

Table 6 allows a comparison between the total score category classification and the criterion variable, CRIT, as well as the classification made by the pre-sentence investigator.

It will be noted that the HSRI test score categorizations more closely resemble those made by the pre-sentence investigator than those derived by the use of the composite criterion variable. By comparison with the composite criterion, the HSRI test scores tend to be conservative in assigning individuals to excessive or problem drinker categories.

In order to show the potential effectiveness of the HSRI tests in discriminating between social drinkers and problem drinkers, it is necessary to evaluate the effect of jointly classifying problem drinkers correctly as problem drinkers and misclassifying social drinkers as problem drinkers.

For the questionnaire scores, interview scores and the weighted sum of the questionnaire and interview total scores, the discriminability between social drinkers and problem drinkers is shown in Figures 1-3 for each of the three ASAPs. For example, Figure 1 shows the discriminability of total scores between social and problem drinkers as defined by the composite criterion, CRIT, in Fairfax County. This indicates that about 27% of problem drinkers would be correctly identified using the total score on the HSRI test, while misclassifying none of the social drinkers as problem drinkers. By allowing a false positive rate of only 5%, 50% of the problem drinkers could be correctly identified.

From Figures 1-3 it can be observed that discriminability between social and problem drinkers was least effective in New Orleans, that the questionnaire was less effective than the interview, and that the use of the questionnaire and interview total score was only slightly more effective than the interview alone.

Table 8 shows the correlations between questionnaire, interview and the questionnaire and interview weighted total score with the composite criterion variable, in each of the three ASAPs. The correlation between the questionnaire score and the criterion variable is lower than that between the interview score and the criterion. There is a minor gain in validity when using the total score compared to the interview score alone. The maximum correlation between HSRI test total score and the criterion measure of 0.50, obtained in the Fairfax County data, represents a reasonable degree of validity.

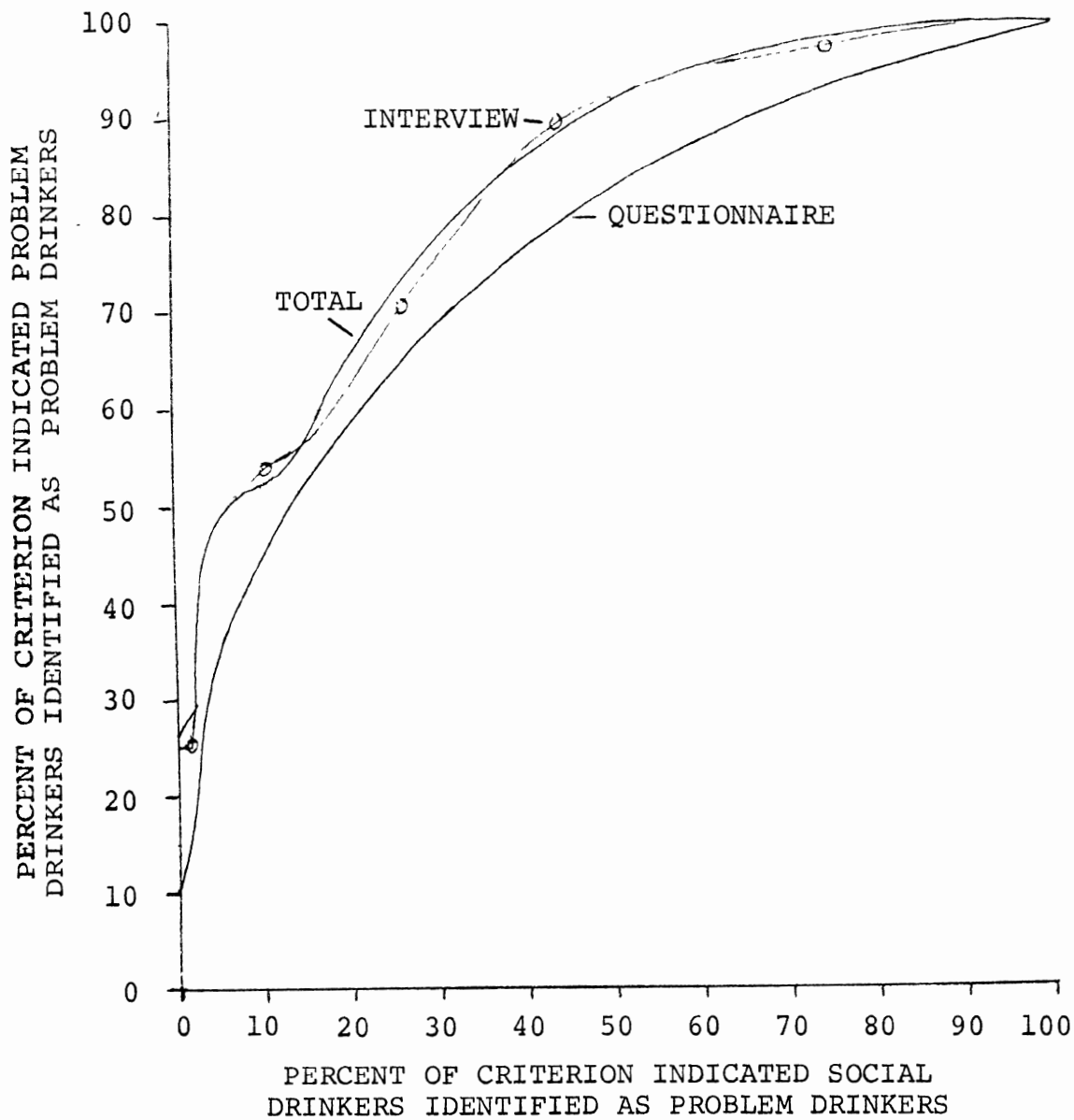


Figure 1. Questionnaire, Interview and total score discrimination between criterion indicated social and problem drinkers in Fairfax County.



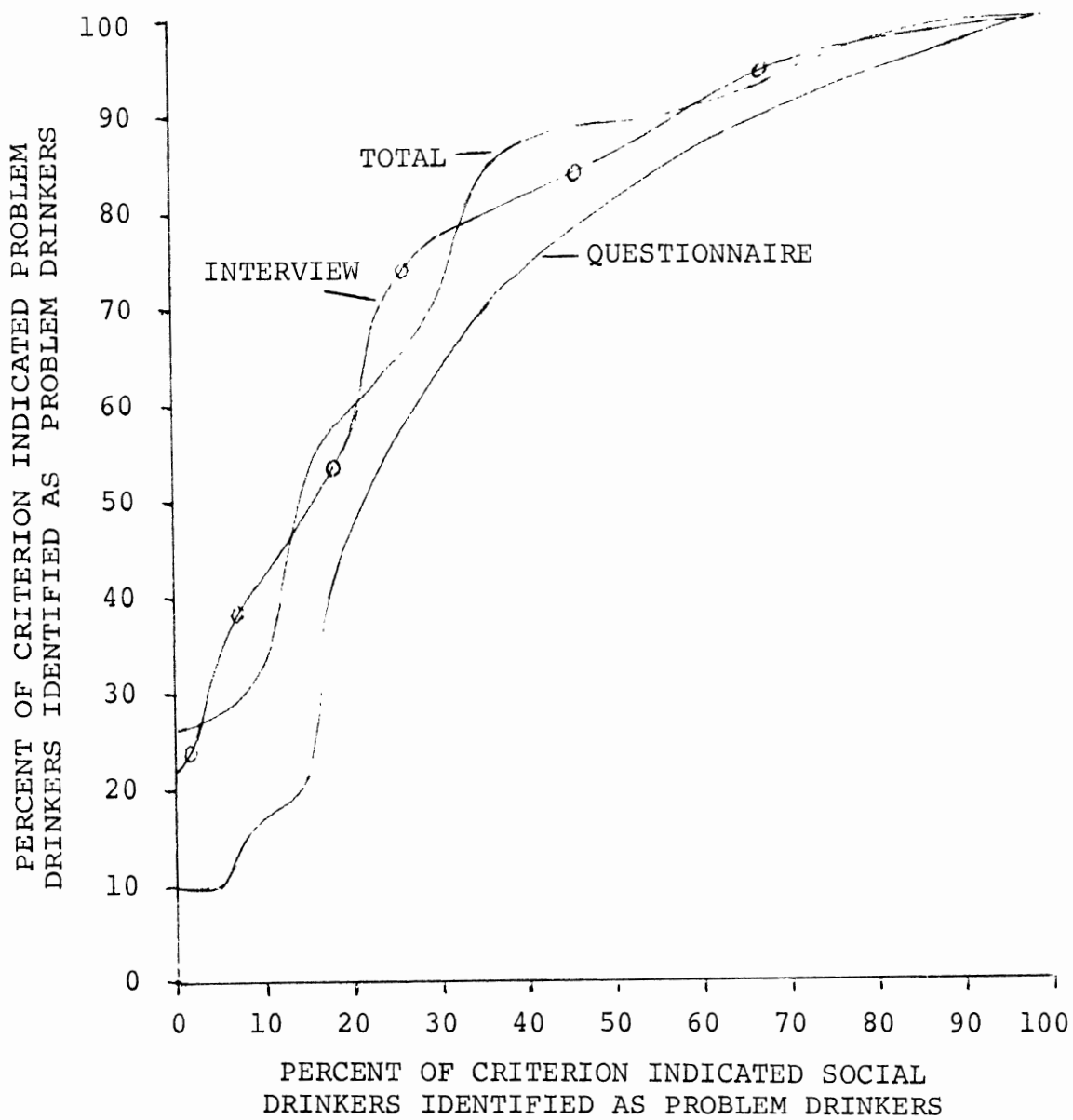


Figure 2. Questionnaire, Interview and total score discrimination between criterion indicated social and problem drinkers in New Orleans.

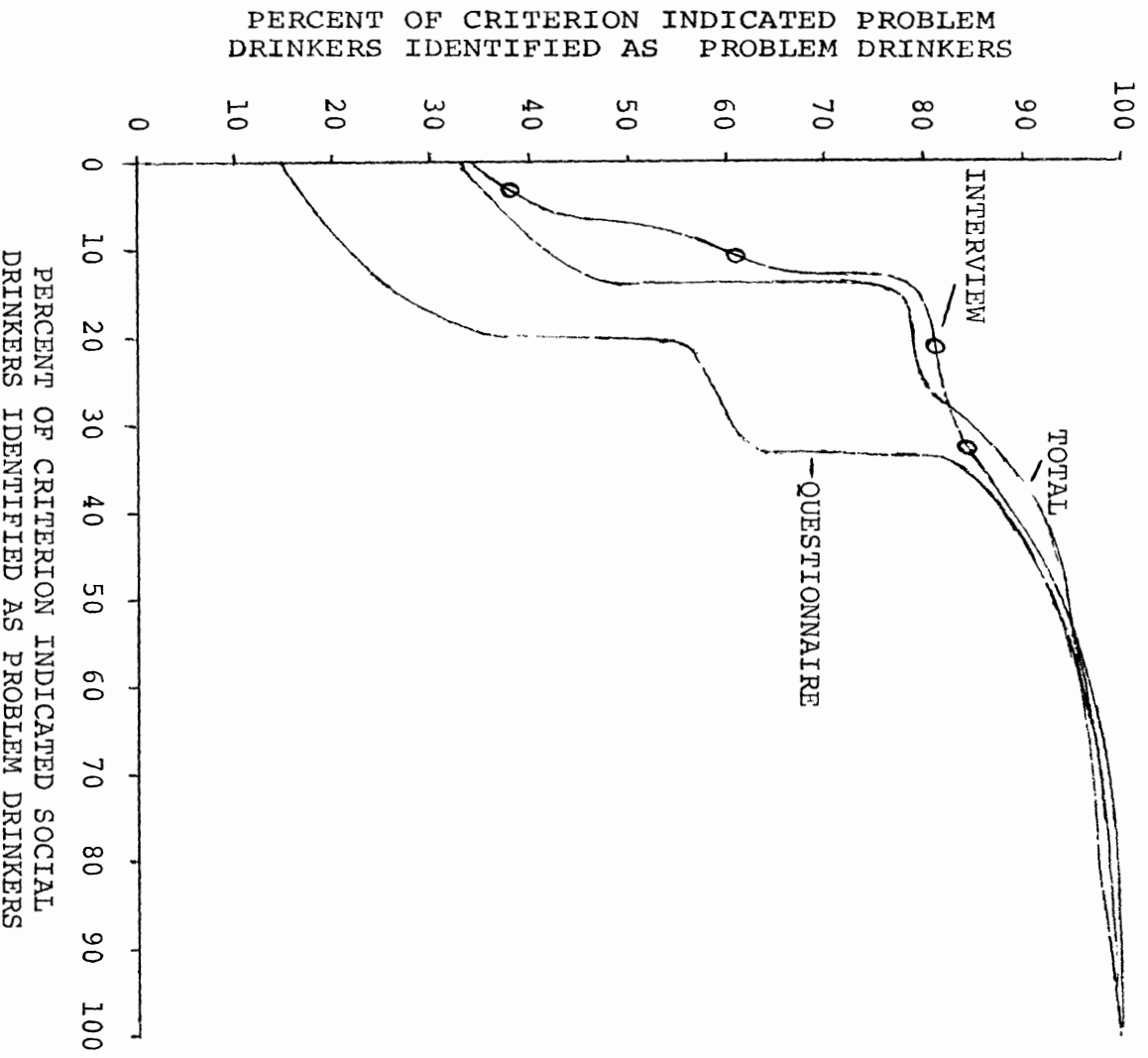


Figure 3. Questionnaire, Interview and total score discrimination between criterion indicated social and problem drinkers in San Antonio.

TABLE 8. CORRELATIONS OF TEST SCORES WITH THE COMPOSITE CRITERION (CRIT) IN THE ASAP SAMPLES

Scale	ASAP		
	Fairfax	New Orleans	San Antonio
Questionnaire Score	.35	.30	.35
Interview Score	.50	.41	.45
Total Score	.50	.41	.46

Effects of Changing the HSRI Test Cut-off Scores. For each of the three ASAPs, Table 9 shows the percent of drivers assigned to each of the three problem drinker categories by the HSRI test and the composite criterion variable, using the cut-off scores recommended in the HSRI Manual (Kerlan, et.al., 1971) shown in Table 7. Table 9 shows that 78.4% of the drivers in Fairfax County were considered social drinkers by both the HSRI test and the CRIT variable, 75% of the drivers classified on the criterion variable as excessive drinkers were classified as social drinkers by the HSRI test and 31.8% of the drivers classified as problem drinkers by the criterion variable were considered social drinkers on the HSRI test. Table 9 also shows that 45% of the Fairfax County DWI drivers who were classified as problem drinkers by the composite criterion were similarly identified as problem drinkers by the HSRI Test. The analogous results for the New Orleans and San Antonio samples are also shown in Table 9.

Table 10 shows the mean percent classifications, averaged across all three ASAPs, of the percent of drivers in each criterion variable category classified by the HSRI test. Thus, 83.7% of the drivers identified as social drinkers by the criterion variable were similarly classified by the HSRI test, and 30.3% of the criterion problem drinkers were classified as problem drinkers by the HSRI test.

It should be noted that drivers classified as presumptive problem drinkers by the HSRI test are intended to be evaluated further by means of auxiliary data generally available to a

TABLE 9. PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TEST USING CURRENT CUT-OFF SCORES

HSRI Test Classification	Criterion Classification								
	Fairfax County			New Orleans			San Antonio		
	SD	ED	PD	SD	ED	PD	SD	ED	PD
Social Drinkers (<60) Presumptive Problem Drinkers (60-84) Problem Drinkers (>85)	78.4	75.0	31.8	86.1	85.0	52.4	86.6	88.8	49.9
	18.9	19.6	23.2	13.9	7.5	28.9	13.4	5.6	23.0
	2.7	5.4	45.0	0.0	7.5	18.7	0.0	5.6	27.1

TABLE 10. MEAN PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TEST USING CURRENT CUT-OFF SCORES

HSRI Test Classification	Criterion Classification		
	SD	ED	PD
Social Drinkers (<60) Presumptive Problem Drinkers (60-84) Problem Drinkers (>85) Potential Correct Identification	83.7	82.9	44.7
	15.4	10.1	25.0
	0.9	6.2	30.3
	99.1	10.1	55.3

pre-sentence investigator, including background history items such as those contained in the criterion variable, as well as other information which assists in diagnosis. When such additional information is used to classify persons scoring between 60 and 84 on the HSRI test, i.e., in the presumptive problem drinker range, then 99.1% of the persons classified as social drinkers by the criterion variable would be so identified by the HSRI test, 10.1% of the persons identified as excessive drinkers would be so classified by the HSRI test, and 55.3% of the persons classified as problem drinkers by the criterion variable would be similarly identified by the HSRI test.

It is evident that the HSRI test, using the cut-off scores recommended in the Manual, appears to be too conservative in not identifying as many of the problem drinkers as may appear feasible. As already mentioned, the original philosophy underlying the allocation of cut-off scores from classification of drivers into the three HSRI test categories was made in a manner to reduce the likelihood of false positives, so that social drinkers were very rarely misclassified as problem drinkers.

That philosophy is not considered appropriate for drivers convicted of DWI offenses, who are a highly selected and very small subset of the general driving population. Therefore, the probability that a DWI defendant is a problem drinker is far greater than that of a driver selected at random from the general population, and the costs of misclassification are quite small due to the small number of drivers involved. It would also be expected that various measurement errors, such as those arising from denial or lying, would reduce the test scores. Such factors are believed not to have been significant in the initial validation study. Therefore, there is a strong rationale for reducing the cut-off scores. Certainly, the data that have been presented to this point also indicate that the cut-off scores are too conservative and that a greater percentage of

persons classified as problem drinkers by the criterion variable could properly be identified as problem drinkers by the HSRI test if the cut-off scores are reduced.

In order to investigate the effects of changing the cut-off scores, two alternative cut-off scoring ranges were evaluated. Table 11 shows the effects of changing the cut-off score such that persons scoring less than 50 are classified as social drinkers, scores of 50-69 assign a driver to the presumptive problem drinker category, and scores of 70 or above classify a person as a problem drinker. It will be noted that while the percent of persons jointly classified as social drinkers by the criterion variable and by the HSRI test is reduced, there is an increase in the percent of drivers classified as problem drinkers, compared to the classification made using the original cut-off scores.

Table 12 shows the mean percent of classifications made by the HSRI test of persons in each of the three categories of the criterion variable, as determined by the revised cut-off score format described above. It will now be found that 78.2% of drivers classified as social drinkers by the criterion variable are so identified by the HSRI test, with 41.9% of drivers mutually classified as problem drinkers. By re-classifying the drivers scoring in the presumptive problem drinker range, using auxiliary data available to the pre-sentence investigator, the potential agreement between the HSRI test and the criterion increases; this is also shown in Table 12. On this basis, 89.6% of persons identified as social drinkers on the criterion variable would be so identified by the HSRI test, 21.2% would be identified as excessive drinkers, and 71.1% of the problem drinkers would be mutually classified as problem drinkers. Therefore, there is an improvement in the percentage of problem drinkers jointly identified by the HSRI test and the criterion variable.

Table 13 shows similar results of cross-classifications made by the criterion variable and the HSRI test when the

TABLE 11. PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TEST USING REVISED CUT-OFF SCORES: Q+I

HSRI Test Classification	Fairfax County			New Orleans			San Antonio		
	SD	ED	PD	SD	ED	PD	SD	ED	PD
Social Drinkers (<50)	70.3	59.0	20.8	77.7	73.8	39.1	86.6	74.9	26.8
Presumptive Problem Drinkers (50-69)	13.5	30.2	20.7	14.0	16.8	32.2	6.7	16.7	34.6
Problem Drinkers (>70)	16.2	10.8	58.5	8.3	9.4	28.7	6.7	8.4	38.6

TABLE 12. MEAN PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TEST USING REVISED CUT-OFF SCORES: Q+I

HSRI Test Classification	Criterion Classification		
	SD	ED	PD
Social Drinkers (<50)	78.2	69.2	28.9
Presumptive Problem Drinkers (50-69)	11.4	21.2	29.2
Problem Drinkers (>70)	10.4	9.5	41.9
Potential Correct Identification	89.6	21.2	71.1

TABLE 13. PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TESTING USING RECOMMENDED CUT-OFF SCORES: Q+I

HSRI Test Classification	Fairfax County		New Orleans		San Antonio	
	SD	PD	SD	PD	SD	PD
Social Drinkers (<39)	62.2	44.8	13.5			
Presumptive Problem Drinkers (40-49)	8.1	14.2	7.3	66.6	51.6	18.0
Problem Drinkers (>50)	29.7	41.0	79.2	11.1	22.2	21.1
				22.3	26.2	60.9
						73.3
						61.0
						19.1
						13.3
						13.9
						25.1
						73.2

TABLE 14. MEAN PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI TEST USING REVISED CUT-OFF SCORES: Q+I

HSRI Test Classification	Criterion Classification	
	SD	PD
Social Drinkers (<39)	67.4	52.5
Presumptive Problem Drinkers (40-49)	10.8	16.8
Problem Drinkers (>50)	21.8	30.8
Potential Correct Identification	78.2	16.8
		16.9
		12.0
		71.1
		83.1



cut-off scores are further reduced, such that persons scoring less than 40 are classified as social drinkers, persons scoring 40-49 are classified as presumptive problem drinkers, while persons scoring at 50 or above are classified as problem drinkers.

Table 14 shows the mean percent of drivers classified in each of the criterion variable categories by the HSRI test, using these revised scores. On this basis 78.2% of the persons classified as social drinkers by the criterion variable were so classified by the HSRI test, 16.8% of the excessive drinkers were classified as presumptive problem drinkers by the test, and 83.1% of the problem drinkers were identified as problem drinkers, when using the additional information which could be expected to be available to the pre-sentence investigator.

The composite criterion variable, CRIT, is most reliable in its ability to identify problem drinkers, with less reliability in evaluating excessive drinkers or social drinkers. Emphasis should therefore be placed upon correspondence between the HSRI test scores in predicting the problem drinker classifications of the criterion. By using a score cut-off of 50, such that persons scoring above this level are classified as problem drinkers by the HSRI test, 83.1% of those classified as problem drinkers by the criterion could be identified. This is a very satisfying degree of discrimination. Since about 50% of the DWI driver samples were classified as problem drinkers by the criterion, it means that somewhat more than 40% of all the DWI drivers would be classified as problem drinkers by the HSRI test when used in conjunction with other background history variables.

The criterion variable is less effective in classifying DWI drivers as excessive drinkers, and may be quite ineffective in identifying social drinkers. This is due to the questions related to the reliability of the criterion discussed earlier. The HSRI test classified 52.5% of the drivers categorized as excessive drinkers by the criterion

(Table 14) as social drinkers, while 30.8% of those drivers were classified as problem drinkers by the HSRI test. The remainder, 16.8% of drivers classified as excessive drinkers on the criterion, could not be readily assigned to either the social drinker or problem drinker classification based on the use of additional background history information.

The disposition of the DWI drivers who were categorized as social drinkers by the criterion measure was clear-cut based upon the use of the HSRI test, with 67.4% obtaining a score of less than 40, and another 10.8% scoring in the presumptive problem drinker range, i.e., a total score between 40 and 49. The use of additional background history data assigned all of these drivers into the social drinker group.

The remaining 21.8% of drivers classified by the criterion as social drinkers were classified as problem drinkers by the HSRI test. This fact raises some interesting questions which are directly associated with the criterion problem in this study. In the original validation study, it was found that 10% of the social drinkers obtained a total score of greater than 50, the cut-off used in assigning persons to the problem drinker category in the present instance (Table 14). It could be readily argued that the 10% of drivers in the original validation sample who scored above 50 were, in fact, individuals with a drinking problem, since it is approximately this percent of persons, randomly selected from the general population, who are estimated to have serious problems with alcohol. In the present instance, using a cut-off score of 50 for assignment to the problem drinking classification, it is found that 21.8% of the respondents scored at this level or above. This is to be expected when dealing with a DWI driver population. It could be argued that although these individuals had no prior DWI or other alcohol-related arrests and their BACs at the time of arrest were less than 0.15%, they were nevertheless problem drinkers. Use of the HSRI test suggests that about 22%

of them were in fact problem drinkers, which appears to be a quite reasonable proportion on the basis of chance alone in DWI samples.

Perhaps the persons who would require more intensive investigation are those 16.9% of drivers classified as problem drinkers by the criterion but identified by the HSRI test as social drinkers (Table 14). These persons are clearly misidentified by the HSRI test. They represent a misclassification of persons who are almost certainly problem drinkers as social drinkers.

There may be a number of reasons why this should occur. For example, it was found (Table 15) that those DWI drivers who have had more formal education than other drivers tend to score lower on the HSRI test, suggesting that they are able to fake their responses in order to reduce the likelihood that they will be diagnosed as problem drinkers. More information on this topic will be found subsequently under Scoring Considerations, page 49. The defendant's motivation for faking or lying will probably differ according to the treatment procedures available and the sentences imposed in various ASAPs and according to his perception of the entire DWI legal proceedings.

TABLE 15. THE INTERACTION OF EDUCATION AND HSRI TEST CLASSIFICATION IN THE SAN ANTONIO SAMPLE, BY PERCENT OF CASES

Education	Test Classification <sup>1</sup>			Total
	Social Drinker	Presumptive Problem Drinker	Problem Drinker	
Elementary School or less	54.9	15.8	29.3	100
Some High School or Diploma	72.0	18.3	9.7	100
Some College or More	73.7	15.8	10.5	100

<sup>1</sup>Using present cut-off scores (see Table 7).

This analysis suggests that the cut-off scores of the HSRI test be revised when used with a DWI sample of drivers, such that a score of 39 or less assigns the driver to a social drinker classification; a score of 40-49 assigns a driver to the presumptive problem drinker classification; and a score of 50 or greater assigns the driver to the problem drinker classification.

The foregoing analysis and discussion have been based on the combined scores of the questionnaire and interview together when both instruments are used. Similar analyses have been conducted for the instruments when scored singly. Tables 16 and 17, analogous to Tables 13 and 14, present the classification results for the questionnaire used alone in terms of newly recommended cut-off scores. Similar results and recommended cut-off scores are presented in Tables 18 and 19 when only the interview is scored.

Item Analysis. An analysis was made of the correlation between individual test items and the composite criterion, CRIT, using the Fairfax County data. This was done by obtaining the correlations between each individual item and the criterion. It was found that many of the items that are scored provided a significant degree of correlation with the criterion, and furthermore, that a number of the items obtained negative correlations. The latter was to be expected because in the initial validation study a negative correlation was found for those items in the questionnaire scored by key-2. At that time it was considered that these items were measuring a variable related to anxiety, rather than the usual problem drinking syndrome. In this way, when combined into a separate scoring key, these items acted as a suppressor variable.

No attempt was made to change the specific items in the tests based on the present item analysis, as may have been suggested, for example, by removing those items which had low correlations with the criterion in this sample. This was not done because of the previously demonstrated validity of those items

TABLE 16. PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI QUESTIONNAIRE ONLY USING RECOMMENDED CUT-OFF SCORES

HSRI Test Classification	Fairfax County		New Orleans		San Antonio				
	SD	ED	SD	ED	SD	ED			
Social Drinkers (<11)	67.6	53.5	28.0	63.7	49.8	28.9	66.7	52.6	17.6
Presumptive Problem Drinkers (12-15)	16.2	10.7	19.6	16.7	26.0	24.4	13.3	27.8	26.6
Problem Drinkers (>16)	16.2	35.8	52.4	19.6	24.2	46.7	20.0	19.6	55.8

TABLE 17. MEAN PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI QUESTIONNAIRE ONLY USING RECOMMENDED CUT-OFF SCORES

HSRI Questionnaire Classification	Criterion Classification	
	SD	ED
Social Drinkers (<11)	66.0	52.0
Presumptive Problem Drinkers (12-15)	15.4	21.5
Problem Drinkers (>16)	18.6	26.5
Potential Correct Identification	81.4	21.5

TABLE 18. PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI INTERVIEW ONLY USING RECOMMENDED CUT-OFF SCORES

HSRI Interview Classification	Fairfax County		New Orleans		San Antonio				
	SD	ED	SD	ED	SD	ED			
Social Drinkers ( $\leq 24$ )	59.5	33.9	12.2	66.7	51.6	21.9	73.3	61.0	18.4
Presumptive Problem Drinkers (25-39)	10.8	25.0	12.2	11.1	24.1	17.6	13.3	22.2	17.1
Problem Drinkers ( $> 40$ )	29.7	41.1	75.6	22.2	24.3	60.5	13.4	16.8	64.5

TABLE 19. MEAN PERCENT CLASSIFICATION OF ASAP SAMPLES BY COMPOSITE CRITERION AND HSRI INTERVIEW ONLY USING RECOMMENDED CUT-OFF SCORES

HSRI Interview Classification	Criterion Classification	
	SD	ED
Social Drinkers ( $\leq 24$ )	66.5	48.8
Presumptive Problem Drinkers (25-39)	11.7	23.8
Problem Drinkers ( $> 40$ )	21.8	27.4
Potential Correct Identification	78.2	23.8

and because the test reliability would be reduced by decreasing the total number of items. In addition, the analysis to be described in the next section, concerned with appropriate weighting of the test battery keys, suggested that no benefit in increased validity would likely accrue from a reduction in the item content.

Evaluation of Test Battery Weights. In order to evaluate different weighting schemes for the variables entering into the HSRI test battery, a number of different combinations of these variables were used in multiple regression analyses. These analyses were made, using as a criterion, test scores of those subjects who were classified as non-problem drinkers and problem drinkers on the criterion variable, and omitting those individuals who were classified as excessive drinkers by the composite criterion. Thus, the analyses used the extreme groups, according to this classification. This modified criterion classification shall be referred to here as CRIT-EXTR, denoting the use of the extreme criterion classification groups.

Table 20 shows the correlations between the individual keys derived from the questionnaire and interview and this modified criterion. For example, the correlation between the use of key-1 of the questionnaire and the criterion was 0.36 in Fairfax County, 0.27 in New Orleans and 0.27 in San Antonio.

Similarly, the use of key-2 of the questionnaire provided correlations with the criterion of 0.21 in Fairfax County, 0.07 in New Orleans and 0.09 in San Antonio.

The correlation between the key-3, used to score the interview, was greater than either of the two keys used for the questionnaire.

A number of combinations of these keys were also used, as shown in Table 20, with the resultant multiple correlations. In row 5 of Table 20 is shown the effect of summing the scores obtained on questionnaire keys 1 and 2 into a single independent variable and computing the multiple correlation

TABLE 20. CORRELATIONS BETWEEN HSRI TEST VARIABLES AND THE MODIFIED CRITERION, CRIT-EXTR, IN EACH ASAP

Predictors	Fairfax County	New Orleans	San Antonio
1. $a.k_1$	0.36	0.27	0.27
2. $a.k_2$	0.21	0.07	0.09
3. $a.k_3$	0.51	0.40	0.39
4. $a.(k_1+k_2)$	0.33	0.20	0.22
5. $a.(k_1+k_2) + b.k_3$	0.51	0.46	0.42
6. $a.(k_1+k_2+k_3)$	0.46	0.34	0.34
7. $a.(k_1+k_2)$	0.49	0.38	0.38
8. $a.(k_2+k_3)$	0.48	0.34	0.35
9. $a.k_1+b.k_2+c.k_3$	0.52	0.43	0.43
10. $2.k_1-1.k_2+4.k_3$	0.51	0.41	0.40

coefficient using this variable as one predictor and the score on the interview, key-3, as a second predictor of the criterion, CRIT-EXTR. A multiple correlation of 0.51 was obtained for the Fairfax County data, 0.46 for New Orleans and 0.42 for San Antonio.

Row 9 shows the multiple correlations obtained when the two questionnaire keys and the interview key are entered as separate independent variables to predict the criterion, resulting in multiple correlation coefficients of 0.52 in Fairfax County, 0.43 in New Orleans and 0.43 in San Antonio. Thus, the derivation of optimum weights, which differ for each of the three ASAPs, for each of the three keys resulted in the highest multiple correlations being obtained.

These values can be compared with those shown in row 10 of Table 20, which are the multiple correlation coefficients between the composite modified criterion, CRIT-EXTR, and the HSRI test using the weighting scheme derived in the original



validation study for each of the three keys. It will be noted that the multiple correlation coefficient in Fairfax County was 0.51, in New Orleans it was 0.41 and in San Antonio it was 0.40. Since the use of this fixed weighting scheme applied to the data from each ASAP produced correlation coefficients almost as large as those obtained in row 9, when different and optimum weights are used for each ASAP, there is little likelihood that a different weighting scheme from the one now employed would increase test predictions. This observation, together with the fact that the current key weights are in widespread operational use, leads to the conclusion that the current weights should be retained.

#### Test Reliability

As a check on the internal consistency of the various predictors in the HSRI test, each key was split into two forms. The items were sorted into groups in which all members dealt with essentially similar areas of behavior or history. Each group was then split into similar pairs of questions. One question of each pair was then assigned to each of the equivalent forms. Half of the items assigned to each form occurred first in the full length test compared to the item with which it was paired, while the remaining ones were the second-asked items in their pairs.

The responses of the subjects in two ASAPs were then rescored using the key for these two forms, so that for each individual two scores were obtained, one on each of the "equivalent" forms. This was done for the following measures: key-1 and key-2 of the questionnaire, key-3 of the interview, the overall questionnaire score, the interview score and the total questionnaire and interview score. While the key values are the unweighted scores, the questionnaire, interview and total scores were computed using the same weighting scheme as for the full-length test.

Pearson product-moment correlation coefficients were computed between the scores of the subjects on the two forms of the test. The obtained correlations were corrected by the

Spearman-Brown Prophecy Formula in order to obtain the estimate of the reliability coefficient of the full-length scales. These corrected reliability estimates are shown in Table 21. While the reliability of the predictive variables is quite satisfactory in the Fairfax County sample, they are somewhat lower than desirable in the San Antonio sample. Reliability estimates for the data in New Orleans were not obtained.

TABLE 21. SPLIT HALF CORRECTED ESTIMATES OF RELIABILITY FOR UNWEIGHTED KEYS AND WEIGHTED PREDICTORS OF THE HSRI TEST IN TWO ASAPs

Scale	Fairfax County	San Antonio
Key 1	0.86	0.68
Key 2	0.91	0.83
Key 3	0.92	0.66
Questionnaire Score	0.77	0.60
Interview Score	0.92	0.66
Questionnaire and Interview Total Score	0.93	0.74

## SURVEY OF OPERATIONAL CONSIDERATIONS

A survey of operational considerations of the HSRI procedures for identifying problem drinkers was conducted for the purpose of capturing the insights and experiences of interviewers who have used the procedures in the field. The results of the survey were used in considering whether to revise the procedures for future use.

The subjects of the survey were Alcohol Safety Action Project (ASAP) workers who have used the procedures to diagnose problem drinkers and recommend remedial activities. Data collection activities, in support of the validation work described in earlier sections, were on-going in some ASAPs for the purpose of recording the outcome of the procedures in terms of actual responses and scores. Therefore, it was considered appropriate to direct the survey to persons who were involved in obtaining those data. In order to provide as diverse a sample as possible, however, the survey also included interviewers associated with other ASAPs not involved in data collection activities for statistical evaluation of the procedures.

In all, 57 interviewers from 12 ASAPs participated in the survey. The survey instrument was a self-administered questionnaire which was developed at HSRI and mailed in packets of ten copies to the project directors of 27 ASAPs which were either known to be using the procedures or not known not to be using them. A cover letter with the questionnaires requested that the project director distribute the instruments to the interviewers who were using the procedures in his ASAP. Data collection began August 3, 1973 and concluded October 31, 1973.

The survey instrument was concerned with four general areas of interest: (1) interviewer characteristics, including demographic information, current drinking status and previous training in the areas of alcohol studies and interviewing

techniques, (2) administration of the procedures instruments, i.e., a self-administrated questionnaire and a personal interview, (3) interviewer rating of the diagnostic capability of the procedures instruments as they are currently designed and if they were optimally designed and (4) specific criticism of the instruments in terms of the wording, order of questions and scoring mechanics. A copy of the survey instrument, with tabulated responses, is contained in Appendix A.

### Survey Results

Interviewer Characteristics. Seventy percent of the interviewer respondents were male. Their ages ranged from 24 years to 65 years with a mean age of 36. Three-fourths of the respondents reported that they had received a bachelor's degree and 36% had completed at least one year of graduate work.

In terms of their current drinking patterns, two-thirds said they did drink alcohol, with 17% describing themselves as very light drinkers, 33% as fairly light drinkers, and 17% as moderate drinkers. There were no responses in the categories of fairly heavy or very heavy drinker. Thirty-two percent said they were total abstainers, and 26% reported that they had had a drinking problem in the past.

Slightly over half (52%) had had some special training in the diagnosis or treatment of alcoholism. The 29 respondents who had had training reported a range of 30 to 1000 hours of training, with a mean of 215 hours and a median of 150 hours. Those hours included time spent both in the classroom and in personal study outside the classroom. Eleven respondents reported that the primary emphasis of their training had been in the psychological aspects of problem drinking, and ten had studied counseling techniques most intensively. Seven respondents reported primary emphasis on physiological complications of excessive use of alcohol, six on interviewing techniques and five on effectiveness of various treatment methods. Ten respondents did not treat the categories as mutually exclusive

elements and reported equal emphasis on more than one aspect of training.

Administration of the Questionnaire and Interview. Almost all respondents (98%) administered the questionnaire to subjects individually. Only one respondent reported administering the instrument to groups of subjects, and in that case the approximate size of the groups was ten. The questionnaire was administered in a private room by 79% of the respondents, in a semi-private room (limited use of the room by uninvolved persons) by 14% of the respondents, and in a public room by 7% of the respondents.

Over half of the respondents (68%) reported that the questionnaire is administered after a subject is convicted of the drunk driving charge and before he is sentenced. But 5% administered the questionnaire before the subject's arraignment, 3% before his trial, 3% before his conviction, 11% after sentencing and 9% said that the time of administration varies widely.

There was no concensus regarding the length of time which generally intervenes between the actual offense of the subject and the time of questionnaire administration. Somewhat less than half (44%) reported a delay of two weeks or less, while 56% said that the delay was generally three or more weeks.

With regard to administration of the interview, the majority (70%) reported conducting the interview after a subject is convicted and before he is sentenced. Hence, it was not surprising that 96% reported that both the questionnaire and the interview are administered on the same day. Eight-two percent administer the questionnaire before conducting the personal interview. The time reported as intervening between the actual offense of the subject and the time of the interview varied in much the same way as the time reported between the offense and the questionnaire administration. A delay of three or more weeks was reported by 62% of the respondents.

Since the questionnaire is designed to be self-administered, respondents were asked to estimate the proportion of subjects

who were able to complete the questionnaire with little or no assistance from supervising personnel, and to estimate the time taken to complete the questionnaire when assistance was minimal. As shown in Table 22, respondents reported that an average of 69% of their subjects require only minimal assistance in completing the questionnaire. For those subjects, the average time taken to complete the questionnaire was 19 minutes. On the other hand, respondents estimated that an average of 19% of their subjects could not complete the questionnaire unless half or more of the instrument was read orally to them. With those subjects, the average time taken was 28 minutes, an increase of nine minutes compared with primarily unassisted self-administration of the questionnaire.

Since assistance was not an issue with regard to the personal interview, respondents were asked only to estimate the time generally taken in conducting the interview. As shown in Table 22, the range was broad, from ten minutes to 240 minutes. The average time, however, was 45 minutes, which was in accord with prior expectations.

Rating of the Questionnaire and Interview. Respondents were asked to rate the diagnostic capability of the questionnaire, the interview, and the two instruments combined on a five-point scale from "very low" to "very high". As a measure of the relative strength of their assessments, respondents were also asked to rate the maximum diagnostic capability of optimal instruments similar in administration, format and length to the ones currently being used.

As shown in Table 23, "high" ratings were given by slightly more than half of the respondents to the current interview alone and the current questionnaire and interview combined. Only 40%, however, felt that the questionnaire as it is now designed was "high" in diagnostic capability. An increase from 40% to 54% was found in the proportion who felt that an optimal questionnaire would have "high" diagnostic capability compared with the current questionnaire. But no marked increases were found in the proportions who gave those

TABLE 22. QUESTIONNAIRE AND INTERVIEW ADMINISTRATION

	Questionnaire		Interview
	With Assistance (1/2 or More of Questionnaire Read Orally)	Without Assistance (Minimal or No Assistance)	
% of Subjects Estimated by Respondents (N=55)			
Range	0-90%	0-100%	----
Average	19%	69%	----
Time for Completion (N=49)			
Range	10-90 Minutes	3-90 Minutes	10-240 Minutes
Average	28 Minutes	19 Minutes	45 Minutes

45

TABLE 23. DIAGNOSTIC CAPABILITY OF INSTRUMENTS: INTERVIEWER ASSESSMENT OF CURRENT AND OPTIMAL INSTRUMENTS (IN PERCENT OF RESPONDENTS)

Rating	Current			Optimal		
	Questionnaire %	Interview %	Questionnaire and Interview %	Questionnaire %	Interview %	Questionnaire and Interview %
High	40	54	59	54	57	55
Medium	50	44	41	41	41	45
Low	10	2	0	5	2	0
Total	100	100	100	100	100	100

ratings to an optimal interview and an optimal questionnaire and interview combined.

Analysis of individual responses in terms of changes between ratings of the current instruments and optimal instruments showed that slightly more than two-thirds of the respondents gave the current instruments the same rating on diagnostic capability that they gave the optimal instruments. Twenty-three percent, however, felt that an optimal questionnaire would have a higher diagnostic capability than the current questionnaire, 15% gave a higher rating to an optimal interview than the current interview, and 11% thought that a combination of optimal instruments would have higher diagnostic capability than the combination of current instruments. Some respondents were found to have given lower ratings to the optimal instruments than the current instruments. These respondents probably misunderstood the questions regarding optimal instruments and may have felt that any changes in the current instruments would reduce their diagnostic capabilities.

Further analysis of the degree to which opinion changed between the current and optimal instruments showed that virtually all respondents who changed their rating of the instruments moved only one degree higher or lower. For example, a respondent who rated the questionnaire as it is designed now as having "low" diagnostic capability was most likely to increase his rating of an optimal questionnaire by only one degree to "medium".

Treatment-Related and Affective Considerations. In terms of the effectiveness of the instruments in suggesting treatment modalities, on a five-point scale 81% of respondents rated the questionnaire as "somewhat" or "very" useful (the two highest categories), and 88% rated the interview as somewhat or very useful. Opinion was more favorable toward the interview, however, in that 40% rated it as "very" useful compared with only 16% who rated the questionnaire as "very" useful. A majority of respondents (64%) also indicated that the interview was "very" useful as a vehicle for structuring



a dialogue between the subject and the interviewer. More than three-fourths (78%) felt that the interview took about the right length of time to conduct with regard to establishing and maintaining rapport with the subject.

Overall, the interview was reported as having more emotional effect on subjects than the self-administered questionnaire. Fifty-one percent reported anxiety as an effect of the interview compared with 43% who observed anxiety among subjects who completed the questionnaire. Mild annoyance with the interview was reported by 53% and by 59% with regard to the questionnaire. On the other hand, only 20% felt that the questionnaire produced reassurance in subjects, whereas 48% observed reassurance as a result of the interview. Half of the respondents reported that the questionnaire sometimes produced no observable effect on subjects, compared with 27% who said the interview produced no effect. Hostility was observed by only 14% with regard to the questionnaire and by 24% with regard to the interview.

Specific Content and Scoring Considerations. Respondents were asked to examine the questionnaire and interview forms critically and to comment in five areas: (1) question order, (2) word and question meaning, (3) sensitive words or questions, (4) inappropriate point scores and (5) scoring mechanics.

A review of the responses showed that comments were made about the questionnaire more often than the interview, and the primary area of concern was in word and question meaning. Sensitive words or questions which evoke emotional responses by subjects were found to be of next greatest concern, and question order, inappropriate point scores and scoring mechanics were found to be of least concern to most respondents.

Although comments were less frequently made about the interview, they were more comprehensive in scope. Whole questions were reworded, additional questions as well as

amplifications of current questions were suggested, and the order of questions and entire sections of the interview were constructively criticized.

These general results are in accord both with respondents' ratings of the diagnostic capability of the questionnaire and interview, and with the method of administering the instruments. The relatively low rating on diagnostic capability of the questionnaire compared with the interview led the investigators to expect more general criticism of the questionnaire. Since word and question meaning were the overwhelming concern of most respondents with the questionnaire, it is inferred that the increased rating received by an optimal instrument similar to the questionnaire in format, administration, and length can be attributed to an expected revision of many words and questions to clarify their meaning to subjects.

The difference in administration of the instruments led investigators to expect more comprehensive comments about the interview than the questionnaire. While our respondents may have been called upon by subjects to clarify a word or question in the self-administered questionnaire, the problems were not critical in terms of breaking rapport or obstructing a dialogue between the subject and the interviewer. In the case of the interview, our respondents clearly have encountered and solved some problems in accordance with their own and their subjects' needs. The relatively high level of satisfaction with the interview as it is currently designed may well be the result of the opportunity afforded the interviewer to rephrase and amplify the questions as soon as the subject appears unable to understand or unwilling to respond to the questions as first posed. This sort of flexibility is desirable and is in accord with the instructions directed to the interviewer in the manual.

Specific comments about the questionnaire included problems with the meaning of the following words: revoked, spree, binge, self-conscious, self-confidence, rowdy, tranquilizers,

anxious, anti-depressants, debts, creditors, sufficient, stress, moderate, excessive, abnormal, perspire, high-strung, depressed, immoral, confide and vague.

Whole questionnaire statements whose meaning was felt to be frequently misunderstood included: (Q11) Is your income sufficient for your basic needs? (Q13) My judgment is better than it ever was. (Q18) I have had periods in which I carried on activities without knowing later what I had been doing. (Q45) In the last year, how many times have you drunk more than you could handle but still been a good driver when you got behind the wheel?

Confusing questions in the interview include: (Keypunch #421) While driving have you ever been stopped by the police but not ticketed, when you knew you had been drinking too much? (#431) Do you feel you always drink like a social drinker? (#455) Do you ever get the feeling that you "need" or "really want" a drink?

Additional questions suggested were related to a subject's military history, the events surrounding his current arrest, his prior probation history, his own definition of a social drinker, his drinking pattern, spouse's employment history, duration of marriage, separation, and divorce as applicable, and subject's previous employment history.

Suggested revisions of the questionnaire and interview wording invariably illustrated the need to use more concrete and familiar terminology. For example, "creditors" was changed to "people you owe money to", "apt" to "likely", "moderate" to "average", "perspire" to "sweat", "high-strung" to "nervous" and "excessive drinker" to "person who drinks too much". Again, such suggestions were more likely to have been made in reference to the questionnaire than the interview. Clearly, the self-administered design of the questionnaire makes it the instrument more vulnerable to misunderstanding by the subject.

Scoring Considerations. Almost all respondents (89%) reported that they have been using the diagnostic categories

of problem drinker, presumptive problem drinker, and non-problem drinker and the scoring breakpoints as they are set forth in the manual. However, most respondents (92%) also said that there were cases in which a low score was indicative of problem drinking. The average estimate of the incidence of such cases was 14%, and the range of estimates was from 1% to 50%.

The dominant reasons attributed to the occurrence of low scores for problem drinkers were lying, denial and age. Since all three responses were cited in the survey instrument as examples of responses, the findings may be of limited value. Additional reasons for low scores from problem drinkers were confusion about the meaning of the questions, primarily as a result of reading disabilities, and manipulation of responses on the part of highly educated subjects. In the latter case, it was felt that well-educated subjects tended to structure each response in accord with their best estimate of the question's purpose rather than to react spontaneously.

#### Summary of Interviewer Survey

A survey of ASAP interviewers was conducted for the purpose of capturing the insights and experiences of persons with experience using the HSRI procedures for identifying problem drinkers in the field. In all, 57 interviewers from 12 ASAPs completed a self-administered questionnaire for the survey.

The respondents were predominantly found to be men who had received at least a bachelor's degree. The mean age of the respondents was 36. The majority described themselves as moderate to light drinkers, although 26% reported they had had a drinking problem in the past. Only slightly over half (52%) had had special training in alcohol studies or interviewing techniques.

The questionnaire tended to be administered to subjects on an individual basis in a private room. In the majority of cases reported, the questionnaire was completed after a subject was convicted and before he was sentenced, although there was some variation in the responses. Slightly more than half (56%)

reported a delay of three or more weeks between the subject's actual offense and the time of questionnaire administration. Almost all respondents (96%) said that the interview is conducted on the same day as the questionnaire administration.

The average estimate of the proportion of subjects who could not complete the questionnaire unless half or more was read orally to them was 19%. An average of 28 minutes was reported for oral administration, compared with an average of 19 minutes for essentially unassisted completion of the instrument. The average time for conducting the personal interview was 45 minutes.

The majority of respondents gave "high" ratings on diagnostic capability to the interview when used alone and when used in conjunction with the questionnaire. The questionnaire alone, however, was considered "high" in diagnostic capability by only 40% of the respondents. A marked increase to 54% was found in the proportion of respondents who felt that an optimal questionnaire would have "high" diagnostic capability. Less change was found in the relative proportions who thought an optimal interview or combination of instrument would have "high" diagnostic capability.

Respondents generally found both the interview and the questionnaire to be useful as guides to suggesting appropriate treatment modalities for their subjects. In terms of establishing and maintaining rapport with subjects, the interview was considered to take about the right length of time. The interview was also considered highly useful in structuring a dialogue with a subject.

The emotional impact of the interview was felt to be higher than the questionnaire. Anxiety, reassurance, and hostility were observed more often during the interview, and respondents reported more frequently that the questionnaire produced no observable effect on subjects.

The overriding concern of most respondents regarding specific problem areas with the instruments involved the vocabulary used in the questionnaire. The self-administered

form of the questionnaire, in contrast to the face-to-face personal interview, makes the questionnaire more vulnerable to misunderstanding by subjects. Respondents clearly indicated a need for more concrete and familiar terminology in the questionnaire. A set of revised questions which incorporate suggestions obtained from the survey is presented in Appendix B. The reader is cautioned that the revisions have not been experimentally validated. However, it is the judgment of the authors that the changes in wording will provide clarity and any resulting changes in reliability or validity are likely to be slightly positive rather than negative.

## DISCUSSION AND CONCLUSIONS

The analyses that have been made in this study to determine the validity of the HSRI test have indicated that the correlation between test score and criterion classification group membership is between 0.41 and 0.51, in three ASAPs. This level of test validity is quite satisfactory, particularly when it is considered that these validity coefficients were obtained under actual operating conditions and using a criterion of dubious reliability.

Influencing the obtained test scores are the effects that can be attributed to the variety of pre-sentence investigators who administered the procedures, their level of proficiency or learning in this task, and various biases that might have entered due to the test situation. Problems associated with the criterion variable, CRIT, that was used here have already been indicated and there is little doubt that the value of the correlations between the test scores and the criterion variables could not have been expected to be much greater when considering the nature of the criterion itself.

In evaluating the effectiveness of the HSRI test in terms of its ability to discriminate between social drinkers and problem drinkers, it was found that the previously recommended cut-off scores are too conservative when used in a court setting. Based on the analyses that have been made it is recommended that cut-off scores be used which classify persons whose combined questionnaire and interview score is 39 or less as social drinkers, persons scoring between 40 and 49 as presumptive problem drinkers, and persons scoring at 50 or above as problem drinkers. If this is done it would be expected that, on average across various ASAPs, about 83% of those persons whose background history indicates them to be problem drinkers, will be so classified. Of those persons

whom the background history items indicated to be excessive drinkers, the test classified 30.8% as problem drinkers; and those who were classified on the criterion as social drinkers, 21.8% were classified as problem drinkers by the test. In this respect, the test results appear to be acceptable, because the criterion is unable to classify persons as problem drinkers who do not have a sufficient background history indicative of this problem. The test, on the other hand, is not hampered in this regard. It could be readily inferred that those persons who score within the range of the bulk of the people who are identified on the criterion variable as problem drinkers, should be so classified. This also indicates a clear advantage of a psychometric classification procedure, since it is able to identify individuals who have not yet been arrested for drinking-related offenses.

Using a cutting score of 50 would classify about 55% of all DWI drivers, on average for all three ASAPs, as problem drinkers using the HSRI procedures.

The major error in classification, in DWI samples, would appear to be those 16.9% (Table 14) whom the HSRI test classified as social drinkers but who had clear indications of a drinking problem based on the criterion variable. It is fairly evident that some of these persons are misclassified because they made an attempt to fake the test or were expressing unconscious denial of a drinking problem. Table 15 shows that persons who have a greater level of education tend to score lower on the HSRI test than would be expected. This confirms that the HSRI test can be faked to some degree, and it would be expected that drivers who have had more formal education than others would be more successful in such behavior.

The latter tends to be corroborated by the subjective evaluations of the effectiveness of the questionnaire and interview made by the pre-sentence investigators, who also reported that they recognized that some problem drinkers



obtained low scores. They attributed this to lying, denial, and age of the subject, as well as the ability to manipulate the responses by those who were better educated.

It is conceivable that subjects were sensitized to the underlying intent of the HSRI test because, in New Orleans, the test was administered as one of a battery of other tests such as the Johns Hopkins test and the National Council on Alcoholism Questionnaire, which ask overt questions concerning drinking behavior. Therefore, there was probably some loss in being able to disguise the intent of the HSRI test in measuring problem drinker behavior. Also, the subjects would have had an opportunity to become bored with the total set of tests administered to them and, in addition, to become somewhat test-wise and more able to fake the questionnaire and interview.

Overall, the results of the analyses suggest that the HSRI test is highly effective in the court setting, and would be more valuable if the cut-off scores originally recommended in the Manual by Kerlan, et.al., (1971) were reduced as mentioned above.

The survey of operational considerations suggested that some subjects experienced some difficulty with questionnaire items, and therefore, some changes in the wording of those items has been recommended. This is shown in the form of a revised set of test items, whose overall content is not likely to have been affected by the minor changes in wording that are recommended in Appendix B. However, this revision has not yet been used and how it correlates with the present questionnaire is not known. Potentially, it should be more reliable.

Since some ASAPs and other agencies who are using the HSRI procedures are in areas with a concentration of persons speaking Spanish, a Spanish version of the questionnaire was prepared and is shown in Appendix C. It is believed that this will be helpful to a number of ongoing programs to facilitate administration of the test.

It was noted, in our analyses, that a number of errors were made by the persons scoring the HSRI test. This confirmed an earlier impression that it would be useful to develop improved scoring keys. Templates for these keys were developed, and it is believed that these will facilitate scoring of the questionnaire by making the process faster and less prone to mistakes.

In summary, the HSRI procedures are found to be acceptable by persons who have been using them, they appear to provide a reasonable degree of discriminability between social drinkers and problem drinkers and, with the recommendations that are made here for some minor revisions, provide an effective and practical method for identification of problem drinkers by pre-sentence investigators.

## RECOMMENDATIONS

Use of both the questionnaire and interview is recommended. The interview is the preferred diagnostic instrument if only one of the two is to be used. The instruments should be scored with the scoring items and key weights developed in the prior study and now in operational use but with reduced scoring cut-offs as tabulated below:

<u>Scale</u>	<u>Classification</u>		
	<u>Social Drinker</u>	<u>Presumptive Problem Drinker</u>	<u>Problem Drinker</u>
Questionnaire Only	<u>&lt;11</u>	12-15	<u>&gt;16</u>
Interview Only	<u>&lt;24</u>	25-39	<u>&gt;40</u>
Questionnaire and Interview Combined Scores	<u>&lt;39</u>	40-49	<u>&gt;50</u>

Auxiliary data and information useful in making a correct identification, such as number of prior DWI convictions, blood alcohol concentration at the time of arrest, and the number of prior Drunk & Disorderly convictions, should be obtained for all defendants by pre-sentence investigators. These data, when available, should be relied upon heavily in making final judgments regarding severity of drinking problems, particularly for defendants classified as presumptive problem drinkers by the HSRI tests. Indications of problem drinking derived from such auxiliary data should also be used for defendants classified by the tests as social drinkers but who are suspected of faking, overt lying, or denial of an existing drinking problem.

The revised questionnaire given in Appendix B should be used by agencies and jurisdictions just starting its use. Jurisdictions now using the earlier version of the questionnaire may wish to phase in use of the revision as current

supplies are depleted. The scoring items and key weights remain unchanged, but the reduced scoring cut-offs given above should be used for classifying DWI defendants. Revised scoring templates appropriate to the revised questionnaire format should be developed.

Research opportunities should be sought for continued validation and refinement of the protocol. The availability of independent criteria for determination of the severity of drinking problems, obtained either at the time the protocol is administered or subsequently during remedial programs, should be a key factor of such research.

APPENDIX A  
SURVEY OF OPERATIONAL CONSIDERATIONS



SURVEY OF OPERATIONAL CONSIDERATIONS  
 "Court Procedures for Identifying Problem Drinkers"  
 Highway Safety Research Institute  
 July, 1973

SECTION A. ADMINISTRATION OF THE QUESTIONNAIRE AND INTERVIEW (4) 1

A1. With which ASAP are you associated? \_\_\_\_\_ (5-6)

\_\_\_\_\_

A2. Which of the following instruments and data forms are generally completed for each respondent? (CHECK ALL THAT APPLY)

(% Yes)

<u>98</u>	(1) Questionnaire	(7)
<u>90</u>	(2) Interview	(8)
<u>91</u>	(3) Driver record	(9)
<u>77</u>	(4) Criminal record	(10)
<u>91</u>	(5) BAC test results	(11)
<u>17</u>	(6) Appendix C	(12)
<u>11</u>	(7) Appendix D	(13)
<u>5</u>	(8) Appendix E	(14)
<u>44</u>	(9) Other (DESCRIBE) _____	(15)

\_\_\_\_\_

\_\_\_\_\_

A3. Is the questionnaire administered (16-18)

<u>98</u>	(100) Individually to respondents?	
<u>2</u>	(2) To respondents _____> in groups?	(a) How many respondents are generally in each group?  <u>10</u> # of Respondents
<u>0</u>	(3) To respondents both _____> individually and in groups?	
<u>*1</u>	(400) Questionnaire is not used (SKIP TO QUESTION All, PAGE 4)	

\*A tabulated response preceded by an asterisk indicates an actual frequency. All other tabulated responses are presented as percentages of responses.

A4. What sort of room is used for the questionnaire administration? (19)

- 79 (1) Private (no uninvolved persons using room)
- 14 (2) Semi-private (limited use of room by uninvolved persons)
- 7 (3) Public (unlimited use of room by uninvolved persons)
- \*1 (4) Questionnaire is not used

A5. Which of the following best describes when a respondent completes the questionnaire? (20)

- 5 (1) Prior to arraignment
- 3 (2) Prior to trial
- 3 (3) Prior to conviction
- 68 (4) Prior to sentencing
- 11 (5) After sentencing
- 9 (6) Other (EXPLAIN) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \*1 (7) Questionnaire is not used

A6. How many days generally intervene between the actual offense and the questionnaire administration? (21)

- 24 (1) Less than 1 week                      Mean = 3 (3-4 wks.)
- 20 (2) 1-2 weeks
- 27 (3) 3-4 weeks
- 29 (4) 1 or more months
- \*1 (5) Questionnaire is not used
- \*1 (9) NA\*\*

\*\*Not answered



A7. Approximately what percent of respondents are able to complete the questionnaire with little or no assistance from supervising personnel? (22-23)

\_\_\_\_\_ (PERCENT) Range=0-100 Mean=69% N=54

A7a. Approximately how many minutes are required for completion of the questionnaire when assistance is minimal? (24)

7 (1) 10 minutes or less Mean=3 (16-20 min.)

45 (2) 11-15 minutes

32 (3) 16-20 minutes

11 (4) 21-30 minutes

5 (5) 31 or more minutes

\*1 (6) Questionnaire is not used

A7b. What is the least amount of time required when assistance is minimal? (25-27)

\_\_\_\_\_ (# OF MINUTES) Range=3-60 Mean=12 N=54

A7c. And what is the most amount of time required when assistance is minimal? (28-30)

\_\_\_\_\_ (# OF MINUTES) Range=10-90 Mean=26 N=54

A7d. Approximately what percent of respondents must have more than half of the questionnaire read orally to them? (31-32)

\_\_\_\_\_ (PERCENT) IF ZERO, GO TO A8 Range=0-90 Mean=19% N=55

A7e. How long does it generally take to complete the questionnaire in these instances? (33-35)

\_\_\_\_\_ (# OF MINUTES) Range=10-90 Mean=28 N=50

A8. What kinds of feelings does completion of the questionnaire generally seem to produce in respondents? (CHECK ALL THAT APPLY)

43 (1) Anxiety (36)

14 (2) Hostility (37)

59 (3) Mild annoyance (38)

20 (4) Reassurance (39)

9 (5) Other (EXPLAIN) \_\_\_\_\_ (40)

50 (6) No observable effect (41)

\*1 (7) Questionnaire is not used

A9. How would you summarize your opinion about the diagnostic capability of the questionnaire in its present form? (42)

- 3 (1) Very high
- 37 (2) High
- 50 (3) Medium
- 9 (4) Low
- 0 (5) Very low
- \*1 (6) Questionnaire not used

A10. How useful do you feel the questionnaire is in suggesting treatment modalities for the respondent? (43)

- 16 (1) Very useful
- 65 (2) Somewhat useful
- 13 (3) Not very useful
- 5 (4) Not at all useful
- \*1 (5) Questionnaire is not used

ALL RESPONDENTS

All. Which of the following best describes when the interview is conducted? (44)

- 4 (1) Prior to arraignment
- 8 (2) Prior to trial
- 2 (3) Prior to conviction
- 70 (4) Prior to sentencing
- 12 (5) After sentencing
- 4 (6) Other (EXPLAIN) \_\_\_\_\_

\*7 (7) Interview is not used (SKIP TO SECTION B, PAGE 7)

A12. Does the interview generally precede or follow the questionnaire? (45)

- 18 (1) Interview precedes questionnaire
- 82 (2) Interview follows questionnaire
- \*8 (3) Not applicable - either the questionnaire or the interview is not used (SKIP TO QUESTION A14, PAGE 5)

A13. How much time generally intervenes between questionnaire administration and the interview? (46)

- 96 (1) Both are given on the same day
- 2 (2) Less than one week
- 2 (3) 1-2 weeks
- 0 (4) 3-4 weeks
- 0 (5) 1 or more months
- \*8 (6) Not applicable - either the questionnaire or the interview is not used

A14. Approximately how long after the actual offense does the interview take place? (47)

- 18 (1) Less than 1 week                      Mean=3 (3-4 wks.)
- 18 (2) 1-2 weeks
- 34 (3) 3-4 weeks
- 28 (4) 1 or more months
- \*7 (5) Interview is not used

A15. Approximately how many minutes are required for conducting the interview? (48)

- 6 (1) 15 minutes or less                      Mean=3 (31-45 min.)
- 28 (2) 16-30 minutes
- 36 (3) 31-45 minutes
- 12 (4) 46-60 minutes
- 18 (5) 60 minutes or more
- \*7 (6) Interview is not used

A15a. What is the least amount of time required? (49-51)

\_\_\_\_\_ (# OF MINUTES)    Range=10-60    Mean=26    N=49

A15b. And what is the most amount of time required? (52-54)

\_\_\_\_\_ (# OF MINUTES)    Range=20-240    Mean=65    N=49  
                                    Medium=60

A16. In terms of establishing and maintaining rapport with the respondent, would you say that the time generally required to complete the interview is too long, about right, or not long enough? (55)

- 16 (1) Too long
- 78 (2) About right
- 6 (3) Not long enough
- \*7 (4) Interview is not used

A16a. And how do you feel generally about the interview as a vehicle for structuring a dialogue between the respondent and the interviewer? (56)

- 64 (1) Very useful
- 32 (2) Somewhat useful
- 4 (3) Not very useful
- 0 (4) Not at all useful
- \*7 (5) Interview is not used

A17. What kinds of feelings does the interview generally seem to produce in respondents? (CHECK ALL THAT APPLY)

- 51 (1) Anxiety (57)
- 24 (2) Hostility (58)
- 53 (3) Mild annoyance (59)
- 48 (4) Reassurance (60)
- 6 (5) Other (EXPLAIN) \_\_\_\_\_ (61)

- 
- 27 (6) No observable effect (62)
  - \*7 (8) Interview is not used      \*1 (9) NA (on all items)

A18. How would you summarize your opinion about the diagnostic capability of the interview in its present form? (63)

- 14 (1) Very high                      2 (4) Low
- 40 (2) High                              0 (5) Very low
- 44 (3) Medium                          \*7 (6) Interview not used

A19. How useful do you feel the interview is in suggesting treatment modalities for the respondent? (64)

- 40 (1) Very useful                      4 (4) Not at all useful
- 48 (2) Somewhat useful              \*7 (5) Interview is not used
- 8 (3) Not very useful

A20. How would you summarize your opinion about the diagnostic capability of the interview and questionnaire combined in their present form? (65)

10 (1) Very high

49 (2) High

41 (3) Medium

0 (4) Low

0 (5) Very low

\*7 (6) Questionnaire and Interview not used

\*1 (9) NA

---

SECTION B. CONTENT AND SCORING

THE FOLLOWING SECTION CONCERNS SPECIFIC CONTENT AND SCORING ELEMENTS OF THE QUESTIONNAIRE AND INTERVIEW. PLEASE COMPLETE THE SECTION AS FULLY AS POSSIBLE ACCORDING TO YOUR USE OF THE INSTRUMENTS.

B1. Now please read through your own copies of the instruments and consider critically the topics listed below. When possible, please use the margins and spaces between lines on the instruments to indicate your responses to each topic. Use the following separate page, however, to write longer explanations of problems you have encountered and the solutions which you have found useful.

A. Question Order

Draw arrows or use numbers to indicate where you normally have changed (or would like to change) the order of questions. Explain your reasons briefly.

B. Word and Question Meaning

Circle words or questions commonly misunderstood by respondents. Write substitutions you have used and indicate how well satisfied you are with the results.

C. Sensitive Words or Questions

Indicate which items evoke emotional responses, denial, or lying by respondents. Have you used other means of gaining the desired information.

D. Inappropriate Point Scores

Indicate questions you think should be scored more heavily and which ones should not be scored. Explain your reasons for wanting such changes in the scoring system.

E. Scoring Mechanics

Explain any problems you have encountered in using the scoring keys provided for the instrument.

QUESTIONNAIRE

Question #      Problems & Solutions

INTERVIEW

Keypunch #      Problems & Solutions

B2. Do you use the diagnostic categories of Problem Drinker, Presumptive Problem Drinker and Non-Problem Drinker and the scoring breakpoints as they are set forth in the Manual? (4)

11 (5) No      89 (1) Yes (GO TO QUESTION B3) (5)  
                     \*4 (9) NA

B2a. On the appropriate diagram below, indicate what score breakpoints you do use and write your diagnostic categories for each range.

(1) Questionnaire & Interview	(2) Questionnaire Only	(3) Interview Only	(6)
+ 280 Points	+ 72 Points	+ 280 Points	(7-10)
			(11-14)
			(15-18)
			(19-22)
+ 0	+ 0	+ 0	

B3. Do you feel that there are respondents for whom an exceptionally low score is indicative of problem drinking? (23)

92 (1) Yes      8 (5) No (GO TO QUESTION B4)  
                     \*9 (9) NA

B3a. Approximately what percent of your problem drinking respondents have had such low scores? (24-25)

\_\_\_\_\_ (PERCENT) Range=1-50%    Mean=14%    N=40

B3b. What do you think were the reasons for the low scores (e.g., overt lying, denial, inappropriate scoring system, age of the respondent, etc.)? (26-27)  
(28-29)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (30-31)

B4. About how often would you say your diagnosis and recommendations are accepted by the court or other involved agency? (32)

- 65 (1) Almost always \*2 (9) NA
- 33 (2) Most of the time
- 2 (3) About half the time
- 0 (4) Only occasionally
- 0 (5) Almost never

B5. What is your summary estimate of the maximum diagnostic capability of an optimal instrument similar to the questionnaire in administration, format, and length. (33)

- 4 (1) Very high \*3 (9) NA
- 50 (2) High
- 41 (3) Medium
- 6 (4) Low
- 0 (5) Very low

B6. What is your summary estimate of the maximum diagnostic capability of an optimal instrument similar to the interview in administration, format, and length. (34)

- 9 (1) Very high \*1 (6) Interview not used
- 47 (2) High \*3 (9) NA
- 41 (3) Medium
- 2 (4) Low
- 0 (5) Very low

B7. What is your summary estimate of the maximum diagnostic capability of a combination of optimal instruments similar to the interview and questionnaire in administration, format, and length? (35)

- 15 (1) Very high \*1 (6) Interview or Questionnaire not used
- 40 (2) High
- 45 (3) Medium
- 0 (4) Low \*3 (9) NA
- 0 (5) Very low



SECTION C. INTERVIEWER BACKGROUND INFORMATION

- C1. What is your sex? (36)
- 30 (1) Female  
70 (2) Male
- C2. How old are you? (37-38)
- \_\_\_\_\_ Range=24-65 Mean=36 N=54
- C3. How many grades of school or college have you completed?  
(CHECK BOTH (5) AND (6) IF APPLICABLE AND INDICATE MAJOR  
FIELDS)
- 4 (1) Less than 12 (39)
- 11 (2) 12 grades (HS diploma) (40)
- 7 (3) 1-2 years college (41)
- 4 (4) 3-4 years college (42)
- 75 (5) Bachelors degree → Major field \_\_\_\_\_ (43-45)
- 36 (6) 1 or more years → Major field \_\_\_\_\_ (46-48)  
of graduate work
- C4. How would you describe your own present drinking pattern? (49)
- 32 (1) Total abstainer
- 17 (2) Very light drinker
- 33 (3) Fairly light drinker
- 17 (4) Moderate drinker
- 0 (5) Fairly heavy drinker
- 0 (6) Very heavy drinker

C5. Do you bring to your job as an interviewer the experience of having had a drinking problem in the past? (50)

26 Yes            74 No  
 ↓                    ↓

C5a. What would you say generally are the advantages of having such experience in diagnosing drinking problems? (51-52)

(53-54)  
 \_\_\_\_\_ (55-56)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C5b. And what disadvantages come to mind?

\_\_\_\_\_ (57-58)  
 \_\_\_\_\_ (59-60)  
 \_\_\_\_\_ (61-62)  
 \_\_\_\_\_  
 \_\_\_\_\_

C6. Approximately how many persons have you interviewed using the HSRI interview protocol? (63-66)

\_\_\_\_\_ (# OF PERSONS)    Range=0-2000    Mean=278    N=57  
    Medium=200

C7. Have you had any special training in the diagnosis or treatment of problem drinking and alcoholism?

52 Yes      48 No      \*1 (9) NA      (67)

C7a. Who or what type of institutions conducted that instruction? (68-69)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C7b. Approximately how many hours altogether did the instruction take (including personal study time outside classroom)? (70-72)

\_\_\_\_\_ (# OF HOURS) Range=30-1000      Mean=215      N=24

C7c. Rank order each of the following areas of instruction in their order of emphasis (i.e., primarily time allotted) in your instruction. Use a zero to indicate no instruction in a particular area (1=most emphasis; 2=second most emphasis, etc.).

First & second ranked responses combined:

50 (a) Physiological complications of excessive use of alcohol (N=26) (73)

61 (b) Psychological aspects of problem drinking (N=26) (74)

54 (c) Effectiveness of various treatment methods(N=26) (75)

44 (d) Interviewing techniques (N=25) (76)

48 (e) Counseling techniques (N=25) (77)

\*4(9) NA

\*27(0) Not applicable; R had no special training

THANK YOU FOR YOUR COOPERATION.

PLEASE RETURN ALL RESPONSES

TO: Lyle D. Filkins  
Highway Safety Research Institute  
Huron Parkway & Baxter Road  
Ann Arbor, Michigan 48105



APPENDIX B  
REVISED QUESTIONNAIRE

The suggested revision of the Court Procedures Questionnaire follows in Appendix B. Questions which have remained the same are preceded by an asterisk. All questions may be scored according to the original point system. However, new scoring templates or other method will be necessary for use with the present questionnaire because of the changes in question length and order.

Name \_\_\_\_\_

QUESTIONNAIRE (FORM A)

INSTRUCTIONS. Before you begin, please print your name at the top of this page.

Please answer every question. Do not spend too much time on any one question. We would like your first impressions, so try to answer with the first thing that comes to mind. Answer each question in the order in which it appears. Mark an "X" or check (✓) for the TRUE (yes)/False (no) questions. Where you are asked to answer with a number, (how many) please put the number in the space provided. If the event never happened to you, mark zero (0). There are no right or wrong answers. Give the answer which seems most correct to you. Are there any questions now?

Go to the next page and begin.

QUESTIONNAIRE

FOR OFFICE USE ONLY
CASE ID
# _____
DATE _____

220

- \*1. What is your present marital status?
1. single
  2. separated
  3. divorced
  4. widowed
  5. married
- Enter number here----- (#            ) 221
2. With whom do you live?
1. alone
  2. with friend(s)
  3. with adult relative(s)
  4. with wife (husband)
  5. with ex-wife (ex-husband)
- Enter number here----- (#            ) 222

IF YOU HAVE NEVER BEEN MARRIED SKIP TO QUESTION NUMBER 6

- |  | TRUE  | FALSE |     |
|--|-------|-------|-----|
|  | (yes) | (no)  |     |
| 3. My wife (husband) has often threatened me with separation or divorce.----- (    ) (    )  |       |       | 223 |
| 4. <u>How many</u> times have you and your wife (husband) seriously considered separation or divorce in the last two years?----- (#            ) |       |       | 224 |
| 5. My wife's (husband's) general health is (was) very good.----- (    ) (    )   |       |       | 225 |
| 6. I am employed now.----- (    ) (    )   |       |       | 226 |
| 7. I smoke cigars or cigarettes.----- (    ) (    )  |       |       | 227 |
| 8. About <u>how many</u> packs of cigars or cigarettes do you smoke per week?----- (#            )   |       |       | 228 |
| 9. I have been arrested at least once before this arrest.----- (    ) (    )   |       |       | 229 |



QUESTIONNAIRE

		TRUE	FALSE	
		(yes)	(no)	
10.	My family is upset with the way I live.-----	( )	( )	230
11.	The money I make is enough for my basic needs.-----	( )	( )	231
12.	I am often nervous.-----	( )	( )	232
13.	I make decisions better than I ever could.---	( )	( )	233
14.	I have had a very difficult problem recently (such as something concerning your job, your health, your finances, your family, or a loved one).-----	( )	( )	234
15.	I sometimes have trouble forgetting about things that go wrong.-----	( )	( )	235
16.	I am sometimes so restless that I cannot sit long in a chair.-----	( )	( )	236
17.	I am often sad or down in the dumps.-----	( )	( )	237
18.	I sometimes wonder what I did the night before.-----	( )	( )	238
19.	I have a lot of worries.-----	( )	( )	239
*20.	I have trouble sleeping.-----	( )	( )	240
21.	I am about average in all my habits (such as smoking, drinking, working).-----	( )	( )	241
22.	I have problems that other people don't have.-----	( )	( )	242
*23.	I have lived the right kind of life.-----	( )	( )	243
*24.	My home life is as happy as it should be.---	( )	( )	244
25.	Drinking helps me make friends.-----	( )	( )	245
26.	I often feel as if I have done something wrong or bad.-----	( )	( )	246
27.	The people I owe money to are often too quick to bother me for payments.-----	( )	( )	247
28.	I wish I could be as happy as other people are.-----	( )	( )	248
*29.	I sometimes feel that I am about to go to pieces.-----	( )	( )	249
30.	I usually sweat at night.-----	( )	( )	250
31.	I often feel bad and down in the dumps.-----	( )	( )	251

QUESTIONNAIRE

- |  | TRUE<br>(yes) | FALSE<br>(no) |     |
|--|---------------|---------------|-----|
| *32. About <u>how many</u> years has it been since your last out-of-town vacation? (If you have never taken one, write "9").-----(#  |               | )             | 252 |
| 33. I am a very nervous person.-----   | ( )           | ( )           | 253 |
| 34. I am happy with the way I live.-----   | ( )           | ( )           | 254 |
| 35. I have had my driver's livense suspended or revoked before this arrest.-----   | ( )           | ( )           | 255 |
| 36. About <u>how many</u> times have you gone to someone (a counselor, a social worker, a doctor, etc.) for help for a problem (personal, family, marriage, money, or emotional)?----- | ( )           | ( )           | 256 |
| 37. Someone in my family drinks too much.-----   | ( )           | ( )           | 257 |
| 38. Someone in my family has or has had a drinking problem.-----   | ( )           | ( )           | 258 |
| 39. I am often sad and gloomy.-----  | ( )           | ( )           | 259 |
| *40. I often feel as if I were not myself.-----  | ( )           | ( )           | 260 |
| *41. I am often afraid I will not be able to sleep.-----   | ( )           | ( )           | 261 |
| 42. I often feel afraid to face the future.-----   | ( )           | ( )           | 262 |
| *43. Drinking seems to ease personal problems.-----  | ( )           | ( )           | 263 |
| 44. <u>How many</u> drinks can you have and still drive well?-----(#   |               | )             | 264 |
| 45. In the last year, <u>how many</u> times have you gotten drunk and still driven home safely?---(#   |               | )             | 265 |
| *46. I wish people would stop telling me how to live my life.-----   | ( )           | ( )           | 266 |
| 47. I often am afraid without knowing why.-----  | ( )           | ( )           | 267 |
| 48. Sometimes I feel worthless.-----   | ( )           | ( )           | 268 |
| 49. Sometimes I feel very guilty.-----   | ( )           | ( )           | 269 |
| *50. A drink or two gives me energy to get started.-----   | ( )           | ( )           | 270 |
| 51. I work better when I've had something to drink.-----   | ( )           | ( )           | 271 |
| *52. My daily life is full of things that keep me interested.-----   | ( )           | ( )           | 272 |

QUESTIONNAIRE

TRUE FALSE  
(yes) (no)

53. I often have feel restless without  
knowing why.----- ( ) ( ) 273
54. My friends are much happier than I am.----- ( ) ( ) 274
55. I often feel sorry for myself.----- ( ) ( ) 275
56. Four or five drinks affect my driving.----- ( ) ( ) 276
57. I feel tense and worried most of the time.--- ( ) ( ) 277
58. I am often bored and restless.----- ( ) ( ) 278



APPENDIX C

SPANISH VERSION OF QUESTIONNAIRE

Nombre \_\_\_\_\_

CUESTIONARIO (FORMA A)

INSTRUCCIONES. Antes de comenzar, favor de escribir su nombre en letra de imprenta en la parte superior de esta página.

Favor de contestar todas las preguntas. No pierda mucho tiempo en una sola pregunta. Queremos su primera impresión, así que trate de contestar con lo primero que le venga a la mente. Conteste las preguntas en el orden que aparecen. Ponga una "X" o un "✓" en las preguntas de CIERTO (sí)/FALSO (no). Cuando se le pida que conteste con un número (cuántos) favor de escribir el número en el espacio apropiado. Si el caso nunca le ha ocurrido a usted ponga un cero (0). No hay contestaciones correctas o incorrectas. Ponga la contestación que a usted le parezca más correcta. ¿Hay alguna pregunta ahora?

Pase a la página siguiente y comience.

CUESTIONARIO

PARA USO OFICIAL SOLAMENTE

CASO ID

FECHA

1. ¿Cuál es su estado conyugal en el presente?

- 1. soltero (soltera)
- 2. separado (separada)
- 3. divorciado (divorciada)
- 4. viudo (viuda)
- 5. casado (casada)

Escriba el número aquí----- (# ) 221

2. ¿Con quién vive usted?

- 1. solo (sola)
- 2. con un amigo o amigos (amiga o amigas)
- 3. con parientes
- 4. con su esposa (esposo)
- 5. con su ex-esposa (ex-esposo)

Escriba el número aquí----- (# ) 222

SI USTED NUNCA HA ESTADO CASADO PASE A LA PREGUNTA NÚMERO 6

CIERTO FALSO  
(sí) (no)

3. ¿Cuántas veces han considerado seriamente el divorcio usted y su esposa (esposo) en los últimos dos años?-----

----- (# ) 223

4. ¿Su esposa (esposo) lo (la) amenaza a menudo con el divorcio?-----

( ) ( ) 224

5. ¿Diría usted que la salud de su esposa (esposo) es (era) muy buena?-----

( ) ( ) 225

6. ¿Tiene usted trabajo ahora?-----

( ) ( ) 226

7. ¿Fuma usted?-----

( ) ( ) 227

CUESTIONARIO

	CIERTO (sí)	FALSO (no)	
8. ¿Como cuántas cajetillas de cigarrillos fuma usted a la semana?-----	( )	( )	228
9. ¿Ha sido arrestado alguna vez?-----	(#	)	229
10. ¿Están sus parientes molestos por la forma en que vive usted?-----	( )	( )	230
11. ¿Es su entrada de dinero suficiente para cubrir sus necesidades básicas?-----	( )	( )	231
12. ¿Se encuentra usted molesto debido a nerviosismo (irritabilidad, tensión o inquietud)?-----	( )	( )	232
13. Mi juicio está mejor que nunca -----	( )	( )	233
14. ¿Ha sufrido recientemente por una gran tensión (como algo relacionado con el trabajo, su salud, su situación económica, su familia o alguien querido)?-----	( )	( )	234
15. Yo siento las desilusiones de modo tan fuerte que no puedo sacármelas de la cabeza-----	( )	( )	235
16. Yo paso por largos períodos de gran inquietud y no puedo ni sentarme en una silla por mucho rato-----	( )	( )	236
17. ¿Se encuentra triste o alicaído a menudo?-----	( )	( )	237
18. He tenido momentos en los cuales he hecho cosas que luego no pudo recordar-----	( )	( )	238
19. ¿Tiene usted muchas preocupaciones?-----	( )	( )	239
20. Tengo problemas para dormir -----	( )	( )	240
21. Yo soy moderado en todos mis hábitos -----	( )	( )	241
22. ¿Cree usted que tenga problemas anormales?-----	( )	( )	242
23. He vivido una vida justa -----	( )	( )	243
24. La vida en mi hogar es tan feliz como debe ser -	( )	( )	244
25. ¿Le ayuda la bebida a hacer amigos?-----	( )	( )	245
26. La mayor parte del tiempo yo me siento como si hubiera hecho algo malo -----	( )	( )	246
27. ¿Cree usted que sus acreedores son muy rápidos en venir a molestarlo para cobrar cuentas?-----	( )	( )	247



CUESTIONARIO

		CIERTO	FALSO	
		(sí)	(no)	
28.	Me gustaría ser tan feliz como otros parecen ser -----	( )	( )	248
29.	A veces siento que voy a volverme loco (loca) --	( )	( )	249
30.	Generalmente, ¿suda usted de noche?-----	( )	( )	250
31.	A menudo me siento incómodo y alicaído -----	( )	( )	251
32.	¿Como <u>cuántos</u> años hace que usted no toma unas vacaciones fuera del pueblo? (Si nunca las ha tomado, ponga un "9") -----	( )	( )	252
33.	Soy una persona sensitiva -----	( )	( )	253
34.	Me siento satisfecho (satisfecha) con mi modo de vida -----	( )	( )	254
35.	¿Le han suspendido o quitado alguna vez su licencia para guiar?-----	( )	( )	255
36.	¿Como <u>cuántas</u> veces ha pedido usted ayuda para sus problemas (personales, familiares, matrimoniales o emocionales)?-----	(#	)	256
37.	¿Hay historia de alcoholismo en su familia?-----	( )	( )	257
38.	¿Tiene usted algún pariente que bebe en exceso?--	( )	( )	258
39.	¿Se encuentra a menudo deprimido (deprimada) y de mal humor?-----	( )	( )	259
40.	Muchas veces me siento como si yo no fuera yo mismo (misma) -----	( )	( )	260
41.	A menudo temo que no pueda dormir -----	( )	( )	261
42.	¿A menudo, siente usted miedo a enfrentarse al futuro?-----	( )	( )	262
43.	Me parece que la bebida alivia los problemas personales -----	( )	( )	263
44.	¿ <u>Cuántos</u> "tragos" puede usted tomar y todavía manejar bien?-----	(#	)	264
45.	Durante el año pasado, ¿ <u>cuántas</u> veces bebió usted más de lo que debía, pero aun pudo manejar bien cuando se montó en el auto?-----	(#	)	265
46.	Me gustaría que la gente dejara de decirme como vivir mi vida -----	( )	( )	266

CUESTIONARIO

		CIERTO	FALSO	
		(sí)	(no)	
47.	Muchas veces siento miedo sin saber por qué tengo miedo -----	( )	( )	267
48.	A veces pienso que yo no valgo nada -----	( )	( )	268
49.	¿Se siente usted lleno de pecados o inmoral?-----	( )	( )	269
50.	Un "trago" o dos me dan ánimo para empezar el día -----	( )	( )	270
51.	¿Le ayuda la bebida a trabajar mejor?-----	( )	( )	271
52.	Mi vida diaria está llena de cosas que me mantienen interesado -----	( )	( )	272
53.	A menudo tengo sentimientos de inquietud -----	( )	( )	273
54.	Mis amigos son más felices que yo -----	( )	( )	274
55.	A menudo me da pena de mí mismo -----	( )	( )	275
56.	Diría usted que 4 o 5 "tragos" afectan su manera de manejar?-----	( )	( )	276
57.	Me siento tenso (tensa) y con ansiedad la mayor parte del tiempo -----	( )	( )	277
58.	¿Se siente usted a menudo aburrido (aburrida) e inquieto (inquieta)?-----	( )	( )	278

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National Technical Information Service  
U.S. Department of Commerce  
5285 Port Royal Road  
Springfield, Virginia 22151  
PB 209 958; Price \$3.75

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Direct inquiries to:

Director  
Office of Alcohol Countermeasures  
Traffic Safety Programs  
National Highway Traffic Safety Administration  
Nassif Building, Room 4423  
7th and D Streets, S.W.  
Washington, D.C. 20591

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