PROGRESS REPORT IDENTIFICATION

OCJP-508 (REV. 8-74)

PROJECT TITLE: Orange County (CRA) - COORDINATED CITY AND COUNTY REGIONAL CRIMINALISTICS SYSTEM
PROJECT NUMBER: PF 3141
SUBGRANTEE: COUNTY OF ORANGE SHERIFF-CORONER DEPARTMENT AND MUNICIPAL POLICE DEPARTMENTS
CONTRACT NUMBER: D-30-5
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STATE AGENCY/REGION: REGION T
PROJECT DIRECTOR: BRAD GATES, SHERIFF-CORONER
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REPORT PERIOD: FEB. 1, 1973-FEB. 28, 1974
ADDRESS: SAME
DATE OF REPORT: DECEMBER 5, 1975
SIGNATURE: Brad Gates
BRAD GATES, SHERIFF-CORONER
DATE: 7-17-76
TITLE: SHERIFF-CORONER
REPORT PREPARED BY (NAME): W.J. CADMAN
TITLE (RELATIONSHIP TO PROJECT): CHIEF CRIMINALIST, ASSISTANT PROJECT DIRECTOR

☐ 1ST ☐ 2ND ☐ 3RD ☒ 4TH AND FINAL ☐ OTHER *

FOR PROJECTS THAT HAVE RECEIVED CONTRACT EXTENSIONS

REVIEWERS COMMENTS

This is a complete and well documented final report of the application of grant funds from the period of February '73 - February '75. All subject matter areas which OCJP require to be covered within a progress report are addressed. The Equal Employment Program, as well as the Security and Privacy Provision were not mentioned but it appears that these provisions were not applicable.

It is of particular significance that of those Police Chiefs responding to the evaluation questionnaire the majority were "Highly Satisfied" (Attachment #4). As reported, this project has adequately met all prescribed goals and more than doubled the goal regarding actual cases examined.

In summary, this was a well defined, managed, and fruitful project which has had positive impact upon the Criminal Justice System within Region T.

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REVIEWED AND APPROVED FOR TRANSMITTAL TO OCJP

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The Evaluation of the Grant:
"Coordinated City and County Regional Criminalistics System"

I. Restatement of grant goals

To increase the overall number of cases examined by at least 15%, and to augment the staff. These goals will be achieved by automating the blood-alcohol analysis process and the routine screening of dangerous drugs by a gas chromatograph-mass spectrometer with a dedicated minicomputer. The augmentation of staff was related to the reorganization of the laboratory, to increase the effectiveness of the laboratory as stated in the grant proposal.

II. Summary of Implementation of the grant

The grant year started in February, 1973 and ended in February, 1975. An extension of the grant carried well into 1975. This document provides data on the entire 24 months period and the grant period will be compared to a pre-grant period from February, 1972 through January, 1973.

A. Selection of personnel and reorganization

The first task was to select the new grant personnel consisting of 3 criminalists and 1 typist-clerk II. The selections were made and the individuals hired. (See October, 1973 Progress Report). The laboratory organization was altered to increase the effectiveness of the laboratory as stated in the grant. Two supervising criminalists were selected (the 2 Criminalist III positions). A third Criminalist III was selected and appointed (a non-grant position).

1. Training for Forensic Alcohol Program

The new criminalists received training in chemical methods to isolate and quantitate alcohol in compliance with Title 17 of the California Administrative Code. Each criminalist successfully progressed from Forensic Alcohol Analyst Trainee to Forensic Alcohol Analyst. At the completion of the training period each criminalist was licensed by the State of California Department of Health. They also received training in the interpretation of blood alcohol levels.

To develop this area of expertise, each criminalist participated in a 3 part program: 1) observing actual impaired driving arrests and sobriety tests. The trainees, rode with the California Highway Patrol, 2) observing controlled drinking experiments, 3) observing a controlled drinking and driving demonstration.

2. Training for Forensic Drug Analysis Program

A manual of procedures covering a wide range of forensic drug analyses was developed for training new criminalists in solid dose form drug analysis. The laboratory initiated a program to upgrade its personnel through a series of in-house lectures on new techniques in complex drug analyses and actual training in drug identification in daily operation.

B. Automating Blood Alcohol Analysis Procedure and Routine Screening of Drugs by Gas Chromatograph/Mass Spectrometer

1. Evaluation of instrumentation for semi-automated blood alcohol procedure

During the pre-grant period it was proposed that an existing gas chromatograph and automatic injection system would be adequate for the proposed semi-automation of blood alcohol analysis. An evaluation of this instrument during the grant period established the total inadequacy of this equipment.

It was necessary to evaluate other available systems. This re-evaluation of the total system began in March, 1973. (See April, 1973 and December, 1973 report)

2. Meeting the total goal, i.e. 15% increase in casework

By the end of the first 6 months of the grant, the goal had been attained (actual increase for that period was 19% overall, see Attachment 1). This increase was achieved due to added grant personnel because the automated blood/alcohol system had not yet been accepted by the State of California Department of Health and the GC/MS/DS had not yet been obtained.

3. Equipment selection for semi-automated blood/alcohol analysis procedure

After lengthy and extensive evaluation of equipment from manufacturers, the Hewlett-Packard Semi-Automated GC System was purchased. Only the integrator, mini-computer and teletype printer were purchased from grant funds. Since the manufacturer did not design the semi-automated GC system for blood/alcohol analysis only, it was necessary for the laboratory to develop a chemical procedure. The first chemical procedure was found defective and rejected. This required additional study and research to develop an acceptable method.

4. Method acceptable

Samples (407), previously analyzed by a steam distillation method were analyzed by the revised semi-automated procedure. The results were acceptable. A comparison was then made of over 2100 samples. The samples were analyzed once by the distillation method and twice by the revised semi-automated method. The results were acceptable.

The revised semi-automated procedure was submitted to the State of California, Department of Health (See Attachment 2). The procedure was found to comply and approved under Title 17 (California Administrative Code). This revised method is the primary blood alcohol procedure used by this laboratory. Once the method was approved by the regulatory agency, the laboratory started to catch up on the case backlog. The backlog was caused by the third determination and the processing of each sample during the development of the method. The impact of the backlog catch up effort is reflected on the graph (Attachment 3). The sharp increase of blood alcohol examinations in December, 1974, January 1975, and February, 1975 are clearly shown.

5. Screening of drugs by Gas Chromatograph/Mass Spectrometer

The Hewlett-Packard Gas Chromatograph/Mass Spectrometer and Data System was installed in December, 1974. In initial period of approximately one week was required to train laboratory personnel

and to work out various problems with the System. Through February of 1975, the Gas Chromatograph/Mass Spectrometer was used for 6 solid dose cases and 34 toxicological cases. These consisted of (1) cases involving compounds unidentifiable by alternate techniques, (2) cases where sample size was so small as to preclude positive identification by alternate methods, and (3) case samples analyzed to determine the feasibility of the System to identify especially difficult substances and/or minimize the time required to make the analyses of what by other methods were difficult and time consuming identifications. Five cases were of the type (1) or (2). A considerable time savings was effected in several of the remaining cases. The compounds found in these cases are enumerated in Attachment #7. In addition to case samples, a variety of standard compounds were analyzed for the purposes of building a reference library in the data system.

III. Evaluation

A. External

The Chief Criminalist conducted the telephone survey among the twenty-five chiefs of police in Region T to get an objective evaluation from the user agencies. A questionnaire was designed to guide the telephone survey (Attachment 4). The results of the survey shows the satisfaction among the user agencies and reflects the impact of the grant in the criminal justice system (Attachment 5).

B. Internal

Without the grant, the laboratory would have failed to meet the needs of the Region T Criminal Justice System (See Attachment 6). During the pre-grant year, the laboratory received 13,002 cases. 24% of these cases went unexamined. During the first year of the grant, the laboratory received 15,534 cases, an increase of 19% over the last pre-grant year. Only 15% of the cases were not examined. The overall increase in cases examined was 33%. The 33% increase was over twice the goal of the grant (to increase cases examined by 15%).

During the second year of the grant, the laboratory received 19,800 cases, an unpredicted increase of 52% over the last pre-grant year. The laboratory had anticipated about 17,500 cases. Cases examined increased to 16,923.

This is a 69% increase, more than four times the grant goal of 15%. Another satisfying statistic, is that even the dramatic increase in cases submitted, 85% of them were examined to completion.

Attachment 4 also indicated the increase in blood alcohol casework. As indicated in 1973, the laboratory achieved a 37% increase in cases examined. In 1974 there was a 89% increase over 1973, or a 38% increase over 1973.

The semi-automated system used at this time allows the laboratory to examine all blood or urine samples submitted. The final results for each sample is available to the courts and the defendant within a week of his arrest. Our ultimate goal is to provide this information within 24 hours of the arrest. It is expected that many defendants will be allowed to plead guilty at their arraignment. (Most Region T judges will not accept guilty pleas until the blood level is reported by the regional criminalistics laboratory). The additional guilty pleas will alleviate the need for continuances and reduce the number of 1 to 3 day trials thereby reducing the caseload for the criminal justice system.

FIRST SIX MONTHS PROGRESS

Objective: Provide for at least a 15% increase in case processing abilities.

Total cases worked 1972 February/July (6 months)	5,370
Project Objective: To increase cases examined 15%	6,175
Total cases worked 1973 February/July (6 months)	6,388

6,388 cases is 18.9% above the figure 5,370, or 3.9% ahead of the Project's goal.

CASES COMPLETED February through July	1972	1972 +15% (Proposed Increase)	1973	ACTUAL PERCENTAGE INCREASE OVER 1972
Blood Alcohols	3690	4243	4495	22%
Other Type Cases	1680	1932	1893	12%
Total	5370	6175	6388	18.9%
Submitted Cases February through July	6351		7308	11.5%
Cases Not Examined	981		920	-7.0%

ATTACHMENT 1

I TITLE OF METHOD

A. Forensic Alcohol Analysis by Semiautomated Gas Chromatography

II INTRODUCTION

A. A gas chromatographic method is utilized for the qualitative and quantitative analysis of ethanol and other volatile substances in blood and urine specimens.

B. The method involves the analysis of blood and urine specimens which have been diluted with an aqueous internal standard.

C. The method includes the use of an automatic sampler and a laboratory data system.

III PRINCIPLES OF ANALYSIS

A. The qualitative identification of ethanol is accomplished by the gas chromatographic separation of ethanol from other volatile substances.

B. The ethanol is quantitated using an internal standard.
1. The samples are prepared by quantitative dilution with an aqueous internal standard.

2. The ethanol concentration is calculated by the laboratory data system, based on the relative responses (peak areas) of the ethanol and the internal standard.

IV Reagents

A. Preparation of reagents (% wt/vol).
The numerical value of the percentage is equivalent to the grams of solute per 100 ml of solution. For example, an 0.1% wt/vol solution contains 0.1 g of solute per 100 ml of solution. Unless otherwise indicated, the solvent is deionized water.

B. Internal standard

1. used by data system to quantitate ethanol.

2. for manual preparation: ca. 0.1% wt/vol n-propanol

3. for autodilutor preparation: ca. 0.01% wt/vol n-propanol

C. Ethanol solutions

1. Standard calibration sample

a. provides basis for quantitative calculation of ethanol.

b. 0.1% wt/vol aqueous ethanol or greater.

c. exact value determined by direct oxidimetric analyses.

2. Quality control reference sample.

a. provides for control of system reproducibility.

b. between 0.1% and 0.2% wt/vol aqueous ethanol.

c. the mean value of each lot is determined by 20 replicate analyses at a rate of not more than 2 analyses per day.

3. Linearity check samples

a. provides evidence as to the linearity of the system response; demonstrates proper application of the data system's quantitation algorithm.

IV REAGENTS, Continued

D. Performance check sample

1. Demonstrates lack of interference of other related volatile compounds with qualitative and quantitative identification of ethanol.

2. Approximately 0.1% wt/vol acetone, methanol, acetaldehyde, and isopropanol; approximately 0.15% wt/vol ethanol.

E. Potassium dichromate (Primary standard, Reagent grade), Sulfuric acid, sodium thiosulfate, potassium iodide and starch solution (1%).

1. Ethanol calibration standard determined oxidimetrically.

2. Ethanol linearity check samples determined oxidimetrically.

3. Ethanol solution for performance check sample determined oxidimetrically prior to dilution.

F. Isoterge® Solution. Prepared by diluting one bottle (ca. 60 ml concentrate to one liter with deionized water.

V EQUIPMENT

A. Hewlett Packard Model 5700A Gas Chromatograph

1. Flame ionization detector

2. 6' x 1/8" ID column, 0.4% Carbowax 1500 on Carbopak A

B. Hewlett Packard Model 7671A Automatic Sampler

C. Hewlett Packard Model 7123A Recorder

D. Hewlett Packard Model 3352B Laboratory Data System

1. Hewlett Packard Model 2100A General Purpose Digital Computer

2. Hewlett Packard Model 2752A Teleprinter

3. Hewlett Packard Model 18652A A/D Converter Module

4. Hewlett Packard Model 18651A Digital Transmission Loop Controller

E. Auto Diluter, Fisher Dilumat

1. 50 microliter sample volume

2. 1.5 ml diluent volume

3. Another equivalent dilutor may be used if it is found to be of comparable precision.

F. Hamilton Precision Liquid Dispenser

G. Gilson 1000 microliter Pipetman® with disposable tips.

VI PROCEDURES

A. Preparation of ethanol and related volatile solutions

1. The aqueous ethanol solutions are of known concentrations. Each is determined by an oxidimetric analysis using reagent grade potassium dichromate as primary standard. The reagent grade potassium dichromate is calibrated against NBS potassium dichromate.

   a. Calibration solution: 0.20% wt/vol

   b. Linearity check samples: 0.10% and 0.30% wt/vol

2. Performance check sample
   a. Separate aqueous solutions of approximately 0.5% wt/vol acetaldehyde, acetone, methanol, i-propanol, and approximately 0.75% wt/vol ethanol are prepared.

   b. The exact concentration of the ethanol solution is determined by direct oxidimetric analysis.

   c. The performance check sample is prepared by adding one part by volume of each of the solutions, giving ca. 0.1% wt/vol solution of the related volatiles, and ca. 0.15 wt/vol ethanol.

3. The ethanol calibration solution, linearity check samples, performance check samples, and quality control samples are prepared for analysis in the same manner as the actual urine or blood samples.

B. Instrumentation preparation

1. Preset operating parameters:

   a. gas pressures - N_2 (carrier); 80 psi; nitrogen (injecter) 80 psi; H_2 - 40 psi; air - 20 psi (approximate values)

   b. Gas Chromatograph parameters

      1. These values may vary with column replacement or deterioration; a list of current approved parameters will be posted conspicuously.
      2. Oven temperature: 100°
      3. Detector temperature: 200° C
      4. Injection port temperature: 150° C
      5. Range 10, attenuation 4
      6. Detector: Ignited

VI PROCEDURES, Continued

B. Instrumentation preparation, Continued:

c. Software

1. Automatic Liquid Sampler (ALS) (Channel 4) associated with proper A/D channel (Channel "0" unless otherwise indicated).

2. Proper gas chromatographic method entered into ALS software. (BANPR unless otherwise indicated).

C. Sample Preparation. Either of two alternate methods of dilution may be used by the analyst.

1. Manual preparation

a. ca. 3.0 ml of the 0.1% n-propanol internal standard is dispensed with the Hamilton dispenser into an unused, clean and dry test tube.

b. A clean, dry, unused tip is placed on the Gilson Pipetman®.

c. 1.00 ml of the mixed sample is drawn up in the Pipetman®.

d. The 1.00 ml portion of the sample is then added to the test tube from step "a".

e. The resultant solution is thoroughly mixed.

f. Using a clean, dry, unused tip, 1.00 ml of this solution is drawn up by the Pipetman and added to ca. 7 ml deionized water.

g. This solution is thoroughly mixed, then ca. 2 ml of the solution is added to a clean, dry autosampler vial containing 2 drops of Isoterge® solution.

h. The auto sampler vial is placed into a numbered slot in the automatic liquid sampler (ALS) carousel.

i. An identifier (LR number or sample description) is entered via teletype into the ALS software "name" for the corresponding slot number. (This may not be necessary as the sample entered may be the same as that analyzed in a previous set).

VI PROCEDURES, Continued

C. Sample Preparation

2. Autodiluter Preparation

a. Two drops of a solution of Isoterge® is added to each sample vial to minimize syringe clogging.

b. 50 microliters of the mixed sample is drawn up by the diluter.

c. The 50 microliter sample and 1.5 ml of internal standard are dispensed into a sample vial.

d. The sample vial is placed into a numbered slot in the automatic liquid sampler (ALS) carousel.

e. An identifier (LR number, or sample description) is entered via teletype into the ALS software "name" for the corresponding slot number. (This may not be necessary as the sample entered may be the same as that analyzed in a previous set).

D. Analyses

1. One set consists of up to 36 vials

a. One calibration standard

b. One performance check sample

c. One quality control sample

d. Two linearity check samples

(ca. 0.1% and 0.3% ethanol wt.vol)

e. One blank sample: (Internal standard and deionized water).

f. Three wash vials (1 to 10 aqueous dilution of Isoterge®).

g. Up to twenty-seven (27) samples for analysis.

2. The analysis of the set is initiated by depressing the A/D button.

VI PROCEDURES, Continued

D. Analyses, continued:

3. The system, under control of the data system, performs the following sequence:

a. Using a 10 microliter syringe, the ALS washes with the sample, then injects approximately one microliter into the gas chromatograph.

b. The data system begins the analysis.

c. The sample carousel moves to a predetermined slot containing the wash solution, and rinses the syringe.

d. After a predetermined time, the data system terminates the run and prints out the analysis report, which includes the identifier (ALS software "name") associated with the slot analyzed.

e. If further samples are to be analyzed, the ALS returns to "a".

E. Evaluation of Results

1. The following criteria must be fulfilled for the results of analyses of a given set of samples to be considered valid.

a. The results obtained for the linearity check samples agree as to ethanol concentration to within $\pm$ 0.01% from the oxidimetric value.

b. The results obtained for the performance check sample show separation of the related volatile materials from ethanol.

c. The results obtained for the blank sample is less than 0.01%.

d. The results for the quality control reference sample agrees to within $\pm$ 0.01% of the quality control reference mean value.

2. If any of the above conditions are not fulfilled, the results of the analyses of the set will be considered in error, and the situation will be reported to a Forensic Alcohol Supervisor for suitable remedial action. No results will be considered valid until the above conditions are again fulfilled.

VII CALCULATION

A. Calculations are performed automatically by the laboratory data system according to the following equation:

$$C_{EtOH} = \frac{F_{EtOH}\ A_{EtOH}}{F_{IST}\ A_{IST}} \times R \times \frac{DIL\text{-}FTR\%}{100} \times C_{IST}$$

Where C_{EtOH} = known concentration of Ethanol peak

C_{IST} = known concentration of internal standard

F_{EtOH} = relative response factor of Ethanol peak

A_{EtOH} = raw area of Ethanol peak

F_{IST} = relative response factor of internal standard peak; defined as 1.000

A_{IST} = raw area of internal standard peak

R = (amount of internal standard)/ amount of sample (before adding standard)

DIL-FTR% = Dilution factor

1. R remains constant, regardless of sample analyzed; for the amount of internal standard is always a precise measurement of approximately 1.5 ml and the amount of sample is always a precise and accurate measurement of 0.050 ml.

2. DIL-FTR% remains constant from sample to sample.

3. Since the dilution method is based upon the principle of precision rather than accuracy, the DIL-FTR% is identical for each sample and may thereby be set to unity.

B. The calibration factor $\left(\frac{F_{EtOH}}{F_{IST}}\right)$ compensates for differences in the response of the chromatographic detector to different components of sample.

1. A solution containing the same concentration of ethanol and internal standard would most likely yield gas chromatograph peaks with unequal areas.

2. From the above equation it can be seen that the calibration factor may be determined in the following manner:

$$\text{Calibration factor of ethanol} = \frac{C_{EtOH}\ A_{IST}}{A_{EtOH}} = \frac{F_{EtOH}}{F_{IST}}$$

thereby, the calibration factor of ethanol may be normalized to the internal standard.

3. The exact concentration of the internal standard need not be determined as it is used in the calibration as well as calculation and the numerical value cancels out.

C. Sample Calculation

$F_{EtOH} = 4.7189$

$A_{EtOH} = 4099$

$F_{IST} = 1.000$ (constant)

$A_{IST} = 18508$

$C_{IST} = .200\%$ (Wt/vol) (Constant)

$$C_{EtOH} = \frac{F_{EtOH}\ A_{EtOH}}{F_{IST}\ A_{IST}} \times C_{IST} = \frac{4.7189 \times 4099}{1.000 \times 18508} \times .200 = .209\%$$

D. Urine results are determined by dividing calculated result by 1.3

E. Replicate results (automated gas chromatography and/or Kozelka-Hine) are averaged.
1. Digit in third decimal place is dropped.
2. Result is reported to second decimal place.
3. Results of less than 0.01% in living subjects are reported as negatives (less than 0.02% for post mortem samples).

VIII DISCUSSION

A. The preservative (NaF), anticoagulant ($K_2C_2O_4$) and detergent (Isoterge) do not affect this method of analysis. Five samples that were previously determined to be alcohol free by the distillation method (Kozekla-Hine), were reanalyzed by this method and yielded results less than 0.01%.

B. Analysis of reference sample greater than 0.10% $\pm$ .01%.

1. Reference sample: 0.212% (direct oxidimetric determination).

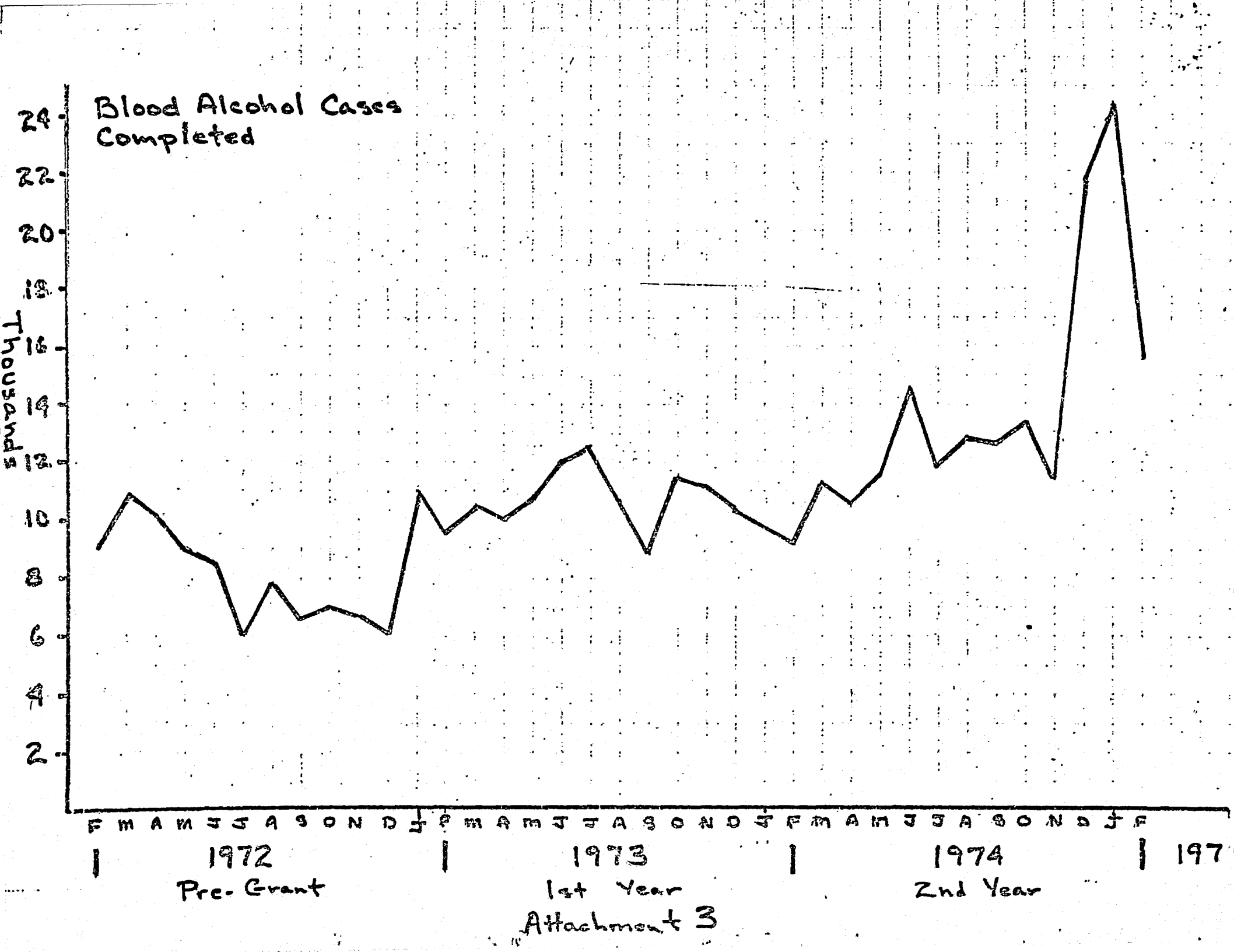
2. Ten separate analyses:
.208; .211; .207; .219; .216; .207; .213; .205; .203; .218

C. Quality control reference sample

1. Twenty replicate analyses, no more than two per day.

2. All analyses within $\pm$ 0.01% of mean value.

3. Values: .158; .160; .158; .162; .160; 161; .160; .161; 160;
.162; .161; .162; .157; .161; .160; .161; .159; 159;
.157; .156
Mean range: 0.160
Range: .156 to .162



Attachment 3

QUESTIONNAIRE FOR EXTERNAL EVALUATION

OF FIRST YEAR GRANT

1. (General comparison after grant period to pre-grant period)
On the basis of your experience, since January 1974, do you think the Crime Laboratory's service, in general, improved?

Highly Satisfied	Satisfied	Fair	Should Improve	Not Satisfied

How do you suggest we improve?:

(B/A)

2. Are you aware that we have been screening blood samples below 0.10% for drugs? Yes _____ No _____
If yes, does routine drug screening of biological samples in drunk driving cases help you in any way?

Very Much	Much	Fair	Not Much	Not Really

Other:

3. Are you satisfied by the turnaround time of blood-alcohol cases?

Highly Satisfied	Satisfied	Fair	Should Improve	Not Satisfied

Other:

4. Have you been aware of any improvement in our turnaround time on major cases, i.e., burglary, arson, homicide, etc.? Yes____ No____

(Drug)

5. Are you satisfied with the solid dose form drug analysis done by this Lab?

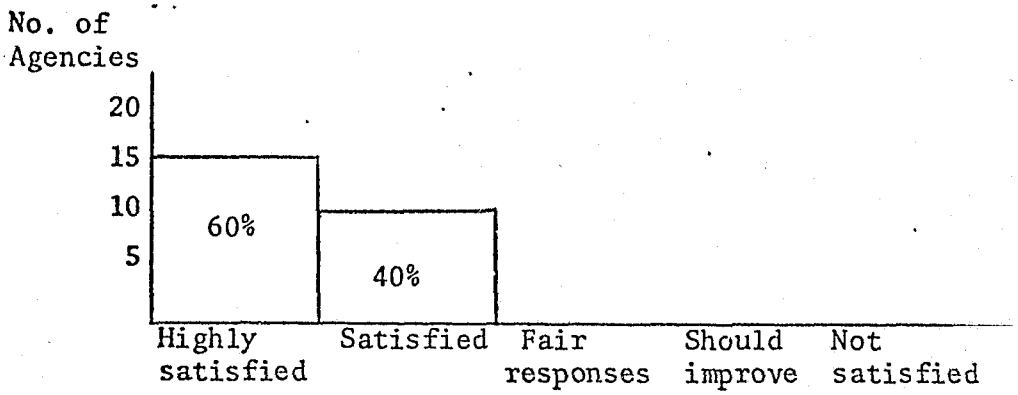
Highly Satisfied	Satisfied	Fair	Should Improve	Not Satisfied

Other:

SUMMARY OF TELEPHONE SURVEY

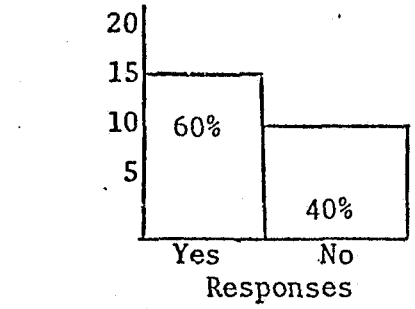
Question 1.

On the basis of your experience, since January 1974, do you think the Crime Laboratory's service, in general, improved?



Question 2.

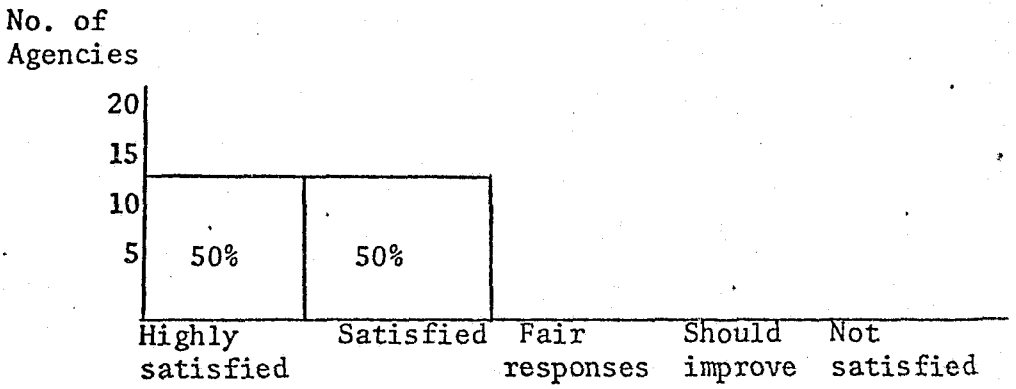
Are you aware that we have been screening blood samples below 0.10% for drugs?



*Note: Out of 90% of Chiefs who expressed highly satisfied in Question 1, were aware of drug screening.

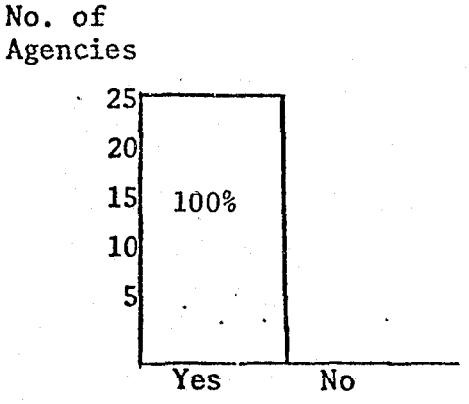
Question 3.

Are you satisfied by the turn-around time of blood-alcohol cases?



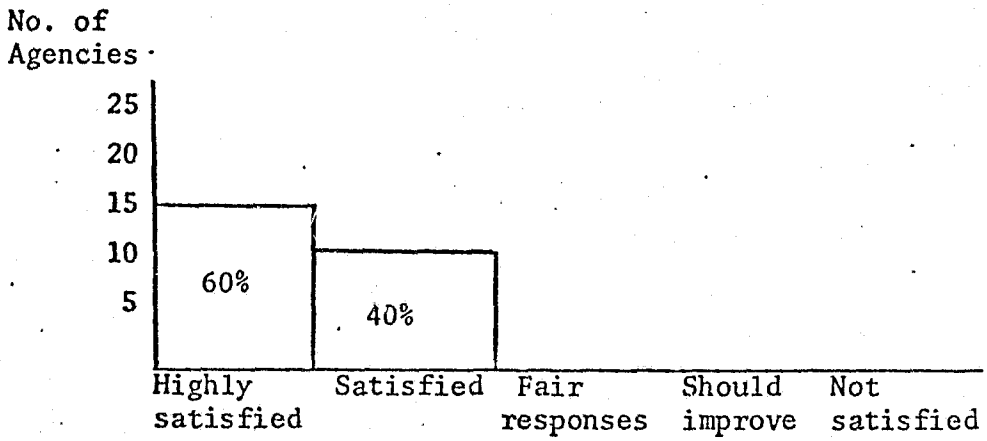
Question 4.

Have you been aware of any improvement in our turnaround time on major cases?



Question 5.

Are you satisfied with the solid dose form drug analysis done by this Lab?



	Pre-Grant 1972	Grant Target	1st year 1973 Actual	Increase over 1972	2nd year 1974 Actual	Increase Over '72	'73
Total Cases Completed	9,961	11,465	13,255	33%	16,923	69%	27%
Blood Alcohols	6,815	7,837	9,351	37%	12,946	89%	38%
Other type Cases	3,156	3,629	3,907	23%	3,977	26%	2%
Total Cases Required	13,002		15,534		19,800		
Increase over Previous year				19%		52%	27%
Percent of Cases Completed	76%		85%		85%		

COMPARISON OF PRE-GRANT YEAR TO FIRST AND SECOND YEAR OF GRANTS

ATTACHMENT 6

COMPOUNDS IDENTIFIED BY THE

GAS CHROMATOGRAPH/MASS SPECTROMETER

PHENCYCLIDINE

AMPHETAMINE

MORPHINE

PROPOXYPHENE

METHAQUALONE

BARBITURATES

BENZODIAZEPINES

POSSIBLE METABOLITES OF METHAQUALONE AND PROPOXYPHENE

PARA-CHLOROBENZENE SULFONAMIDE

ETHCHLORVYNOL

DIPHENYLHYDANTOIN

COCAINE

LINDANE

LSD

EPHEDRINE

CHLORPHENIRAMINE

NOTE: Some of the above listed compounds are not controlled substances.

END