DOT HS 800 631

COURT PROCEDURES FOR IDENTIFYING PROBLEM DRINKERS

Phase II

The University of Michigan
Highway Safety Research Institute
Huron Parkway and Baxter Road
Ann Arbor, Michigan 48105

Contract No. FH-11-7615
November 1971
Final Report

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

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the National Highway Traffic Safety Administration.

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT/HS-800 631		

4. Title and Subtitle	5. Report Date
Court Procedures for Identifying Problem Drinkers: Final Report Phase II	November 30, 1971
	6. Performing Organization Code: HSRI 71-120, HuF-11
7. Author(s): Mortimer, R.G., Filkins, L.D., Lower, J.S.	8. Performing Organization Report No.
9. Performing Organization Name and Address: The University of Michigan, Highway Safety Research Institute, Huron Parkway and Baxter Road, Ann Arbor, Michigan 48105	10. Work Unit No.
	11. Contract or Grant No.: FH-11-7615
12. Sponsoring Agency Name and Address: Department of Transportation, National Highway Traffic Safety Administration, Washington, D.C. 20590	13. Type of Report and Period Covered: Final
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract This report summarizes the studies conducted in the first phase of the project and describes the tasks completed in the second phase. The court procedures manual developed in Phase I was reviewed by a panel of experts and subsequently revised. Three volumes were prepared describing the procedures to be used to identify the problem drinkers among drivers convicted of alcohol-related driving offenses, provide background information to the court worker, and describe the use of scoring keys to derive a diagnosis. The manual was used in five county alcohol safety programs in Michigan with a total of 69 drivers convicted of driving under the influence of liquor (DUIL). The interviewers also made a separate diagnosis of problem drinking. There was good agreement between the interviewers' diagnoses and those obtained by use of the manual. The manual diagnosed 66% of the drivers as problem drinkers. The manual was also applied to 60 convicted drivers participating in a research program conducted by the University of Southern California in Santa Monica. Over 60% of these drivers were diagnosed as problem drinkers. Useful comments were obtained from the interviewers in both of these field trials of the manual. The manual was further revised in format to better meet the operational needs of the users. Further field testing and validation are needed to ascertain the continuing effectiveness of the procedures incorporated in the manual.

17. Key Words	18. Distribution Statement
problem drinker diagnosis court procedures drinking driver	unlimited

19. Security Classif.(of this report)	20. Security Classif.(of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	32	

ACKNOWLEDGMENTS

This research program was carried out by staff members of the Human Factors and Systems Analysis Departments at the Highway Safety Research Institute.

The program was under the joint direction of Dr. R. G. Mortimer, Human Factors, and L. D. Filkins, Systems Analysis.

Dr. J. S. Lower was responsible for the scoring and statistical analysis of the data from the field tests of the interview and questionnaire, and for preparation of this report.

Mrs. Margaret Kerlan was responsible for revising the original manual and dividing it into its present three volumes.

Joel Epstein made the original contacts with the alcohol traffic safety program county coordinators to secure their cooperation in the field tests and distributed the materials to them.

Project secretarial services and typing of the manuscript were carried out by Mrs. Marion Damberg with the assistance of Miss Sharon Nichols.

We particularly wish to acknowledge the review of earlier versions of parts of this material provided by the following authorities:

Robert L. Donigan, Counselor at Law, El Paso, Texas

S. J. Elden, District Judge, Presiding, Fifteenth District Court of the State of Michigan, Ann Arbor

Nathan Rosenberg, Ph.D., Research Psychologist, National Institute of Mental Health, Chevy Chase, Maryland

Frank A. Seixas, M.D., Medical Director, National Council on Alcoholism, New York

Reginald G. Smart, Ph.D., Associate Research Director, Addiction Research Foundation, Toronto

Ernest I. Stewart, Ph.D., Professor and Associate Dean, College of Liberal Arts, Arizona State University, Tempe

Their recommendations were considered carefully and generally incorporated. Endorsement by these authorities is not implied and the final responsibility for the present material rests with the authors.

Our thanks are also due to John McConnell, Coordinator, Michigan Department of Public Health, Alcohol Highway Safety Project, and to the coordinators of the nine county programs for their invaluable assistance in field testing the questionnaire and interview. The county coordinators are: David Jeffes, Genesee County; Jon W. Wood, Ingham County; John Willson, Kalamazoo County; John Norder, Kent County; Fred Sundling, Macomb County; Ronald Collins, Marquette County; David Parks, Muskegon County; Stephen Thomas, Oakland County; and Robert Granfeldt, Wayne County.

CONTENTS

FIGURES

TABLES

INTRODUCTION

OBJECTIVES

The objectives of this research have been discussed in detail in the Interim Report of this study (Mortimer, et al., 1971) and will be briefly summarized here.

Because of the extensive evidence that alcohol-related crashes are largely caused by problem drinkers, it is essential to devise efficient methods of identifying the problem drinker so that appropriate countermeasures may be instituted. The objectives of this research were to develop such techniques. Ideally, the techniques should be simple, quick, and inexpensive to administer; require minimal professional skills; allow objective scoring and interpretation; and permit highly valid discrimination between problem drinkers and nonproblem drinkers.

A paper-and-pencil questionnaire and a structured interview were developed. Both were designed to be administered and scored by relatively untrained persons in a court setting. These procedures yield a score which may be used in determining whether the offender has a drinking problem and what therapeutic or other countermeasures should be suggested to deal with this problem.

The research conducted in connection with this project was divided into two phases. Phase I included reviewing the appropriate literature and developing a preliminary version of the instruments. A preliminary version of a manual was prepared, consisting of these instruments, directions for administering them, and appropriate background material.

Phase II included submitting the preliminary version of the manual to a panel of experts for evaluation. The manual was then revised and its effectiveness and practicability assessed by field testing with offenders referred by the courts.

SUMMARY OF WORK COMPLETED IN PHASE I

A detailed description of tasks completed in Phase I may be found in the Interim Report of this project (Mortimer, et al., 1971). A summary description of those tasks is given below to provide continuity for the work conducted in Phase II.

LITERATURE REVIEW

An earlier literature review (HSRI, 1969) was updated by searching the more recent sources. Among the topics researched were: previously recorded historical data; medical signs which would be indicative of early stages of alcoholism; and self-report information.

PREVIOUSLY RECORDED HISTORY. This section deals with the predictive capability of information obtainable from records of public and other agencies. It is divided into several sections as follows:

BAC and Drinking-Driving History. A comparison of the blood alcohol concentrations (BAC) of drivers arrested for alcohol-related offenses, with those of control populations consisting of randomly selected drivers or of persons found in social drinking situations, suggests that the high BAC's commonly found in offenders are rarely found in the general drinking population.

High BAC in Relation to Alcohol Abuse. The literature regarding the prevalence of high BAC's in both chronic problem drinkers and other persons indicates that the higher BAC's are much more commonly found in the chronic problem-drinker population.

Alcoholism and Past Driving History. This literature indicates a much higher incidence of crashes and driving violations among alcoholics than among the general population.

Past Social Adjustment of DUIL Offenders. The literature surveyed in this area indicates that DUIL offenders tend to have longer records of past criminal activity and other maladaptive behavior, as measured by past contacts with legal, social, rehabilitative, and other agencies than do members of the general population.

Record Acquisition Accuracy and Interpretation. Past events indicative of problem drinking are underreported in official and other records. The literature cites a variety of causes, including the reluctance of problem drinkers to consent to BAC testing, reluctance of professionals to stigmatize a client, poor record-keeping practices, and similar factors.

MEDICAL SYMPTOMS OF ALCOHOLISM. The review of the literature in this area revealed that currently there are no medical tests to determine the presence of a drinking problem which are likely to be useful in the court setting. However, a number of medical indicators which can be elicited by a face-to-face interview appear to be of potential use. These include generally poor health with multiple vague complaints as well as a past history of certain diseases such as ulcers, gastritis, pancreatitis, etc. Other indicators are frequent use of tranquilizers, barbiturates, and certain other drugs; withdrawal symptoms such as hand tremor; and history of frequent traumatic injuries.

SELF-REPORT INFORMATION. This information can be obtained through psychological tests, questionnaires or surveys, and interviews. Subject matter covered by these techniques includes personal history, personality, and drinking patterns.

Psychological Tests. A number of scales derived from the Minnesota Multiphasic Personality Inventory (MMPI) have been used in attempts to diagnose problem drinking. Various other measures, such as those of sex temperament, time perspective, etc., have also been used, as well as tests which overtly assess drinking behavior. Many of these measures were found to discriminate between alcoholics and nonalcoholics.

Questionnaires and Surveys. Questionnaire and survey research has attempted to study the drinking patterns of the problem drinker, the development of problem-drinking behavior over a period of time, and related subjects. In this category is the work of Jellinek (1952), whose description of the stages of alcoholism is widely accepted. Cisin and Cahalan (1966), Cahalan and Cisin (1968), and Cahalan (1970) conducted surveys

which furnish a wealth of baseline data on the drinking behavior of the American population.

Interview Studies. Interview techniques have been used in a variety of settings in attempts to explore the underlying dynamics and background factors in the problem drinker. The results of such studies are diverse in terms of the specific types of variables employed and the degree of precision embodied in the findings.

QUESTIONNAIRE AND INTERVIEW DEVELOPMENT

CRITERIA. The questionnaire was developed according to several criteria. It was necessary that the questionnaire be standardized and objective so that it could be used in a variety of testing situations and would yield unambiguous results. Because of the limitations of some of the court settings in which it is to be used, it also had to be inexpensive to administer, require only minimal professional skills of the examiner, be suitable for individual or group administration, require minimal time, be readily comprehensible by the testee, and be easily scored. In addition to the above requirements, the questions should be subtle enough to discourage deliberate faking, and should, for the most part, avoid direct reference to drinking behavior.

These requirements led to the construction of a self-administered written questionnaire using mainly true-false items. Only nine of the 58 items mention drinking, and these are concentrated near the end of the questionnaire.

The interview was designed to serve somewhat broader purposes. Like the questionnaire, it was designed to be objectively scorable and as brief as possible. A structured format was dictated by the requirement of objectivity and the need for uniformity of procedure in different settings. At the same time a greater flexibility was desired to help establish rapport between the interviewer and interviewee and to permit more detailed exploration of areas which the interviewer found promising. The interview was also designed to incorporate material which, while not contributing to the score, would be of use in assessing the

offender's overall situation and in suggesting sentencing or therapeutic measures. Thus, while many of the items are of the yes-no or numerical response variety, others permit more open-ended responses.

PROCEDURE.

Initial Item Pools. The items for this questionnaire were selected from an original pool of 135 items whose sources are described in the Interim Report. These items were taken mainly from the questionnaire developed by Mortimer and Lower (1970). The project staff developed the interview items, using as a basis the various background and demographic factors which the literature review indicated as possible predictors of problem drinking.

Administration of the Protocol. A total of 192 known alcoholics and 297 control subjects (presumed to be nonproblem drinkers) were tested. The alcoholics were obtained from several alcoholic treatment hospitals, outpatient alcoholism treatment centers, and alcoholic units of penal institutions. The control subjects were obtained from local religious organizations, the local fire department, University of Michigan students and faculty, and job applicants at a local employment center. Complete details on the composition of the groups are presented in the Interim Report.

The preliminary versions of the questionnaire and interview were administered to the various alcoholic and control groups. Administration to the control groups was done at various locations, usually at the institution from which the group was drawn. Interviews were conducted by project staff members. Administration to the alcoholic groups was done at the alcoholic treatment institution involved, in some cases by the project staff and in other cases by members of the institutional staff.

All of the control subjects, and most of the alcoholic subjects, volunteered to take part in the program. The control subjects were paid a $5.00 fee.

During administration each subject was given the option of

indicating that a given item was not applicable to him or that a given item was objectionable to him for some reason. Such responses were coded and keypunched, but in the item analysis such cases of missing data, not applicable items, or refusals to answer were not used. Refusals to answer were infrequent.

Validation Analyses. The alcoholic and control subjects were randomly assigned to two subgroups, and the responses of each subgroup to the questionnaire and interview items were analyzed separately. A scoring key for each subgroup was constructed, using only those items which significantly discriminated between the alcoholic and control subjects.

Double cross-validation (Guilford, 1954) was then performed. The scoring key derived from each subgroup was used to score the responses of the opposite subgroup. The scores obtained in this fashion were then analyzed to determine the level of discrimination of the scale. Items found to be significantly discriminating in both subgroups were retained to form final scales.

Two scales, one of which contained items that appeared to form a suppressor variable, were developed for the questionnaire. One scale was developed for the interview. Scale weightings were determined by multiple regression analysis and were used to obtain for each respondent a total score comprised of the questionnaire score and interview score.

The responses of the entire sample were then rescored using the final keys based upon the common items, and using the weightings previously derived. Means and standard deviations for the three scores are summarized in Table I. These means and standard deviations were also computed separately for various age and sex groupings and exhibited an encouraging degree of stability across subgroups.

The point-biserial correlation coefficients between the score and criterion group membership, which indicate the concurrent validity of the tests, are 0.85 for the questionnaire, 0.91 for the interview, and 0.92 for the total score. The distributions

TABLE I. MEANS ($\bar{X}$) AND STANDARD DEVIATIONS (SD) FOR QUESTIONNAIRE, INTERVIEW, AND TOTAL SCORES OF VALIDATION GROUPS

A. Questionnaire Scores

	Alcoholic			Control		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
All Subjects	192	30.70	8.37	297	7.00	6.34
Males	173	30.87	8.35	159	8.36	6.87
Females	19	29.21	8.63	138	5.44	5.29

B. Interview Scores

	Alcoholic			Control		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
All Subjects	192	118.12	27.23	297	19.45	15.93
Males	173	118.36	28.16	159	22.04	17.05
Females	19	116.00	16.87	138	16.46	14.01

C. Total Scores

	Alcoholic			Control		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD
All Subjects	192	148.83	31.65	297	26.45	19.91
Males	173	149.23	32.54	159	30.40	21.67
Females	19	145.21	22.29	138	21.91	16.63

of the total scores for controls and alcoholics are shown in Figure 1. The small overlap between the scores of the two groups indicates good discrimination.

Figure 2 shows the discriminative ability of the total scores. It is possible to identify about 75% of the alcoholics with none of the controls misclassified. If a false positive rate of about 1% is accepted then about 91% of the alcoholics would be identified. All of the alcoholics would be identified if a false positive rate of 7% were acceptable.

The following corrected split-half reliability coefficients were found by using the Spearman-Brown prophecy formula: questionnaire scale-1, 0.95; questionnaire scale-2, 0.94; interview, 0.97; and total score, 0.98.

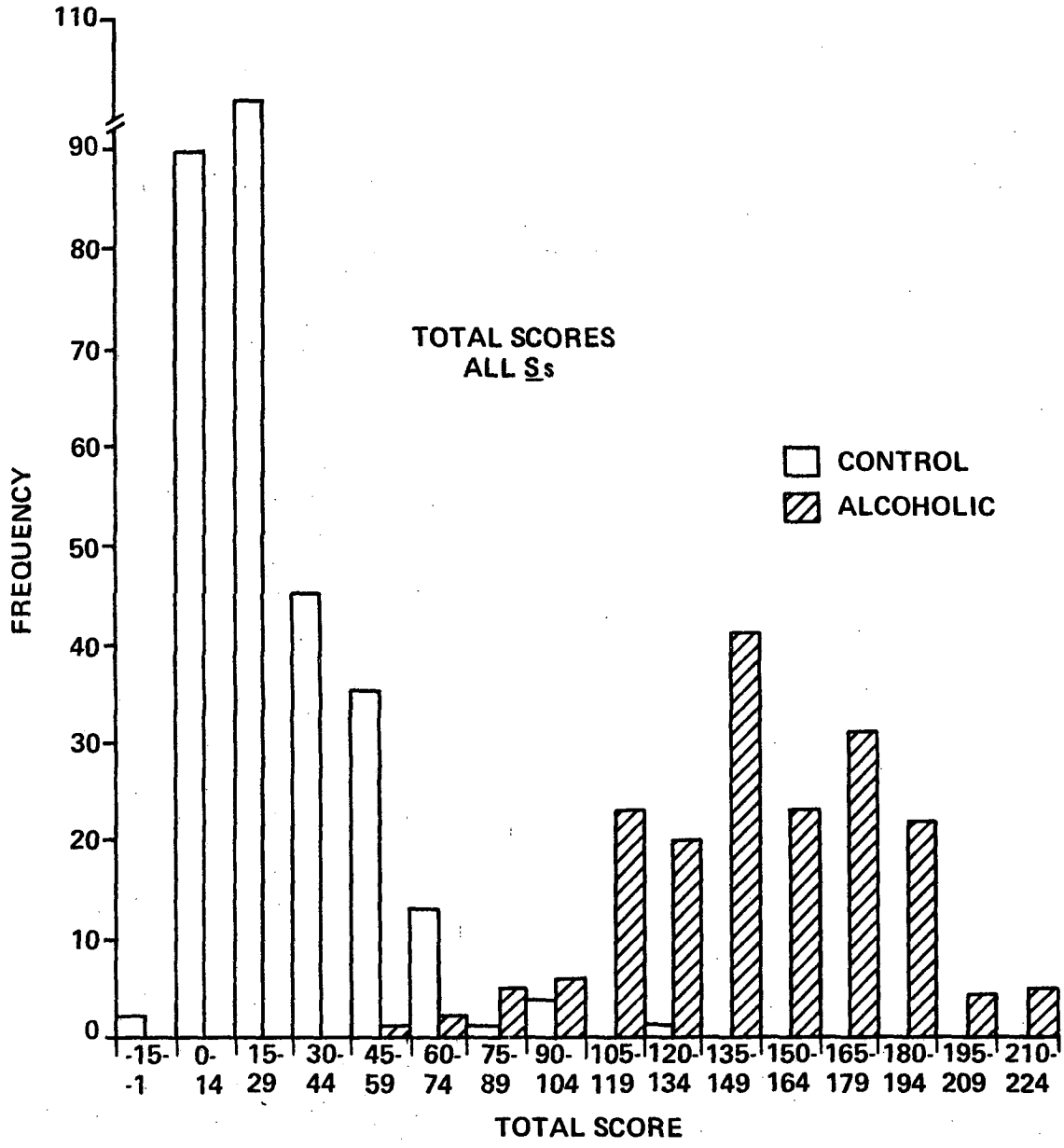

FIGURE 1. DISTRIBUTION OF TOTAL SCORES (QUESTIONNAIRE AND INTERVIEW) FOR CONTROL AND ALCOHOLIC SUBJECTS (Ss) IN VALIDATION STUDY.

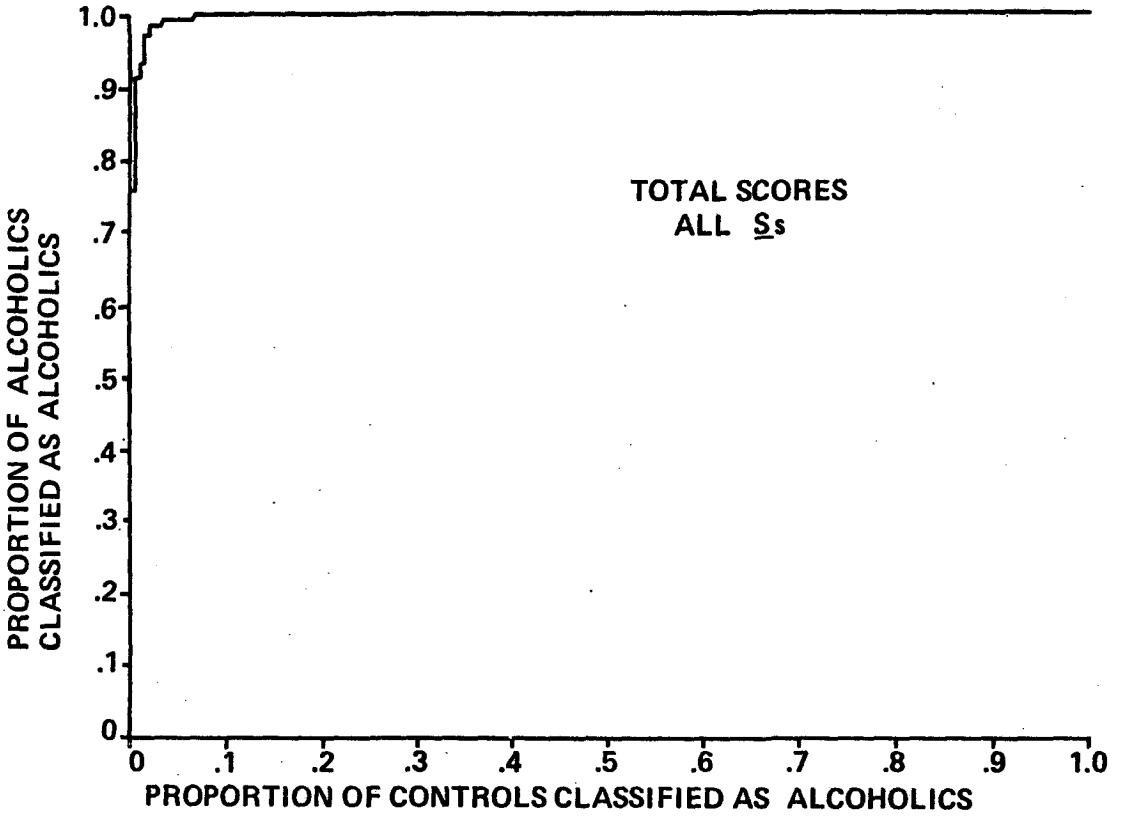

FIGURE 2. DISCRIMINATION OF TOTAL SCORES (QUESTIONNAIRE AND INTERVIEW) BETWEEN CONTROL AND ALCOHOLIC SUBJECTS (Ss) IN VALIDATION STUDY.

(The graph shows the proportion of alcoholics correctly identified as a function of the proportion of controls misclassified as alcoholics.)

Diagnostic Cutoff Scores. Cutoff scores were recommended to allow an individual to be classified in one of three categories: (1) problem drinking; (2) presumptive problem drinking; and (3) nonproblem drinking. A total score of 85 or above was considered positive evidence that the individual has a severe drinking problem. Based on the data obtained it is expected that more than 98.5% of alcoholics, but less than 1.5% of controls, will

score in this range. A total score between 60 and 84 inclusive is regarded as highly presumptive evidence of a drinking problem. No more than 6% of controls are expected to score in this range, while only about 0.5% of alcoholics are expected to score below 60. Persons scoring in this range particularly should be evaluated further on the basis of other data such as driving record, BAC, previous arrests, etc. Such supporting evidence is also important with younger offenders, for whom the protocol discriminates less sharply than for older persons. A person scoring less than 60 should ordinarily not be considered a problem drinker in the absence of strong evidence to the contrary.

Analysis of Driving Records. The driving records for many of the subjects were obtained with the cooperation of the Michigan Department of State. About 97% of the records for the control subjects, but only 31% of the records for the alcoholic subjects, were available, because many of the alcoholics were tested in other states or had no driver's license, and some of the treatment agencies involved wanted their clients to remain anonymous.

It was found that the alcoholics had significantly greater incidence of all the listed infractions (Table II) than did the controls.

Traffic Court Pilot Study. The test procedures developed in this project were used in a preliminary study in a local traffic court. Eleven persons were referred to us by the court. Eight had been charged with DUIL (Driving Under the Influence of Liquor)*, one with driving while visibly impaired (a lesser included offense in Michigan) and two with D & D (Drunk and Disorderly behavior). Six were subsequently convicted of DUIL, three of driving while visibly impaired, and two of D & D. The questionnaire and interview were administered to these persons by a research staff member.

---

*The Michigan Vehicle Code establishes two offenses involving drinking and driving. DUIL (Driving Under the Influence of Liquor) is the more serious and is equivalent to DWI (Driving While Intoxicated) in most other jurisdictions. A lesser included offense generally referred to as "driving while visibly impaired" is defined by a lower presumptive BAC and carries lesser penalties on conviction.

TABLE II. PERCENT OF ALCOHOLICS AND CONTROLS HAVING ONE OR MORE OF THE INDICATED EVENTS ON THEIR DRIVING RECORDS

	Alcoholics (N=60) [a]	Controls (N=288) [a]	Chi-Square $P \leq 0.01$
DUIL/DWI	34	0	✓
Reckless Driving	34	1	✓
Speeding	48	27	✓
No License	10	2	✓
Driving Without License	13	1	✓
Driving License Suspended	10	0	✓
Driving License Denied	0	0	NS
Driving License Revoked	5	0	✓
Number of Accidents	63	18	✓
Number of Arrests	83	45	✓

[a] Shows the number for whom driving records were retrievable.

Five of these subjects scored above 85 and were therefore diagnosed as problem drinkers; one person scored 62 and was considered a presumptive problem drinker; and the remaining five scored less than 60 and were considered nonproblem drinkers. The driving records of the problem drinker group had more previous events in nearly every category, particularly accidents and speeding violations, than did those of the nonproblem drinker group. The one person who scored in the presumptive problem-drinker category was reclassified as a problem drinker after further evidence was examined and it was found that he had several violations and accidents and a BAC of 0.26% at arrest.

DEVELOPMENT OF THE MANUAL

After cross-validation of the interview and questionnaire was completed, the items used to form the final scoring key in the validation study were used as the nucleus of a revised questionnaire and interview. Some additional items were included because of their utility in delineating the defendant's problem areas to the counselor so that appropriate therapeutic and other measures could be considered. A preliminary manual containing the questionnaire and interview, directions for their administration, and general background information on the problem drinker, was prepared.

A panel, consisting of six authorities on various phases of alcohol problems or of the drinking-driver problem, was selected and the assistance of its members obtained. Copies of the draft manual were sent to the members of the panel for their examination and recommendations.

WORK COMPLETED DURING PHASE II

OBJECTIVES

The work done in Phase II was designed to put the materials generated in Phase I into usable form and to obtain estimates of their effectiveness.

REVIEW BY EXPERT PANEL

The preliminary version of the manual prepared in Phase I was reviewed by members of the panel of experts. These members were as follows:

Robert L. Donigan, Counselor at Law, El Paso

S.J. Elden, District Judge, Presiding, Fifteenth District Court of the State of Michigan, Ann Arbor

Nathan Rosenberg, Ph.D., Research Psychologist, National Institute of Mental Health, Chevy Chase

Frank A. Seixas, M.D., Medical Director, National Council on Alcoholism, New York

Reginald G. Smart, Ph.D., Associate Research Director, Addiction Research Foundation, Toronto

Ernest I. Stewart, Ph.D., Professor and Associate Dean, College of Liberal Arts, Arizona State University, Tempe

The reactions of the panel were generally favorable, but a number of specific criticisms and recommendations were made.

One of the principal topics of concern was that of simplicity of language. Several panel members felt that the preliminary version of the manual contained too much professional jargon and that the language was too complex.

Several panel members felt that the manual should be more of a "cookbook" or "how-to-do-it" type of document. They felt that background and theoretical material would be better reserved for a companion volume.

Concern was voiced about the time requirement for conducting the interviews, the lack of qualification requirements for interviewers, and general issues of suitability for use in smaller courts where services generally found in the larger courts, such as probation departments and presentence investigators, are not available.

Several panel members felt that the questions were too transparent, and that when the instruments were used in a court setting faking a good response would be a much more serious problem than with the validation samples, in which neither alcoholics nor controls were likely to have had reasons to conceal information about themselves. However, opinions differed on this point, with some feeling that the questions were commendably free of transparency.

In addition, members of the panel were helpful in pointing out specific factual errors, inappropriate language, and other difficulties in various places in the manual.

REVISION OF THE MANUAL

Upon receipt of the panel's comments, the manual was revised. The principal change was that much of the general and background information about drinking drivers and problem drinkers was segregated in a volume separate from the material directly concerning the administration of the questionnaire and interview. Thus, the final output consists of three separate volumes: Volume I is the manual (Kerlan, et al., 1971); Volume II, a collection of supplementary readings (Mudge, et al., 1971); and Volume III, the scoring keys (Lower, et al., 1971).

Most of the other suggestions made by the expert panel, such as changes in wording and general simplification of language, were also incorporated.

Several forms to be used along with the questionnaire and interview were also developed. These are found in Appendices C, D, and E of the manual (Volume I) and consist of the following:

1. A "questionnaire and interview summary sheet." This contains the page-by-page scoring of the questionnaire and interview and is used in the calculation of the overall scores. It also has provision for indicating to the counselor some problem areas in the defendant's life which may be inferred from specific questions or groups of questions on the questionnaire and interview. These particular questions are concerned with the general area of mental health and also such topics as marital difficulties, work difficulties, poor driving history, poor drinking controls,

physical health, financial difficulties, etc.

2. A "BAC, driver and criminal records tally sheet." This provides data on the blood alcohol test given at the time of arrest and includes provision for recording those cases in which the individual was not tested or refused the test. The following variables from the individual's driving record are asked for: the total number of convictions for DUIL and for impaired and reckless driving (along with the years in which these took place and the BAC's where applicable); the total number of moving violations, accidents, and alcohol-related accidents; and the presence of a history of suspended, revoked, restricted, or denied license. This form also asks for the following items from the individual's criminal record: the number of previous alcohol-related nondriving arrests; the number of previous nonalcohol-related arrests; and the total of the previous two categories.

3. A "treatment evaluation sheet" lists several possible types of actions which may be needed, e.g., further diagnosis, alcoholism treatment, alcohol education, mental health care, family counseling. The counselor may check those items which are needed and space is provided for listing the specific treatment agency which the counselor feels is best qualified to handle each of these needs.

FIELD TESTS OF REVISED MANUAL

The principal field testing of the instruments was done with the assistance of several alcohol traffic safety programs in Michigan. At the time of the field test there were nine such programs in operation, all of them established between January and May of 1971. These programs are operated under the direction of county coordinators and work in conjunction with traffic courts within a particular county, who refer persons convicted of DUIL to the program. All nine of these county coordinators were approached and asked to participate in the field test. However, response varied and returns were obtained from only the following five programs:

1. Genesee County (Flint)

2. Ingham County (Lansing)
3. Kalamazoo County (Kalamazoo)
4. Macomb County (Northern Detroit Suburbs)
5. Wayne County (Detroit)

The program directors were provided with copies of the manual, along with a supply of questionnaire and interview forms, questionnaire and interview summary sheets, and BAC, driver and criminal record tally sheets. The personnel of the programs were asked to perform their usual intake diagnosis on each case sent to them by the courts during the field test, and then administer the HSRI questionnaire and interview to the individual and to complete the BAC, driver and criminal record tally sheet. The personnel were also asked to fill out an additional "case information sheet" for each individual. This sheet, found in Appendix A of this report, contains several items of information important to the field test:

(1) Whether the method used by the intake interviewer for making the initial diagnosis was the same as that customarily used by the particular program
(2) The time required to make this diagnosis
(3) The number of persons involved in the diagnosis
(4) The diagnosis itself, in terms of three categories which correspond to the score ranges on the HSRI questionnaire and interview (problem drinker, presumptive problem drinker, nonproblem drinker)
(5) The circumstances surrounding the interview situation (e.g., diagnosis preceding sentence, condition of probation)
(6) The time required to complete the questionnaire and the time required to complete the interview
(7) Whether the questionnaire and interview were administered by the same person
(8) The title of the person who administered the program's usual diagnostic procedure

The completed questionnaire and interview forms, along with

the other forms mentioned above, were forwarded to HSRI for scoring by the project staff. A total of 69 cases was obtained from the five programs in this phase of the testing. These represent the entire case load involved in alcohol-related driving offenses during the period of this test.

The diagnostic methods of the five programs involved are briefly summarized below.

1. Genesee County. This program makes its diagnoses on the basis of an unstructured interview given by one of three counselors. All of these counselors are experienced in dealing with alcoholics; two of them are recovered alcoholics and one is a former minister. Each counselor makes his own diagnosis according to criteria provided by the director of the program, who considers alcoholism to be an emotional illness and in general emphasizes the learned component of the alcoholic behavior pattern. His orientation also relies fairly heavily on the Jellinek description of the stages of alcoholism.

2. Ingham County. The diagnoses here are made by the coordinator of the program, in a semi-structured interview situation. This diagnosis is based upon various criteria, including signs of uncontrolled drinking, poor driving history and criminal record, BAC over 0.25% at the time of arrest, hospital records, work history, marital history, and similar items as reported by the client; the client's report of his behavior when he is drunk and of the amount he usually drinks; and physical symptoms and other signs such as burned fingers and tremors.

3. Kalamazoo County. Diagnoses in this program are performed by the intake interviewer, who is usually a social worker holding the M.S.W. degree. When the patient is hospitalized this function is performed by his primary therapist. The technique is a loosely structured interview which specifies a fairly large and detailed number of areas of the individual's life history and adjustment to be explored, but does not indicate specific questions to be asked in most cases.

4. Macomb County. In this program intake interviews and

diagnoses are performed by two interviewers. One is a former teacher and welfare worker; the other is an interviewer experienced in working with alcoholics, who was formerly the chief interviewer for the Council on Alcoholism in a neighboring county. These diagnoses are performed by means of an unstructured interview and the interviewer formulates his own criteria for diagnosis. Driving and criminal records are used if they are available; however, frequently they are unavailable.

5. Wayne County. Intake interviewing and diagnosis in this program are done by the coordinator of the program, who is a former clergyman with experience in general counseling and drug problems. These diagnoses are made on the basis of an unstructured interview.

RESULTS OF FIELD TEST

Sixty-nine protocols were returned by the five program directors. In nearly all cases, the diagnosis was made by the methods usually used by the program and was performed by the same person who administered the HSRI questionnaire and interview. The times involved in administration of the questionnaire and interview were appreciably longer than those encountered in the initial validation study. The mean time of administration for the questionnaire was 20 minutes with a standard deviation of 14 minutes, and the mean was 34 and the standard deviation 16 for the interview. During the initial validation study the time of administration was not recorded, but the modal times were approximately 15 minutes for the questionnaire (which was considerably longer than the current version) and 20 minutes for the interview. These results may be attributable to the difference between the populations used in the initial validation study and those encountered in the field test. It may also be attributable to the different orientation and procedures of the interviewers, i.e., it is likely that experienced counselors who are accustomed to interviewing alcoholics in an unstructured situation may explore individual responses in more detail than did the members of the project staff during the validation study.

Of the 69 persons for whom protocols were received, 32 were diagnosed as problem drinkers, 13 as presumptive problem drinkers, and 24 as nonproblem drinkers. The descriptive statistics for the scores are summarized in Table III.

TABLE III. MEANS, STANDARD DEVIATIONS, AND INTER-CORRELATIONS FOR QUESTIONNAIRE AND INTERVIEW SCORES OF SUBJECTS USED IN FIELD TEST

	Score				
	Questionnaire		Interview		
Program	Mean	SD	Mean	SD	r[a]
Lansing	19.50	12.60	73.40	39.95	.45
Macomb County	29.38	9.55	75.00	26.36	.70
Detroit	17.23	6.89	52.18	28.41	.42
Flint	21.95	9.54	74.18	36.83	.71
Kalamazoo	14.50	12.44	44.67	21.96	.14
Totals	20.39	10.10	64.18	34.63	.59

[a] Correlation between questionnaire and interview.

The diagnoses made by the programs were available for 41 of the 69 cases. Twenty-four of these were diagnosed as problem drinkers, 10 as presumptive problem drinkers, and 7 as nonproblem drinkers. The correlation between the diagnosis originally made by the county program and the total score on the HSRI questionnaire and interview was calculated by assigning a numerical score of three to an original diagnosis of problem drinker, two for presumptive problem drinker, and one for nonproblem drinker. This coefficient was 0.75, indicating substantial agreement between the original diagnosis and the obtained score as measures of severity of problem drinking.

The agreement in terms of assignment of diagnostic categories between the original and HSRI diagnoses is shown in Table IV. Of the 41 cases for which the original diagnosis was available, the HSRI diagnosis concurred in 25 cases. When the diagnoses were

TABLE IV. RELATIONSHIPS BETWEEN DIAGNOSES MADE BY COOPERATING PROGRAMS AND DIAGNOSES MADE BY HSRI QUESTIONNAIRE AND INTERVIEW

Program	HSRI Diagnosis[a]	Original Diagnosis[a] NPD	PPD	PD	NA	Total
Lansing	NPD		1	1		2
	PPD	1				1
	PD		1	5		6
	Total	1	2	6		9
Macomb County	NPD		1			1
	PPD	1				1
	PD			6		6
	Total	1	1	6		8
Detroit	NPD				11	11
	PPD				5	5
	PD		1		5	6
	Total		1		21	22
Flint	NPD	2	2	1	1	6
	PPD		1	2		3
	PD	1	3	9		13
	Total	3	6	12	1	22
Kalamazoo	NPD	2			2	4
	PPD				3	3
	PD				1	1
	Total	2			6	8
Total	NPD	4	4	2	14	24
	PPD	2	1	2	8	13
	PD	1	5	20	6	32
	Total	7	10	24	28	69

[a] NPD=nonproblem drinker
PPD=presumptive problem drinker
PD =problem drinker
NA =not available

dichotomized by combining the problem drinker and presumptive problem drinker categories there was agreement in 32 cases.

Of the 9 cases in which there was disagreement, the HSRI procedures* diagnosed 6 as nonproblem drinkers while the programs considered them problem drinkers or presumptive problem drinkers; 3 were diagnosed as presumptive or definite problem drinkers by the HSRI procedures and as nonproblem drinkers by the programs. Overall, this indicates that the cutoff scores which have been chosen for the HSRI questionnaire are probably appropriate in that they reflect current diagnostic standards in programs of the type used in this field test; that is, they are neither substantially more nor substantially less stringent.

REACTIONS TO INSTRUMENTS BY FIELD TEST PERSONNEL

Opinions of the personnel involved in field testing the questionnaire and interview varied as to the quality and suitability of these instruments. Response to the questionnaire was generally favorable, but a number of reservations were expressed about the interview.

In several cases it was felt that the interview was too long. This generated resistance on the part of the client, in addition to increasing the workload of the program staff. Also, one program director mentioned that the State of Michigan requires his personnel to fill out a form, furnished by the State, for each client. The information contained on this form duplicates much of that in the HSRI interview. Needless to say, this duplication of information created some resistance on the part of the staff. Another voiced criticism of the interview was that it possibly generated client resistance by inquiring into emotionally sensitive problem areas too directly and too rapidly. Some personnel felt that the structure of the interview was too rigid and that this created difficulties, particularly when the client tended to ramble. Some interviewers felt that asking the questions verbatim from the form was very difficult to fit into the normal

---

*It should be noted that the HSRI diagnoses were based only on the total scores. Those persons scoring in the presumptive problem drinker category would normally be reevaluated using BAC, driving record and, perhaps, criminal record data.

interview situation. Another criticism was that some of the questions called for repetitious responses on the part of the client and also that the multiple choices given for some of the items sometimes created difficulty, either because too many choices were provided or because none of the choices fitted the specific situation at hand, or both.

Of the five programs, one is still using the instruments routinely as part of its intake procedure. Two others expressed interest in further use either on a regular or an experimental basis. The coordinator of a fourth program was uncertain about his plans for future use, apparently because he had not decided whether the procedure was more useful than his current procedure. The coordinator of the fifth program intends to use the questionnaire, but not the interview.

It should be noted that none of the program personnel had access to scoring keys or were familiar with the general method of scoring and making a diagnosis from the questionnaire and interview at the time these opinions were gathered. All have expressed interest in securing sets of scoring keys, and one indicated definite interest in experimenting further with the techniques, contingent upon the program personnel being able to score the forms themselves.

Individual questionnaire and interview scores and overall results of the field test have been returned to all the programs from which forms were received. There has not been sufficient time to obtain further feedback following their receipt of these results.

USES OF THE INSTRUMENTS IN OTHER SETTINGS

UNIVERSITY OF SOUTHERN CALIFORNIA RESEARCH SUBJECTS

The questionnaire and interview were administered to persons convicted of alcohol-related driving offenses who were participants in a related research program at the University of Southern California. The objective of this program was to study the use of counseling and rehabilitative measures other than traditional alcoholism therapy to attempt to change the behavior of the offender.

Fifty-nine persons completed both the questionnaire and interview, while one completed only the interview. Independent diagnoses were not available for these subjects, as the research program in which they were participating was not so structured as to require differentiation of persons with drinking problems from persons without drinking problems.

The mean score on the questionnaire was 18.07, with a standard deviation of 8.69; while the mean score on the interview was 62.13, with a standard deviation of 31.11. The correlation between questionnaire and interview scores was 0.69.

Correlation coefficients were calculated between the respondent's total score on the questionnaire and interview and the total number of arrests and the number of alcohol-related arrests reported in the interview. Official records of driving violations and criminal convictions were not available. The correlation between total score and total arrests was 0.39, and for alcohol-related arrests it was 0.41.

The questionnaire and interview were administered by several graduate students in psychology, who made a number of helpful comments and suggestions about specific items. Their responses to the techniques were generally favorable.

ONGOING FIELD TESTS OF QUESTIONNAIRE AND INTERVIEW

As of the writing of this report, two federally-funded Alcohol Safety Action Programs (ASAP's) are starting to use the forms developed in this project. The two programs are located

in Tampa, Florida, and Indianapolis, Indiana. Conferences have been held between the staff of this project and the staffs of the Florida and Indiana ASAP's. These meetings have had two objectives: to thoroughly familiarize ASAP staff members who will be using the instruments with pertinent information about the philosophy, methodology, and details of administration and scoring; and to obtain useful feedback from these persons to the research staff about the general usability of the instruments and any potential problems in their utilization which may be apparent at this time. As a result of information gained from these contacts, a slight revision of the manual and scoring keys is under way to rectify some problems of mechanics which were uncovered. In addition, the ASAP personnel have agreed to provide the research staff with a continuing flow of information, including the scores of persons to whom the instruments are administered and independent diagnoses made by their staffs, to aid in further evaluation of the instruments.

CASE ID #_____

Appendix A

CASE INFORMATION SHEET DEVELOPED FOR USE BY
MICHIGAN ALCOHOL TRAFFIC SAFETY PROGRAMS

CASE INFORMATION SHEET

(Fill one out for each case handled)

Was your technique for appraising this individual the same as your specified usual diagnostic method? (Response completed on Sheet 1)

Yes___ No___

Time to complete usual diagnosis:_____

Number of persons involved in making this diagnosis:_____

Diagnosis:

Problem Drinker___

Presumptive Problem Drinker___

Nonproblem Drinker___

Circumstances of contact: (check one)

1. Postconviction
2. Diagnosis preceding sentence
3. Condition of probation
4. Other:_____

Time to complete Questionnaire:_____

Interview:_____

Did the same person administer both the Questionnaire and Interview?

Yes___ No___

Titles of person(s) administering the Questionnaire:_____

Interview:_____

Did the same person(s) administer the usual diagnostic procedure that administered the Questionnaire and Interview?

Yes___ No___

REFERENCES

Cahalan, D., Problem Drinkers; A National Survey, Jossey-Bass, Inc., San Francisco, 1970.

Cahalan, D. and Cisin, I.H., "American Drinking Practices: Summary of Findings from a National Probability Sample. I. Extent of Drinking by Population Subgroups," Quarterly Journal of Studies on Alcohol, 29:130-151, 1968.

Cisin, I.H. and Cahalan, D., "A Comparison of Abstainers and Heavy Drinkers in a National Survey," Proceedings, American Psychiatric Association, Annual Meeting, Washington, D.C., 1966.

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

Highway Safety Research Institute, Alcohol Safety: Volume I, Final Report, DOT Contract FH-11-6555, The University of Michigan, Ann Arbor, 1969.

Jellinek, E.M., "Phases of Alcohol Addiction," Quarterly Journal of Studies on Alcohol, 13:673-684, 1952.

Kerlan, M.W., Mortimer, R.G., Mudge, B., and Filkins, L.D., Court Procedures for Identifying Problem Drinkers. Volume 1: Manual, DOT Contract FH-11-7615, Highway Safety Research Institute, The University of Michigan, Ann Arbor, 1971.

Lower, J.S., Mortimer, R.G., and Filkins, L.D., Court Procedures for Identifying Problem Drinkers. Volume 3: Scoring Keys, DOT Contract FH-11-7615, Highway Safety Research Institute, The University of Michigan, Ann Arbor, 1971.

Mortimer, R.G., et al., Development of Court Procedures for Identifying Problem Drinkers. Report on Phase I, DOT Contract FH-11-7615, Highway Safety Research Institute, The University of Michigan, Ann Arbor, 1971.

Mortimer, R.G. and Lower, J.S., "Development of a Questionnaire to Identify the Problem-Drinking Driver," Proceedings, American Association for Automotive Medicine, Annual Meeting, Ann Arbor, 1970.

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. DOT Contract FH-11-7615, Highway Safety Research Institute, The University of Michigan, Ann Arbor, 1971.