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EFFECTIVENESS & EFFICIENCY
Analytic Study No. I

Richard F. Krenek

OMEC, Inc.
115 South Peters
Norman, Oklahoma 73069

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16. Abstract This report describes the progress and performance of the Oklahoma City Alcohol Safety Action Project (ASAP) during the five-year period 1972 - 1976. The findings of this study include: 1. ASAP enforcement personnel effected 17,187 DUI arrests in Oklahoma City from January, 1972 through December, 1976. 2. ASAP enforcement efficiency as measured in DUI arrests per man-hour increased by a factor of three during the ASAP period covered. 3. Over the five-year period (1972 - 1976) the Oklahoma City Municipal Court disposed of 15, 027 DUI cases with 94.9% resulting in a conviction. 4. Average processing time for DUI offenders (arrest to final disposition) decreased from 129 days in 1971 to 65 days in 1976. 5. Knowledge and attitudes of Oklahoma City drivers toward the impaired drink-ing driver and drinking-driving improved significantly as a result of ASAP. 6. Impactable alcohol related (A/R) fatal accidents in Oklahoma City have remained essentially constant during the year 1973 - 1976 (avg = 26). This level was substantially below the 35 impactable A/R Fatal accidents in 1972 and the estimated 39 A/R fatal accidents in 1971 (pre-ASAP).					
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km

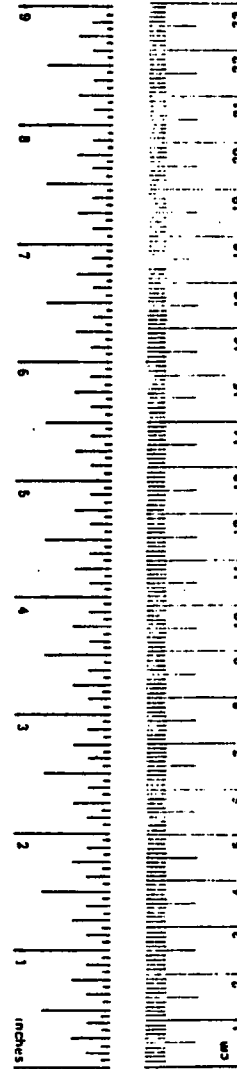
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha

MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t

VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³

TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

* 1 in. = 2.54 (exact). For other exact conversions, and more detailed tables, see NBS Mon., Publ. 286, Units of Weights and Measures, Page 52-55, NIST Catalog No. 1-1-10-286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi

AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.5	acres	

MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	

VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³

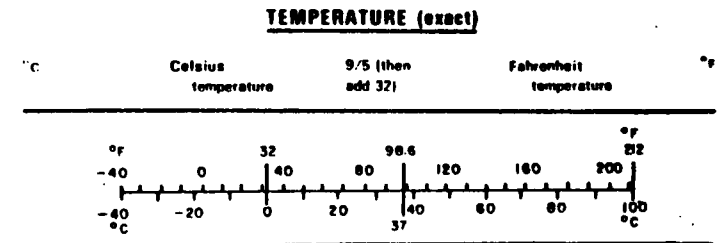


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OKLAHOMA CITY ASAP
EFFECTIVENESS AND EFFICIENCY

1972 - 1976

BY

Richard F. Krenek, Ph.D., P.E.

1. INTRODUCTION. The Oklahoma City Alcohol Safety Action Project has completed five years of operation as of December 31, 1976. During those five years the project was supported primarily by federal funds supplied by the National Highway Transportation Safety Administration. The primary goal of the project was to effect a significant reduction in alcohol related fatal and serious injury traffic accidents. This was to be accomplished through a systems approach to the problem with a traffic safety system designed, implemented, monitored and evaluated at the local level.

This report presents information, data and analysis relevant to the efficiency and effectiveness of the Oklahoma City, Oklahoma Alcohol Safety Action Project. A description of the Oklahoma City ASAP Community, as well as ASAP countermeasures descriptions, are contained in Parts 2 and 3 of this report. An indication of the Enforcement-Judicial and Prosecution-Rehabilitation System throughput and efficiency is given in Part 4. Part 5 concerns itself with the measures of program performance or achievement. Knowledge and attitude changes, as well as accidents (fatal, injury and total), are addressed. Part 6 is concerned with characteristics of the fatally injured driver.

2. SYSTEMS DESCRIPTION.

a. Description of ASAP Community. Oklahoma City is the state's largest city in both population and land area. The City encompasses 649 square miles and contains over 3,100 miles of roads. Oklahoma City's boundaries include five counties, six school districts and touch or encompass 17 smaller cities and towns. The population was estimated to be 366,413 within the corporate city limits of Oklahoma City in the 1970 census. This is only 57.2% of the total population (640,889) contained in the Oklahoma City Standard Metropolitan Statistical Area. A current estimate of Oklahoma City's population is on the order of 400,000. In recent years the city's economic base has been broadened by a remarkable growth in business and manufacturing. Even with this growth, federal, state and local governments are still the largest employers in the city area. Because of rapid population growth, and sprawling suburban developments, Oklahoma City is experiencing major traffic and transportation problems exacerbated by urban redevelopment, growth in the number of registered motor vehicles and a lack of adequate mass transportation to alleviate the high traffic volume.

In this paper, reference will be made, on occasion, to the "comparison" city of Tulsa, Oklahoma. Note from Table 1 below that Tulsa is more compact than Oklahoma City, has fewer highway miles and does not have a large population outside its corporate limits as does Oklahoma City. Further, Tulsa has had a FARE program in the past and is currently operating with a MINI-ASAP program sponsored with DOT-402 monies.

TABLE 1-A: Comparison Statistics on the Cities of Oklahoma City and Tulsa

	Oklahoma City	Tulsa
Miles of paved highways & streets (in city limits)	3,600	2,100
Land Area (square miles)	649	172
Population Within Corporate Limits	366,413 (57.2% of SMSA)	331,800 (69.6% of SMSA)
1970 Census Within SMSA	640,889	476,945
Population Density (City Limits)	576/mi ²	1929/mi ²

Oklahoma City is located in an area of moderate climate. The average temperature is 59.9 with the hottest month being July, averaging 81.5 , and the coldest, January, averaging 36.8 . Average yearly rainfall for Oklahoma City is 31.37 inches.

b. Patterns of Alcohol Consumption Within the Population. Unpublished data from the Oklahoma Tax Commission contains the amount of tax monies collected in the fiscal year of 1976 for retail liquor stores.¹ Since liquor, wine and "highpowered beer (>3.2%) can only be sold in licensed retail stores, the tax collected by these stores represents a fairly accurate estimation of alcohol consumption. The only exception to this estimation is the sale of beer of less than 3.2% alcohol which can be sold by other retail outlets.

Tulsa County reported \$509,355.30 in liquor taxes collected for a projected county population estimate in 1976 of 425,000, indicating that \$1.20 per person per year was paid in taxes. Oklahoma County reported \$666,089.22 collected for a projected county population estimate in 1976 of 561,000 which gives \$1.19 per person per year in liquor taxes paid. This indicates the per capita consumption in Oklahoma City (since it comprises a major portion of Oklahoma County) was about the same as

¹ Ayers, Henry. Public Information Officer, Oklahoma Tax Commission

the consumption in Tulsa. It is interesting to note that consumption has increased slightly in both cities, considering the reported 1975 levels of approximately \$1.12 to \$1.15 per person per year in taxes collected.

Several questions were asked on both the ASAP roadside surveys and the ASAP household surveys, which will be described in a later section, regarding the alcohol consumption patterns of the person being interviewed. Table 1-B presents information regarding whether the person being interviewed ever drinks and, for those who do drink, the type of beverage most often consumed.

TABLE 1-B: Percentage of the Driving Population in
Oklahoma City who Drink Alcoholic Beverages and Beverages
Preferred by Those who Drink
(Source - Roadside Surveys 1972 thru 1976)

QUESTIONS ASKED	PERCENTAGE OF RESPONSES				
	1972 N=1600	1973 N=1510	1974 N=1087	1975 N=1051	1976 N=1031
Do you ever drink beer, wine or liquor?					
a. Yes	72.0	71.7	73.7	73.1	72.4
b. No	28.0	28.3	26.3	26.9	27.6
Which beverage do you drink most often?					
a. Beer	71.6	67.9	66.0	66.1	65.8
b. Wine	8.6	10.7	12.0	10.1	10.4
c. Liquor	19.8	21.4	22.0	23.8	23.8

It can be seen from Table 1-B that 26 - 28 percent of the driving population claimed they did not drink, while 72 - 74 percent of the drivers interviewed said they drank either beer, wine or liquor at some time. The data are remarkably consistent over the past five years. Of those drivers interviewed who do drink alcoholic beverages, beer was the overwhelming choice as a beverage. Note, however, that beer has tended to decrease in popularity over the five-year span, while wine and liquor have increased.

For those persons who did consume alcoholic beverages at some time, a subsequent question was asked concerning the number of drinks consumed on any given day of the week. Table 1-C presents the data enumerating those persons who drink from one to two drinks per day up to eight or more drinks per day versus the number of days in the week that this amount of alcohol was consumed. Table 1-C indicates that 9.6% of those persons who do drink alcoholic beverages admit to imbibing eight or more drinks on one or more days of the week. These persons, as well as the approximately

12.4% who admit having 5 - 7 drinks on one or more days of the week, can be considered very likely to have reached a limit where they would be legally intoxicated if they should drive their vehicles after having consumed this much alcohol. Table 1-C also indicates that the most frequent pattern of drinking was to have one or two drinks on one day of the week for those who do consume alcoholic beverages. Other data collected during roadside interviews indicated that approximately 30% of those who claimed they drank alcoholic beverages should be classified as infrequent social drinkers. This group consumed no alcohol in any form during the week prior to their interview.

TABLE 1-C: Percentages of Driving Population (Drinkers Only)
in Oklahoma City who Drink One or More Drinks on One
or More Days of the Week
(Not necessarily consumed before driving)

NUMBER OF DRINKS ON ONE OR MORE DAYS OF THE WEEK	PERCENTAGE OF RESPONSES				
	1972	1973	1974	1975	1976
1. 8 or more drinks per day					
a. 1 day of week	7.5	8.5	8.0	6.9	6.0
b. 2 days of week	3.3	3.2	2.5	2.5	2.4
c. 3 or more days of week	2.4	3.1	4.0	2.0	1.2
2. 5 to 7 drinks per day					
a. 1 day of week	7.8	9.4	9.6	10.8	8.5
b. 2 days of week	2.4	3.1	3.3	2.6	2.0
c. 3 or more days of week	2.3	2.8	2.0	3.4	1.9
3. 3 to 4 drinks per day					
a. 1 day of week	16.2	17.6	15.2	16.2	14.2
b. 2 days of week	5.3	4.1	4.7	4.0	4.3
c. 3 or more days of week	1.6	1.4	0.9	1.2	1.6
4. 1 to 2 drinks per day					
a. 1 day of week	26.7	23.1	22.7	28.6	27.8
b. 2 days of week	8.4	9.8	10.5	10.4	7.4
c. 3 or more days of week	2.5	4.1	3.5	3.0	3.0

3. ASAP COUNTERMEASURE DESCRIPTIONS

a. Enforcement. The activities funded through the Oklahoma City ASAP are broken down into seven countermeasure areas. The chief enforcement countermeasure is the Alcohol Traffic Safety Unit of the Oklahoma City Police Department. The unit consists of 21 personnel and concentrates its enforcement activities specifically

on alcohol related traffic offenses. The Follow-Up Unit and the Mobile Alcohol Laboratory are operated within the Alcohol Traffic Safety Unit. The men in the enforcement component have received intensive additional training in detecting, apprehending and processing persons suspected of alcohol related traffic offenses. As a part of the Oklahoma City ASAP, additional training in alcohol related traffic offenses is also given to police recruit classes and in-service police training classes within the Oklahoma City Police Department.

The ASAP extension produced several changes in the enforcement units in 1975. Prior to 1975, only two units were recognized as distinct, these being the ATSU and the Regular Patrol. These have been expanded into four units to be analyzed and compared, with the addition of the Impact and Special units. The Impact unit consists of ATSU personnel; it is the method of attack that differs. On selected nights the ATSU saturates a particular high intensity area for DUI offenders. Originally, the MALPU, a paddy wagon and an accident investigation team were all used on "Impact night," (Friday night); however, the latter two were discontinued in Q3-75. Consequently, an accurate analysis of the Impact concept during 1975 and 1976 is not possible.

The "Special" or overtime unit consists of volunteer officers who have received four hours of specialized training in accomplishing DUI arrests. Volunteers for this squad and the extra income that accompanies it are chosen by taking past arrest records into consideration. Therefore, the overtime squad is "Special" in the sense that it contains a high concentration of officers with high arrest performance.

The Special enforcement unit operates on Saturday and Sunday nights from approximately 8 PM - 4 AM. Generally, seven to ten officers are chosen for the unit from the volunteer list for each patrol session. Time and one-half is paid to these volunteers as an incentive.

b. Judicial. The Oklahoma City ASAP Judicial countermeasure utilizes courtrooms and ancillary facilities, probation services consisting of five probation officers and clerical staff, and other personnel and facilities within the Municipal Court System of Oklahoma City. ASAP funding has made possible the enlargement of the Municipal Court System to expedite adjudication of the additional case load resulting from enforcement activities, as well as providing for two to three prosecutors in the Municipal Counselor's Office.

c. Rehabilitation. It is recognized that many persons who commit alcohol related traffic offenses are problem drinkers. Because the traditional punitive sanctions against violation of alcohol related traffic laws and ordinances have

not been effective and because research in the areas of alcohol abuse and alcoholism alleges that punitive sanctions are not effective in dealing with the problem drinking driver, the Oklahoma City ASAP has made available to the Municipal Courts of Oklahoma City a number of rehabilitation countermeasures. It was hoped that the rehabilitation countermeasures would be effective in resolving the individual's drinking problem, but if this could not be achieved, all efforts would be made to condition the individual so that he will not drive an automobile when he is impaired by alcohol. If the individual should continue to drink and drive in spite of attempts at rehabilitation then, of course, the only alternative is fine and imprisonment. The agencies, organizations and fellowships cooperating with ASAP are presented in the following descriptive summaries. A table (Table 2) will follow.

The Intermediate Care Centers of the Oklahoma State Department of Mental Health consist of the Alcohol Treatment Centers (ATC) and the Alcohol Treatment Program (ATP). The ATC conducts group and individual therapy. The Intermediate Care Centers are staffed by psychologists and psychological social workers. Both organizations are available to ASAP clients at no cost.

Central State Griffin Memorial Hospital operates utilizing NIAAA funds. Admission to treatment must be at the request of the individual, and is on an in-patient basis. The basic program consists of 30 days of medical, psychological, occupational, recreational and work therapy, with the latter, in many cases, resulting in referral to vocational rehabilitation services. Treatment is by the hospital staff of psychiatrists, psychologists and physicians.

Alcoholics Anonymous is a fellowship operated by the members themselves with no outside assistance. In compliance with the AA doctrine of self-help, participation in this countermeasure is voluntary and only upon the request of the defendant. All AA clubs in the greater Oklahoma City area cooperate with ASAP.

The Adult Behavioral Modification School is a 12 hour, four week program subcontracted to Oklahoma City University. It is coordinated by a social psychologist with expertise in alcohol studies and he, along with another psychologist employed by the University, act as principal instructors. Films, lectures, texts and examinations as well as free discussion are used to educate individuals with regard to the effects and hazards of alcohol and driving while under the influence of alcohol.

The Oklahoma City Community Counseling and Guidance Center is a United Appeal Agency and makes available individual, family or group counseling. The center emphasizes family involvement, although individual counseling is also a facet of the treatment. Charges are made on a sliding scale based on the individual

ability to pay, however, the center will not refuse persons who are unable to stand the expense. Psychiatric and psychological services as well as pastoral counseling are provided by a staff consisting of psychologists, social workers and administrators.

The Community Action Program conducts individual, family or group counseling primarily in the more economically depressed areas of Oklahoma City. The staff consists of skilled alcohol specialists, social psychologists, social workers, nursing and paraprofessional personnel. Films speakers and literature (where applicable) are utilized in the rehabilitation curriculum. The main emphasis is toward the whole family, not just the problem drinker.

The Veterans Administration Alcohol Treatment Program is a specialized medical program of mental health services. It provides counseling and psychotherapy groups for eligible veterans and significant person(s) i.e., spouse or a close relative. The staff consists of the physician-director, the staff psychiatrist, nurses and nursing assistants, social workers, psychologists, vocational rehabilitation specialist, chaplain and clerical. The admission criteria are unique in that in addition to veteran eligibility, the defendant must have some physical problem other than that associated with alcoholism (i.e., deafness, moderately severe brain syndrome, etc.).

Community Services Project of Mercy Health Center is directed toward people in the early stages of alcoholism. In-patient or out-patient individual, family or group counseling is available upon referral by a physician. Also available are medical and psychological diagnosis and therapy, as well as psychological tests, evaluation, referral and follow-up activities. Fees are on a sliding scale: \$5 per hour minimum and \$25 per hour maximum. Staff consists of two medical doctors, special consultants and a social worker.

The Tinker Social Action Program provides individual, group and family therapy to military personnel and their dependents and civilian employees at Tinker Air Force Base. Counselors are personnel skilled in the alcohol rehabilitation area and assigned to the program. Medical and psychological evaluations are available to military personnel and dependents through base facilities and civilian employees through private referrals or the State Department of Mental Health. The basic staff consists of a director, counselor, Master Sergeant and a social worker.

Parent-Child Development Center is a non-profit agency under the direct control of a board of directors (The Oklahoma Mental Health Council) representative of the communities served. The Center's purpose is to provide low cost mental

health services to people who could not otherwise afford them. Its orientation is toward youth and family treatment and it provides individual, group or family therapy. Clients must be 21 years or under or a family member whose drinking problem involves directly or indirectly a child or children in the family. Charges are on a sliding scale with no refusals because of inability to stand the expense. The Center has a professional staff of psychiatrists, psychologists, social workers and therapeutic educators. It also includes partial hospitalization for adolescents

Narcotics Anonymous. Having a doctrine of self-help analogous to that of Alcoholics Anonymous, membership and consequently, referral to this countermeasure is completely voluntary and only upon the request of the defendant. Members share their experiences, strength and hope in attempting to overcome drug abuse problems.

Special Services provides individual, family or group counseling and assists ASAP Probation by conducting probation intake interviews and one-on-one supervision to those on probation. Special Services has in excess of 100 volunteer counselors on call supplemented by three paid staff members. Psychologists, psychiatrists, social workers, ministers and other skilled individuals from many varied occupations donate time to this service. There are staff members available 8 hours a day, 5 days a week.

4. OVERALL SYSTEMS EFFICIENCY

a. Introduction. Effective manpower utilization and reasonably short DUI case processing times are among the many objectives of the ASAP system. In this section, measures of ASAP system performance will be discussed and evaluated. Enforcement, Adjudication and Probation functions will be addressed in turn. An indication of the systems flow of individuals arrested for DUI in Oklahoma City during 1976 is given in Figure 1.

b. Enforcement. Enforcement activity and performance can be measured by such parameters as numbers of arrests (by whom and when), arrests per vehicle hour and arrests per man hour. Data observations of parameters such as those previously mentioned are contained in Tables 3 through 10-B.

Table 3 indicates that Regular Patrol (traffic officers - non ASAP) activity in 1976 was not significantly different than that achieved in the baseline year 1971 (χ^2 , $\alpha = 0.05$) although, numerically, 1976 arrests exceeded those of 1971. The Regular Patrol DUI arrests during 1976 were higher than in any other operational year. The ASAP patrols increased the number of arrests effected significantly (χ^2 , $\alpha = 0.05$) in 1973, 1974, 1975 and 1976 over the first operational year (1972)

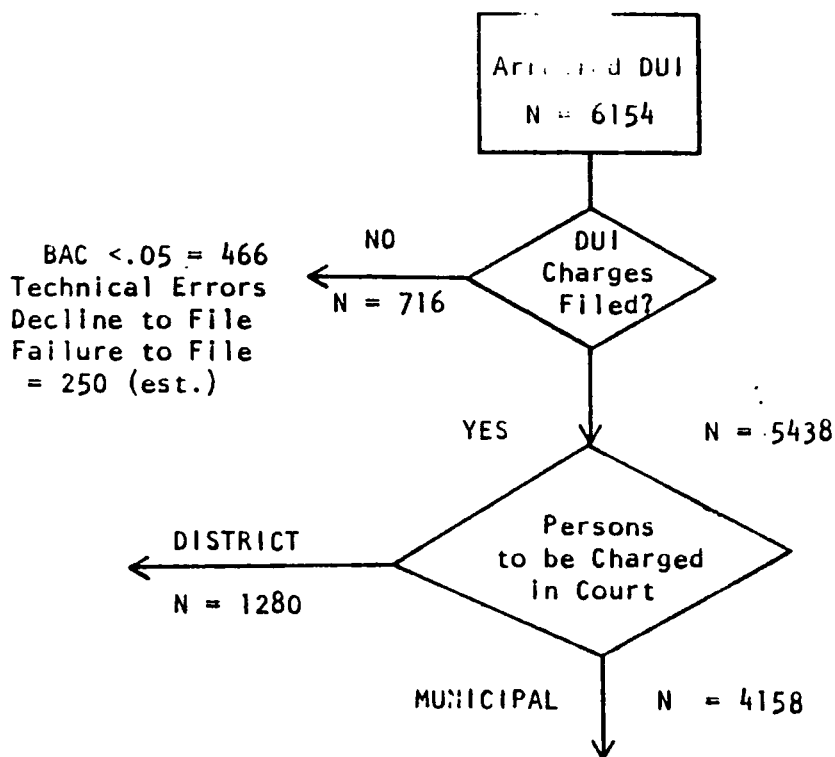
TABLE 2: Rehabilitation Countermeasure Summary

MODALITY	RESPONSIBLE AGENCY	TYPE OF REFERRAL	THERAPY AVAILABLE	THERAPY EMPHASIS	THERAPY CHARACTERISTICS	METHOD OF PAYMENT
Intermediate Care Center	State Dept. of Mental Health	Request by defendant, or pre-determined suitability.	Individual Group	Group	Out-Patient psychological treatment without disrupting normal life	No charge to client
Central State Hospital	State Dept. of Mental Health	Request by defendant or pre-determined suitability	Individual	Individual	Medical, psychological occupational, recreational & work therapy 30 day in-patient	No charge to client
Alcoholics Anonymous	Alcoholics Anonymous	Request by defendant	Group	Group	Self-help by sharing common problem with others	No charge to client
6 Adult Behavioral Modification School	Oklahoma City	Request by defendant, or pre-determined suitability	Group	Group	Educational, psychological. By regular classroom sessions	No charge to client
Oklahoma Community Counseling and Guidance Center	Oklahoma Community Counseling and Guidance Center	Request by defendant, or pre-determined suitability.	Individual, family or group	Family	Psychological	Sliding Scale
Community Action Program - Alcohol Treatment Div.	Oklahoma City Community Action Project	Request by defendant, or pre-determined suitability	Individual, group or family	Family	Psychological, oriented toward low income clients	No charge to client
Veterans' Administration Alcohol Treatment Program	Veterans' Administration	Request by defendant, or pre-determined suitability. Must meet eligibility requirements.	Individual, group	Individual	Counseling and psychotherapy	No charge to client

C O N T I N U E D

Rehabilitation Countermeasure Summary Table (continued)

MODALITY	RESPONSIBLE AGENCY	TYPE OF REFERRAL	THERAPY AVAILABLE	THERAPY EMPHASIS	THERAPY CHARACTERISTICS	METHOD OF PAYMENT
Community Services Project of Mercy Health Center	State Dept. of Mental Health	Request by defendant or pre-determined suitability. Client in early stages of alcohol abuse.	Individual, family or group	Individual	Counseling and psychotherapy	Sliding scale
Tinker Social Action Drug & Alcohol Rehabilitation Program	Tinker Air Force Base ALC/SL	Request by defendant, or pre-determined suitability.	Individual, group	Individual	Counseling and psychotherapy	No charge to client
Parent Child Development Program	Oklahoma Mental Health Council	Request by defendant or pre-determined suitability, youth-involved.	Youth, family	Youth	Counseling; educational & psychological therapy.	Sliding scale
Narcotics Anonymous	Narcotics Anonymous	Request by defendant	Group	Group	Self-help by sharing common problem	No charge to client
Special Services	Municipal Court of Oklahoma City	Request by defendant or pre-determined suitability.	Individual, family, group	Individual	Psychological, educational and spiritual therapy. Volunteer staff	No charge to client



ARRAIGNMENTS	3957
Estimated Bench Warrants Issued	607
Estimated Number of Persons Returned to System on Served Bench Warrants	170
Convicted as Charged	1760
Convicted on Reduced Charge	1400
Dismissed	146
Acquitted	6
Awaiting Final Adjudication (Estimated)	425
PRE-SENTENCE INVESTIGATIONS	1092
SUPERVISED PROBATION	826
UNSUPERVISED PROBATION	113

FIGURE 1: System Accomplishments - People Flow, 1976

TABLE 3: DUI Arrests by Quarter for
Regular & ASAP Patrols - 1976

CATEGORY	YEAR	QUARTER				YEARLY TOTAL
		1	2	3	4	
1971 (Regular Patrol)		408	426	384	485	1703
REGULAR PATROL	1972	453	431	377	410	1671
	1973	326	325	315	391	1357
	1974	351	292	314	354	1311
	1975	389	385	385	389	1548
	1976	433	423	424	476	1756
ASAP PATROL	1972	422	331	447	763	1963
	1973	971	861	875	823	3530
	1974	853	800	887	895	3435
	1975					
	ATSU	646	438	574	486	2144
	Impact	218	132	177	135	662
	Special	224	315	261	255	1055
	Total	1088	885	1012	876	3861
	1976					
	ATSU	741	746	667	502	2656
	Impact	168	192	201	186	747
	Special	252	263	257	223	995
	Total	1161	1201	1125	911	4398
TOTAL	1972	875	762	824	1173	3634
	1973	1297	1186	1190	1214	4887
	1974	1204	1092	1201	1249	4746
	1975	1478	1270	1397	1265	5409
	1976	1594	1624	1549	1387	6154

arrest rate. Further, the ASAP Patrol arrests were significantly greater in 1976 than in any of the previous operational years (χ^2 , $\alpha = 0.05$). Increases in efficiency and manpower utilization accounted for the significant increase.

Tables 4, 5, 6 and 7 present data concerning the number of DUI arrests by time of day and day of week for 1973, 1974, 1975 and 1976 respectively. A Chi-Square two sample test revealed a significant (χ^2 , $\alpha = 0.05$) shift in the time-arrest distribution between 1973 and 1974. The shift consisted of an increase in arrests between 8 P.M.-midnight and a decrease in arrests in both the midnight-4 A.M. and 4 A.M.-8 A.M. time periods. There was not significant difference, however, in the time of arrest distribution between 1974 and 1975 (χ^2 , $\alpha = 0.05$).

Another significant change (χ^2 , $\alpha = 0.05$) in the time arrest distribution occurred between 1975 and 1976. While the total number of arrests increased by 745, an increase of 654 arrests occurred in the 8 P.M.-midnight period in 1976 compared to 1975. Further, a significant decrease in weekend arrests occurred in 1974 compared to 1973. No significant difference in the weekend-weekday arrest distribution between 1974 and 1975 was detected (χ^2 , $\alpha = 0.05$). During 1976 a statistically significant (χ^2 , $\alpha = 0.05$) shift in the day of week distribution occurred, however. The shift consisted of a proportionate decrease in arrests on Saturdays and Sundays combined with a proportionate increase in arrests on Weekdays in 1976 compared to 1975.

Tables 8 and 9 and Figure 2 present some measures of efficiency for the ASAP Patrol: DUI arrests per vehicle hour and DUI arrests per man hour for the ATSU, Impact and Special Enforcement units. Note that arrests per vehicle hour and arrests per man hour are virtually identical in 1976 because of the almost exclusive use of one-man patrols.

Both the Impact Squad, which operates only on Friday nights and the Special Enforcement unit (overtime) which operates on Saturday and Sunday nights were instituted in January 1975. Therefore, 1975 data cannot be compared historically. However, arrests per vehicle hour were significantly higher for the Impact Squad than for ATSU (t , $\alpha = 0.05$).

Arrests per man hour increased dramatically for the ATSU in 1975 compared to 1974. The increase from .081 arrests per man hour in 1974 to .125 arrests per man hour was both statistically significant (t , $\alpha = 0.05$) and of practical importance. A further increase in ATSU efficiency occurred in 1976. ATSU arrests per man hour were .156 in 1976, almost double the 1974 level. Note that the ATSU operated only Monday through Thursday in 1975 and 1976 but seven days a week in 1974. In 1975 and 1976 however, one-man vehicles were utilized, while in 1974 two-man vehicles

TABLE 4: Number of DUI Arrests by Time of Day, Day of Week
FOR 1973

DAY	TIME (4 Hour Intervals)							PREVIOUS YEAR
	M-4AM	4AM-8AM	8AM-N	N-4PM	4PM-8PM	8PM-M	TOTAL	
Monday	205	24	5	20	41	164	459	325
Tuesday	226	21	4	21	28	192	492	312
Wednesday	333	41	5	20	40	224	663	378
Thursday	335	47	12	16	40	262	709	451
Friday	421	55	8	17	58	288	847	536
Saturday	487	73	14	33	67	291	965	870
Sunday	423	82	14	19	47	167	752	763
TOTAL	2430	343	59	146	320	1588	4887	---
PREVIOUS YEAR	1571	269	87	172	422	1114	—	3635

TABLE 5: Number of DUI Arrests by Time of Day, Day of Week
for 1974

DAY	TIME (4 Hour Intervals)							PREVIOUS YEAR
	M-4AM	4AM-8AM	8AM-N	N-4PM	4PM-8PM	8PM-M	TOTAL	
Monday	191	4	4	12	41	210	462	459
Tuesday	282	5	5	15	38	249	594	492
Wednesday	304	5	3	14	37	211	574	663
Thursday	339	29	5	12	53	292	720	709
Friday	350	8	4	13	65	368	790	847
Saturday	374	11	17	36	82	350	870	965
Sunday	380	23	9	18	57	249	736	752
TOTAL	2210	85	47	120	373	1911	4746	---
PREVIOUS YEAR	2430	343	59	146	320	1588	---	4887

TABLE 6: Number of DUI Arrests by Time of Day, Day of Week
for 1975

DAY	TIME (4 Hour Intervals)							PREVIOUS YEAR
	M-4AM	4AM-8AM	8AM-N	N-4PM	4PM-8PM	8PM-M	TOTAL	
Monday	189	3	3	10	66	279	550	462
Tuesday	295	3	5	17	65	306	691	594
Wednesday	318	6	7	12	65	299	707	574
Thursday	345	16	6	18	42	314	741	720
Friday	333	4	11	28	46	389	811	790
Saturday	581	23	19	31	83	390	1127	870
Sunday	383	18	8	14	61	299	783	736
TOTAL	2444	73	59	130	428	2276	5410	---
PREVIOUS YEAR 1974	2210	85	47	120	373	1911	---	4746

TABLE 7: Number of DUI Arrests by Time of Day, Day of Week - 1976

DAY	TIME (4 Hour Intervals)							PREVIOUS YEAR 1975
	M-4AM	4AM-8AM	8AM-N	N-4PM	4PM-8PM	8PM-M	TOTAL	
Monday	202	3	7	14	68	408	702	550
Tuesday	295	7	2	24	64	407	799	691
Wednesday	333	4	9	19	73	426	864	707
Thursday	340	10	8	19	82	446	905	741
Friday	355	13	10	27	63	514	982	811
Saturday	514	20	17	37	84	404	1076	1127
Sunday	379	8	8	29	77	325	826	783
TOTAL	2418	65	61	169	511	2930	6154	---
PREVIOUS YEAR 1975	2444	73	59	130	428	2276	---	5410

TABLE 8: DUI Arrests per Vehicle-Hour
During 1976 for ATSU, Impact and Special Enforcement Units

MONTH/ QUARTER	A/R ARRESTS			PATROL VEHICLE-HOURS			ARRESTS/VEHICLE-HOUR		
	ATSU	Impact	Special	ATSU	Impact	Special	ATSU	Impact	Special
January	206	47	90	1352	440	648	.152	.107	.139
February	234	53	88	1578	320	632	.151	.166	.139
March	296	68	74	1600	360	568	.185	.189	.130
Q1	741	168	252	4520	1120	1848	.164	.150	.136
April	270	74	92	1592	384	552	.170	.193	.167
May	226	65	94	1590	360	752	.142	.181	.125
June	250	53	77	1480	320	520	.168	.166	.148
Q2	746	192	263	4664	1064	1824	.160	.180	.144
July	201	76	76	1368	400	472	.147	.190	.161
August	244	56	85	1632	256	544	.150	.219	.156
September	222	69	96	1384	328	632	.160	.210	.152
Q3	667	201	257	4384	984	1648	.152	.204	.156
October	140	75	89	1096	344	656	.128	.218	.136
November	162	60	64	1120	224	616	.145	.268	.104
December	200	51	70	944	304	506	.212	.168	.138
Q4	502	186	223	3160	872	1778	.159	.213	.125
YEAR TOTAL	2656	747	995	16728	4040	7098	.159	.185	.140

TABLE 9: DUI Arrests per Man-Hour During
1976 for ATSU, Impact and Special Enforcement Units

MONTH/ QUARTER	A/R ARRESTS			PATROL MAN-HOURS			ARRESTS/MAN-HOUR		
	ATSU	Impact	Special	ATSU	Impact	Special	ATSU	Impact	Special
January	206	47	90	1352	440	648	.152	.107	.139
February	239	53	88	1600	320	632	.149	.166	.139
March	296	68	74	1600	360	568	.185	.189	.130
Q1	741	168	252	4552	1120	1848	.163	.150	.136
April	270	74	92	1592	384	552	.170	.193	.167
May	226	65	94	1592	360	752	.142	.181	.125
June	250	53	77	1488	320	520	.168	.166	.148
Q2	746	192	263	4672	1064	1824	.160	.180	.144
July	201	76	76	1368	400	472	.147	.192	.161
August	244	56	85	1624	256	544	.150	.219	.156
September	222	69	96	1384	328	632	.160	.210	.152
Q3	667	201	257	4376	984	1648	.152	.204	.156
October	140	75	89	1096	344	656	.128	.218	.136
November	162	60	64	1120	224	616	.145	.268	.104
December	200	51	70	1208	304	506	.166	.168	.138
Q4	502	186	223	3424	872	1778	.147	.213	.125
YEAR TOTAL	2656	747	995	17024	4040	7098	.156	.185	.140

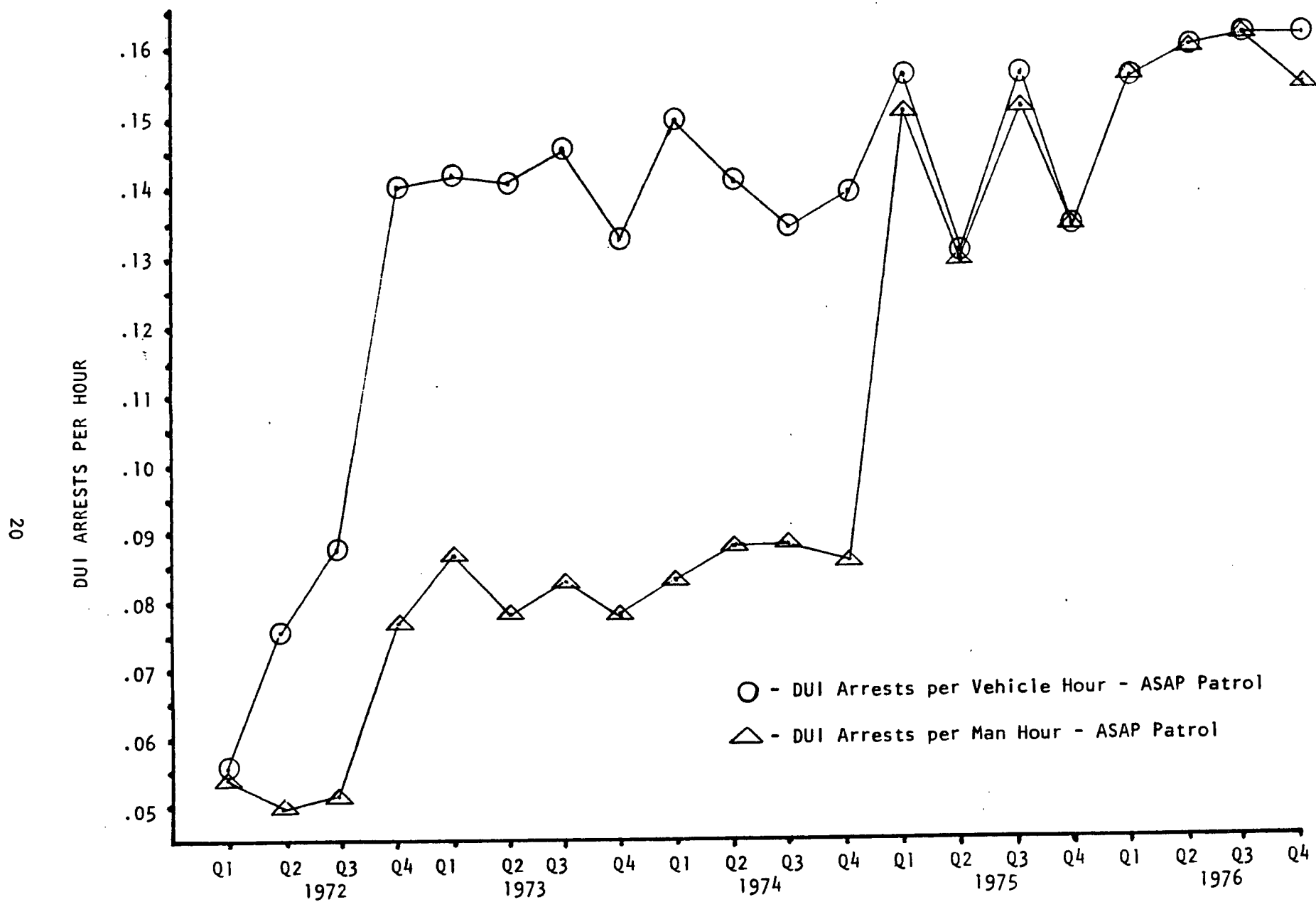


FIGURE 2: DUI Arrests per Man Hour and Vehicle Hour by Quarter 1972-1976

were used. The other ASAP patrols (Impact and Special) also used one-man vehicles. The Impact and Special Enforcement units averaged .185 and .140 arrests per man hour respectively. The difference between ATSU and the other two ASAP patrols' arrests per man hour is not statistically significant. However, the ATSU patrols only during the week while the other units patrol only on weekends. The Impact unit uses the same highly trained personnel, but always operates on Friday when a higher proportion of drinking drivers is on the highway compared with Monday through Thursday. The Special Enforcement Unit utilized special incentives (overtime pay with staffing selected from volunteers and selection for future overtime assignments based on past arrest performance.) It is surprising, therefore, that the Special Enforcement Unit, operating on Saturdays and Sundays, did not have as high an arrest efficiency as the Impact Squad. In fact, Special Enforcement Unit arrests per man hour were significantly ($t, \alpha = 0.05$) lower than the Impact unit in 1976.

Tables 10-A and 10-B present data concerning the efficiency of both the ATSU-Impact Group and the Special Enforcement Unit by four hour time periods. Special Enforcement unit efficiency in the midnight-4 A.M. period decreased precipitously in 1976 compared to 1975 (significant, $t, \alpha = 0.05$). The ATSU-Impact Group Improved their 8 P.M.-midnight efficiency considerably in 1976 compared to 1975 (significant, $t, \alpha = 0.05$) while their midnight-4 A.M. efficiency remained essentially unchanged. Negligible effort was expended by any of the ATSU units during the 4 A.M.-8 A.M. period in 1976.

In summary, the ASAP Patrol units have made tremendous gains in efficiency since 1972, although some problems with the Special Enforcement unit were noted in 1976. Total ASAP Patrol arrests increased from 3,435 DUI arrests in 1974 to 3,861 in 1975, and 4,398 in 1976, while the hours spent in effecting those arrests decreased from 42,233 in 1974 to 27,844 in 1975 and 28,162 in 1976. This data indicates an overall ATSU efficiency of .081, .139 and .156 arrests per man hour in 1974, 1975 and 1976 respectively. This recent progression of increasing efficiency is extremely favorable when compared with the .063 arrests per man hour computed in 1972.

c. Adjudication. Adjudication activity and performance include the services of both prosecution and judicial personnel. Parameters of activity and performance include number of persons processed through the court system, percent convictions, percent convicted as charged, acquittals, average time from arrest to disposition, disposition-time distribution and average BAC of those convicted.

TABLE 10-A: Arrests Per Man-Hour Versus Percent of Total Man-Hours and Total Arrests
for Three Selected Time Intervals for ATSU 1972 through 1974 and ATSU - Impact for 1975-1976

PERFORMANCE MEASURE	1972				1973				1974				1975				1976			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BPM-M Arrests per Man-Hour	.046	.036	.033	.045	.077	.056	.070	.060	.065	.070	.070	.089	.114	.099	.136	.112	.155	.174	.174	.174
Percent of Total Arrests	33.4	29.0	26.2	26.7	36.0	29.5	30.7	31.5	40.0	41.4	41.6	43.6	45.5	44.3	48.6	50.2	46.9	53.1	53.6	54.2
Percent of Total Hours	39.6	40.0	38.3	35.1	31.7	32.8	35.4	32.0	37.8	49.1	50.0	38.8	49.6	50.0	45.0	50.0	48.3	50.0	50.0	50.0
M-4AM Arrests per Man-Hour	.076	.077	.078	.097	.112	.115	.137	.118	.097	.096	.101	.099	.165	.154	.164	.134	.182	.165	.161	.156
Percent of Total Arrests	56.6	62.5	61.5	57.8	52.4	60.4	60.5	61.7	59.6	57.8	55.9	49.7	49.9	52.2	45.3	45.4	49.6	44.2	43.5	43.3
Percent of Total Hours	39.6	40.0	38.3	35.1	31.7	32.8	35.4	32.0	37.8	49.1	46.4	40.0	36.0	38.0	36.6	37.9	43.8	43.8	43.8	43.8
4AM-8AM Arrests per Man-Hour	.021	.021	.024	.042	.037	.027	.034	.022	N/A*	.022	.052	.008	.227	N/A	.125	N/A	.063	.000	.000	.000
Percent of Total Arrests	7.8	8.5	9.6	11.1	9.9	8.7	8.5	5.8	N/A	0.5	2.3	1.1	0.7	0.2	0.4	0.2	0.7	0.0	0.0	0.0
Percent of Total hours	19.6	20.0	19.2	15.5	17.9	19.9	20.0	16.0	N/A	1.8**	3.6	11.8	0.4	N/A	0.5	N/A	1.7	0.0	0.0	0.0

* ATSU Patrol Started 1/1/74 on BPM - 4AM Shift

** ATSU Patrol has small number of officers on duty during 4AM - 8AM period

TABLE 10-B: Arrests Per Man-Hour Versus Percent of Total Man-Hours and Total Arrests for Three Selected Time Intervals for ATSU 1972 through 1974 and Special Enforcement Unit for 1975 and 1976

PERFORMANCE MEASURE	1972				1973				1974				1975				1976			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BPM-M Arrests per Man-hour	.046	.036	.033	.045	.077	.056	.070	.060	.065	.070	.070	.089	.123	.131	.112	.115	.129	.191	.175	.125
Percent of Total Arrests	33.4	29.0	26.2	26.7	36.0	29.5	30.7	31.5	40.0	41.4	41.6	43.6	36.5	38.1	39.7	36.2	47.2	51.7	56.0	49.8
Percent of Total Hours	39.6	40.0	38.3	35.1	31.7	32.8	35.4	32.0	37.8	49.1	50.0	38.8	45.1	50.0	50.0	50.0	50.0	50.0	50.0	50.0
M-4A Arrests per Man-hour	.078	.077	.078	.097	.112	.115	.137	.118	.097	.098	.101	.099	.213	.240	.185	.207	.147	.144	.146	.126
Percent of Total Arrests	56.6	62.5	61.5	57.8	52.4	60.4	60.5	61.7	59.6	57.8	55.9	49.7	60.4	59.3	57.5	59.6	50.8	47.1	44.0	47.1
Percent of Total Hours	39.6	40.0	38.3	35.1	31.7	32.8	35.4	32.0	37.8	49.1	46.4	40.0	42.7	42.6	43.7	43.5	46.9	46.9	46.8	46.8
4AM-6AM Arrests per Man-hour	.021	.021	.024	.042	.037	.027	.034	.022	N/A*	.022	.052	.006	.055	N/A	.000	N/A	.000	.000	.000	.000
Percent of Total Arrests	7.8	8.5	9.6	11.1	9.9	8.7	8.5	5.8	N/A	0.5	2.3	1.1	1.7	0.6	0.0	0.3	0.0	0.0	0.0	0.0
Percent of Total Hours	19.8	20.0	19.2	15.5	17.9	19.9	20.0	16.0	N/A	1.8**	3.6	11.6	4.9	N/A	0.0	N/A	0.0	0.0	0.0	0.0

* ATSU Patrol Started 1/1/74 on BPM - 4AM Shift

** ATSU Patrol has small number of officers on duty during 4A: - 6AM period

Table 11 presents data concerning the court dispositions. The data indicate the following:

- (1) Total court dispositions were down by 5.2% in 1976 compared to 1975.
- (2) Suspects convicted on a reduced charge increased from 25.9% of total dispositions in 1975 to 42.3% of total dispositions in 1976 (significant, χ^2 , $\alpha = 0$
- (3) Suspects whose charges were either dismissed or who were acquitted were up slightly in 1976 compared to 1975 (not significant, χ^2 , $\alpha = 0.05$).
- (4) Percent guilty pleas in 1976 were not significantly different in 1976 than in 1975 (z , $\alpha = 0.05$).

The Oklahoma City Attorney's Office instituted a significant policy change early in 1976. Deferred sentencing (i.e., plea of guilty to the charge of DUI with sentence deferred for six months while client was on probation - successful completion of probation resulted in a withdrawal of the guilty plea and dropping of the DUI charge by the prosecution) as a plea bargaining tool was reduced in use significantly and replaced by the continued sentence. A continued sentence is similar to the deferred sentence except that the charge is amended to a non-alcohol related charge (generally reckless operation) and a fine is paid after the probationary period is successfully completed. This is the basic reason for the increase in reduced charges in 1976 compared to 1975. Deferred sentence convictions were and still are counted as "convicted as charged" for statistical purposes.

A revised estimate of the number of in-process DUI cases was effected for this report. Aged cases (over 6 months since arrest) were removed from the in-process group. The best currently available estimate for in-process DUI cases is 425 ± 100 . This represents about two to two and one-half months court dispositions and is consistent with processing time distributions.

The distribution of arraignment to disposition time periods by quarter for 1975 and 1976 is shown in Table 12-A, while mean arraignment to disposition time by year is given in Table 12-B and Figure 3. Approximately 7% of the cases adjudicated in 1975 took more than 100 days from arraignment to disposition. In 1976, however, over 13% required in excess of 100 days. The mode of the quarterly distributions moved from the 40-59 days interval to the 60-79 days interval in Q1-76 and remained there for the first three quarters. In the third quarter a definite platykurtosis occurred followed by a movement of the mode to the 20-39 days interval in Q4-76.

It is believed that these arrest to disposition time distribution changes during 1976 were primarily the result of personnel and policy changes in the ASAP prosecution office. The fourth quarter 1976 mean processing time (arrest to final

TABLE 11: Disposition of Individuals (DUI arrests) Processed
Through the Oklahoma City Court - 1972 Through 1976

		1972	1973	1974	1975	1976
Convicted as Charged	N	1202	2963	2423	2467	1760
	%	76.4	83.3	78.4	70.5	53.1
Convicted - Reduced Charge	N	299	302	542	905	1400
	%	19.0	8.5	17.5	25.9	42.3
Dismissed	N	52	220	116	112	146
	%	3.3	6.2	3.8	3.2	4.4
Acquitted	N	20	71	8	13	6
	%	1.3	2.0	0.3	0.4	0.2
Total Court Dispositions	N	1573	3556	3089	3497	3312
	%	100.0	100.0	100.0	100.0	100.0
Guilty Pleas (% of Total Court Dispositions)		93.7	91.8	92.7	96.2	95.3

TABLE 12-A: Time Required in Days to Process
Individuals Through the Courts
Each Quarter, 1975 and 1976

PERFORMANCE MEASURE	1975				1976			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Arrest to Arraignment	19.9	19.1	18.6	18.1	19.7	24.9	27.3	22.4
Arraignment to Disposition	37.5	44.4	37.5	40.6	44.0	44.2	46.8	32.1
Arrest to Disposition	57.4	63.7	56.1	59.3	63.7	69.1	74.3	54.5

TABLE 12-B: Average Time in Days Required
To Process Individuals Through
the Courts by Year, 1972 - 1976

PERFORMANCE MEASURE	BASELINE	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
	1971	1972	1973	1974	1975	1976
Arrest to Arraignment	23.3	25.0	22.6	22.3	18.9	23.7
Arraignment to Disposition	115.1	62.7	75.0	48.6	40.4	41.7
Arrest to Disposition	128.3	87.6	97.5	70.8	59.3	65.4

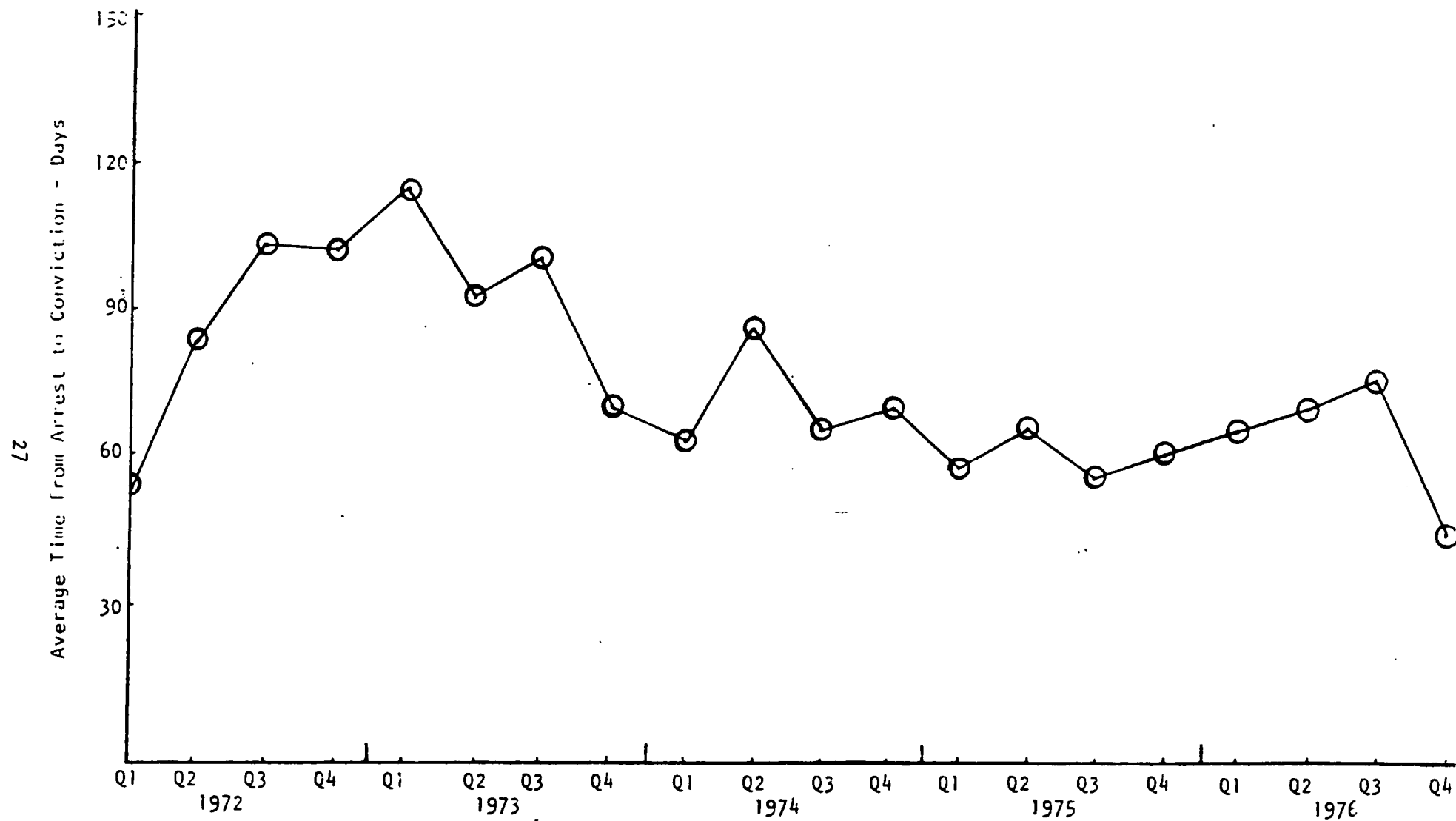


FIGURE 3: Average Time Required to Process Defendants Through the Courts from Arrest to Conviction Per Quarter 1972- 1976

disposition) was as good or better than any previous operational quarter.

There is little doubt that the operation of the court system has continued to improve during the ASAP operational phase when processing time is used as a criterion.

Table 11 indicates that approximately 95% of those persons tried in 1976 entered a plea of guilty. Of those, about 56% pled guilty to the original DUI charge while 44% pled to a lesser charge. This is a significant increase in reduced charges compared to 1975 and is primarily a result of changes in policy discussed previously in this section.

Figure 4 shows the significant downward trend in mean BAC for those convicted as charged as well as individuals convicted on reduced charges from 1971 through 1975. The mean BAC of persons convicted as charged (DUI) remained essentially unchanged in 1976 at .168 (168 mg.%) compared to .17 (170 mg.%) in 1975. This is significantly lower ($t, \alpha = 0.05$) than the .23 (230 mg.%) average for those convicted as charged in 1971. The mean BAC for individuals convicted of a reduced charge has increased slightly to .127 (127 mg.%) in 1976 compared to .12 (120 mg.%) in 1975. This compared favorably to .16 (160 mg.%) for reduced charge convictions in 1971. This decrease is statistically significant ($t, \alpha = 0.05$).

d. Probation. The Probation Department in the Oklahoma City ASAP had four basic tasks during 1976. These were:

- (1) Diagnosis and referral - including Pre-Sentence Investigation (PSI), diagnostic procedures and recommendations to the court concerning the appropriateness of various rehabilitation countermeasures.

- (2) Monitoring individuals on supervised and unsupervised probation.

- (3) Providing one-on-one counseling on a regular basis.

- (4) Completing intake and follow-up interviews for individuals assigned to the Special Group (Short Term Rehabilitation Study).

Data indicating levels of effort for the probation staff diagnosis and referral activities is given in Tables 13 through 17. Casual observation of Tables 13, 14 and 15 indicates that probation activity was down considerably in all categories in 1976 compared to 1975. This situation was primarily due to a lack of referrals to PSI on the part of the prosecution staff. Referrals to PSI are generally made as the result of plea-bargaining agreements prior to trial. Attempts to increase the numbers of PSI referrals on the part of ASAP management have been only marginally successful.

"Unidentified" category individuals referred to in the tables can actually not be clearly identified as either problem or non-problem drinkers by the

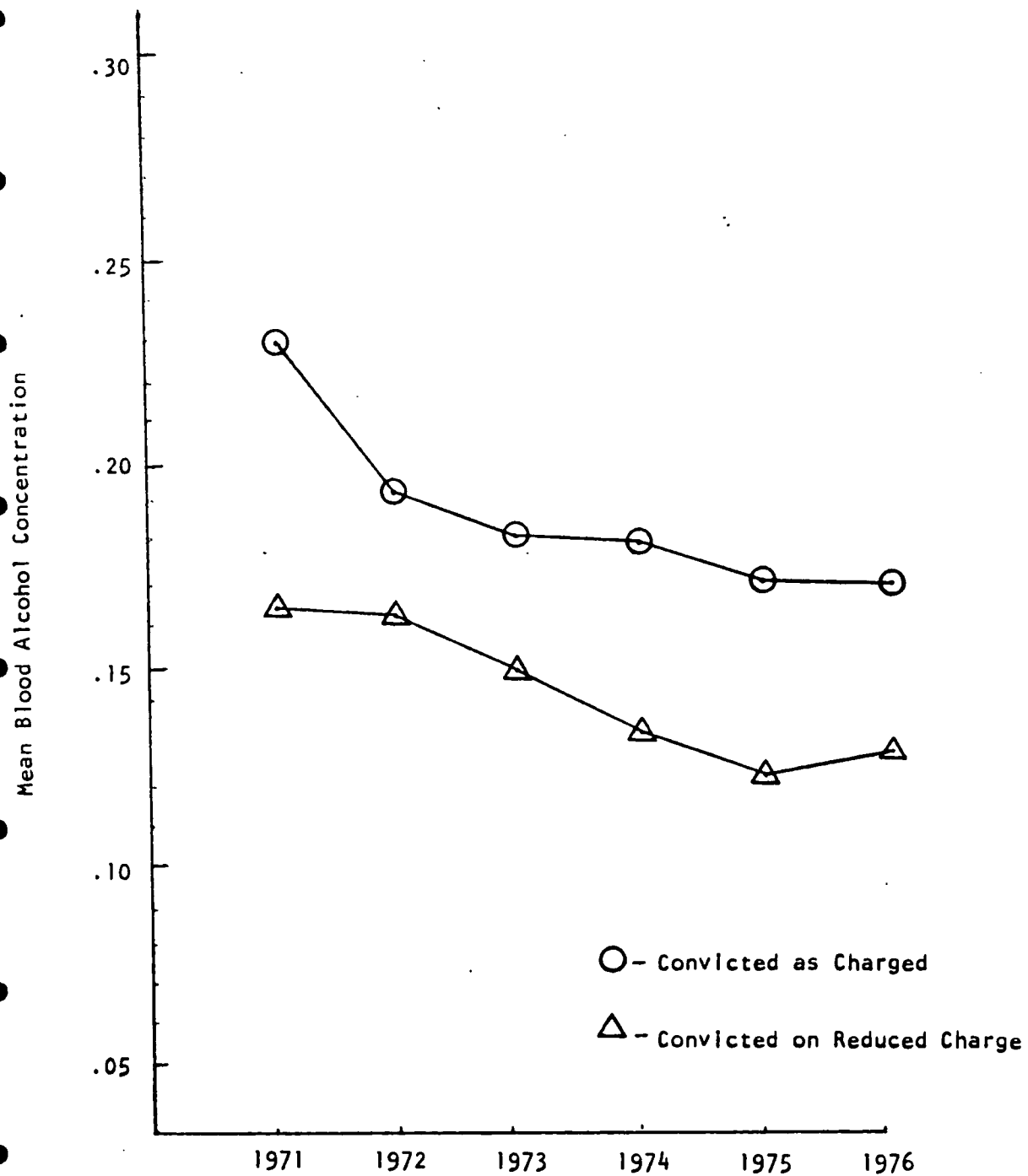


FIGURE 4: Mean BAC for Persons Convicted as Charged and Convicted on Reduced Charge by Year 1971-1976

TABLE 13: Number of Individuals Interviewed
by the Probation Officer 1972 thru 1976

DRINKER CLASSIFICATION	1972	1973	1974	1975	1976
Problem Drinker	416	988	651	1255	870
Non-Problem Drinker	162	201	81	32	33
Category Unidentified	215	398	180	224	189
TOTAL	793	1587	912	1481	1092

TABLE 14: Number of People Assigned to Supervised and
Unsupervised Probation 1972 thru 1976

DRINKER CLASSIFICATION	1972	1973	1974	1975	1976
<u>Supervised Probation</u>					
Problem Drinker	184	851	415	866	695
Non-Problem Drinker	42	84	15	5	12
Category Unidentified	80	241	91	144	119
TOTAL SUPERVISED	306	1176	528	1015	826
<u>Unsupervised Probation</u>					
Problem Drinker	11	70	63	217	56
Non-Problem Drinker	14	60	34	21	12
Category Unidentified	19	82	59	81	45
TOTAL UNSUPERVISED	44	212	156	319	113
TOTAL PROBATION	350	1388	684	1334	939

TABLE 15: Background Investigation Activity
1972 thru 1976

EVALUATION MEASURE	1972	1973	1974	1975	1976
<u>Background Investigation</u>					
Cases Completed	793	1587	912	1481	1092
Interviews by Probation	793	1587	912	1481	1092
Drivers Record Check	605	853	474	1173	844
Criminal Record Check	44	24	17	15	8
Social/Health Agency	12	8	7	5	1
Family/Employment Check*	792	1587	912	1481	1092
Arrest Report	721	1056	588	1379	1030

* Check made as part of Probation Interview and consists primarily of family/employment history provided by the client.

TABLE 16: Recommendations of Probation Staff
by Drinker Classification 1975 and 1976

	1975		1976	
	N	%	N	%
A. Total PSI Population	1481	100	1092	100
B. Recommended for Rehabilitation	1407	95.0% of A	939	86.0% of A
1. Problem Drinker	1182	84.0% of B	751	80.0% of B
2. Non-Problem Drinker	25	1.8% of B	24	2.6% of B
3. Category Unidentified	200	14.2% of B	164	17.4% of B
C. Not Recommended for Rehabilitation	74	5.0% of A	153	14.0% of A
1. Problem Drinker	43	58.1% of C	90	58.8% of C
2. Non-Problem Drinker	7	9.5% of C	17	11.1% of C
3. Category Unidentified	24	32.4% of C	46	30.1% of C
<hr/>				
Total Problem Drinkers	1225	82.7% of A	841	77.0% of A
Total Non-Problem Drinkers	32	2.2% of A	41	3.8% of A
Total Unidentified Category Drinkers	224	15.1% of A	210	19.2% of A

TABLE 17: Individual Enrollments in Countermeasures
(1975 & 1976) Compared to Enrollment Goals
of the 1975 Operational Plan

COUNTERMEASURES	OPERATIONAL PLAN ENROLLMENT GOALS FOR EACH YEAR	1975		1976	
		ASSIGNMENTS	% DEV.	ASSIGNMENTS	% DEV.
● Improved Probation Supervised General One-on-One Unsupervised	2000	1329 1009 675 334 320	(34)	939 826 550 278 113	(53)
● Adult Behavioral Modification	325	314	(3)	333	2
Alcoholics Anonymous	200	142	(29)	157	(22)
Intermediate Care Centers	200	199	(.5)	138	(31)
Alcohol Treatment Prog.		45		17	
● Alcohol Treatment Center		154		121	
Special Services	200	264	32	130	(35)
Community Action Program	50	84	68	55	10
● Parent/Child Devel. Center	50	5	(90)	10	(80)
Tinker Social Action Prog.	50	13	(74)	19	(62)
Veterans Administration	50	6	(88)	3	(94)
● OKC Community Counseling & Guidance Center	25	8	(68)	0	(100)
Mid-Del Youth & Family Center	20	3	(100)	0	(100)
Narcotics Anonymous	10	3	(100)	0	(100)
● Central State Hospital	2	1	(50)	0	(100)
TOTAL	3182	2375	(25)	1784	(44)

NOTE: Numbers in Parentheses are those countermeasures which have not reached their goal.

probation staff. They are somewhere in between and their tendency is probably toward greater alcohol involvement in the future.

Note that the number of non-problem drinkers interviewed by the probation staff has decreased markedly from 1973 to 1975. In 1976, however, this number remained constant at the 1975 level, but interviews of problem and unidentified drinkers decreased significantly. Only 3% of the individuals given pre-sentence investigations in 1976 were classified as non-problem drinkers. Similarly, only 2.6% of those on some form of probation were non-problem drinkers. Almost 80% of the individuals given pre-sentence investigations in 1976 were problem drinkers, while 80% of those on some form of probation were classified as problem drinkers. This is substantially the same type of PSI selection and probation assignment pattern that existed during 1975.

Obviously, a form of pre-selection for Pre-Sentence Interviews has evolved with time. There has been a tendency for the attorneys of individuals with high arrest BAC readings to plea bargain prior to trial and "get on the program." In addition, probation personnel, through experience, perhaps feel that their services are not actually required by non-problem drinkers. Further, non-problem drinkers tend to have relatively low BAC readings and are more likely to have better driving records compared to problem drinkers and are thus more likely to be in a bargaining position for reduced charges coupled with a fine or a fine and suspended sentence as a penalty.

Table 16 indicates the percentages of the total Pre-Sentence Investigation population by drinker type for both the recommended and non-recommended (for) rehabilitation groups. The results in the table merely serve to reinforce the hypothesis that the probation staff are more likely to recommend one or more rehabilitation countermeasures for problem drinkers than for individuals classified as either non-problem or unidentified category drinkers. It should be noted here that a significantly higher percentage ($t, \alpha = 0.05$) of those interviewed during 1976 were not recommended for rehabilitation than in 1975. This was a result of both increased selectivity on the part of probation staff and an increase of non-desirable candidates for rehabilitation referred by the prosecution staff.

Table 17 indicates the enrollments of individuals in specific countermeasures relative to enrollment goals of the 1975 Operational Plan. Even though the number of DUI arrests has exceeded the Detailed Plan estimates, the problems of inadequate assignments to meet target projections existed over the 1975-1976 period. Only the Adult Behavioral Modification, Special Services and Community Action Program

assignment goals over the combined two year period have been approached or exceeded. The data indicates a deterioration in assignments during 1976 compared to 1975. This is consistent with other data discussed in previous paragraphs in this section.

5. MEASURES OF PROGRAM PERFORMANCE. Program performance should be measured by addressing those parameters which the program is purported to affect. The primary goal of the Oklahoma City ASAP is a significant reduction in the number of fatal traffic crashes involving alcohol-impaired drivers. Further, objectives of the project include positive changes in knowledge of and attitude toward the drinking-driving problem and changes in population behavior as a result of increased knowledge and improved attitudes. Other objectives include favorable changes in the number of property damage and injury traffic accidents.

Parameters related to achievement of the above objectives will be discussed in the following paragraphs in this section.

a. Knowledge and Attitudes of the Driving Population. Two basic sources of knowledge and attitudes in the Oklahoma City area were roadside surveys and four telephone surveys. Roadside surveys were completed in late summer of each year: 1971 through 1976. From 17 to 19 locations (same locations each year) were surveyed via structured personal interviews with randomly selected drivers between the hours of 6 P.M. and 3 A.M. on both weekdays and weekends.

A check question and observation was included in each year's survey. A "greeter" would observe and record whether the driver of each vehicle selected to participate in the survey was wearing a seatbelt and, if not, whether the vehicle was equipped with them. Later, an interviewer would ask the driver whether the vehicle he was driving was equipped with seatbelts and whether he was wearing them when he was stopped for the survey. An internal check in the computer resulted in the discovery that about 10% of the interviewees did not tell the truth regarding seatbelt usage during each year. On the basis of suspected unreliability, these questionnaires were eliminated from inclusion in the data set. This "purged" data set is utilized here.

Four questions concerned with "driver knowledge" (of the drinker-driver problem or the ASAP program) were contained in the survey. The questions and responses to these are given in Table 18. The data contained in this table indicate the following:

TABLE 18: "Driver Knowledge" as Indicated by
Four Roadside Survey Questions

QUESTION	(PERCENT)				
	1972 N=1600	1973 N=1510	1974 N=1087	1975 N=1051	1976 N=1031
Have you heard of a campaign to reduce alcohol-related traffic deaths?					
Yes	62.97	57.48	61.90	58.10	63.10
No	37.03	42.52	38.10	41.90	36.90
Where did you read or hear about it?*					
Word of Mouth	16.9	27.2	26.6	24.4	22.5
Radio	27.0	20.4	32.9	20.5	26.6
Television	65.0	67.7	74.0	69.6	76.2
Magazine	7.1	10.9	18.5	8.8	7.1
Local Newspaper	36.0	21.0	22.7	16.2	13.2
Billboard/Road sign	3.4	5.1	18.2	5.0	9.7
Pamphlet	6.4	3.9	8.4	5.0	6.0
Poster in Bar or Tavern	0.8	1.0	2.3	1.8	0.6
Don't Know	3.6	2.1	21.9	5.1	1.6
		1971	1974	1975	1976
Have you ever heard of the term BAC, or Blood Alcohol Concentration?					
Yes		57.15	74.43	74.02	71.80
No		41.92	25.02	25.50	28.10
Refused to answer		0.93	0.55	0.48	0.0

* Multiple answers were permitted in this question

(C O N T I N U E D)

TABLE 18: (Continued)

What is the legal definition of DUI?

	(Percent)
1971	
Correct Response (.15% BAC)	9.2
Incorrect Response	26.1
Don't Know	64.7
1972	
Correct Response (.05% BAC)	12.4
(.10% BAC)	22.6
Incorrect Response	22.9
Don't Know	42.2
1973	
Correct Response (.05% BAC)	23.1
(.10% BAC)	22.1
Incorrect Response	19.4
Don't Know	35.4
1974	
Correct Response (.05% BAC)	21.8
(.10% BAC)	17.8
Incorrect Response	18.4
Don't Know	42.0
1975	
Correct Response (.05% BAC)	18.8
(.10% BAC)	20.9
Incorrect Response	29.0
Don't Know	31.2
1976	
Correct Response (.05% BAC)	21.0
(.10% BAC)	20.3
Incorrect Response	23.6
Don't Know	35.2

(1) There was a statistically significant ($t, \alpha = 0.05$) increase in the proportion of drivers interviewed who had heard of a campaign to reduce alcohol related traffic deaths in 1976 compared to 1975. This is consistent with a "fear of arrest" campaign launched early in 1976 using radio and television as the primary media.

(2) Television was predominant as the most often selected media through which persons had heard of or seen information concerning a "campaign." This was consistently true over the six yearly surveys. In 1976, however, consistent with an increase in television utilization in the "fear of arrest" campaign, a significantly greater ($t, \alpha = 0.05$) proportion of respondents mentioned television as an information source than in 1975. This was also true for radio which showed a statistically significant ($t, \alpha = 0.05$) increase in the proportion of persons mentioning it in 1976 compared to 1975. Note that local newspapers tended to be mentioned with decreasing frequency since 1972. This decrease is highly significant and can be attributed in part to the decrease in "newsworthiness" and consequent reduction in the number of articles concerning the project over time.

(3) A statistically significant ($t, \alpha = 0.05$) increase in the percentage of drivers who had heard of the term "BAC" or Blood Alcohol Concentration between 1971 and 1976. There was no significant change between 1975 and 1976, however.

(4) A statistically significant increase ($\chi^2, \alpha = 0.05$) in the number of drivers who knew the legal definition (BAC required) of DUI in the State of Oklahoma (1971 vs. any ASAP operational year). Note that some confusion exists in the 1972 through 1976 data since an Oklahoma State statute passed in early 1972 defines .05% BAC as prima facie evidence for the charge of Driving While Impaired and .10% BAC as prima facie evidence of Driving Under the Influence. In 1971, only Driving Under the Influence with a prima facie BAC of .15% was covered under the implied consent law. It is of interest to note that only 9.3% of those responding in 1971 were able to give a correct legal definition for DUI while over 41% were able to do so in 1976.

Seventy-nine percent of the drivers interviewed in 1971 felt that "drivers who have been drinking excessively" were one of the two greatest causes of automobile accidents. In 1972 through 1976, this percentage had a range of 80 to 95%.

Table 19 provides some indication of public sentiment towards various actions that could be taken to help neutralize the effects of problem drinking drivers.

In 1974, a statistically significant ($t, \alpha = 0.05$) increase in the proportion of individuals who felt that police using random road checks or breath tests prior

TABLE 19: Roadside Survey - Constitutional Rights
Question and Responses

Question	1972 % Yes	1973 % Yes	1974 % Yes	1975 % Yes	1976 % Yes
Do you feel these measures violate any constitutional rights? (Multiple Responses) (Yes - Disapproving)					
1. Having convicted drinking drivers use a pill which causes them to be sick if they drink alcohol	48.9	52.8	41.6	48.4	54.1
2. Police using random road checks to find drivers who have been drinking	10.7	11.5	26.5	15.3	16.2
3. Police using breath tests prior to arrest	15.2	15.4	28.9	18.3	15.2
4. Allowing a police agency to search any or all of the following: health records, court records, credit rating checks, employment records--in order to identify a "problem drinker"	43.9	48.5	48.4	46.6	46.9

to arrest violated their constitutional rights occurred compared to both 1972 and 1973 data. This response against the use of increased police powers in searching out and apprehending the impaired drinking driver abated significantly ($t, \alpha = 0.05$) in 1975 and 1976 but remained substantially above 1972-1973 levels. In both 1975 and 1976 in excess of 80% of the individuals interviewed felt that random road checks or pre-arrest breath tests would not violate their constitutional rights. This is particularly significant though it is not known whether a similar percentage would actually support legislation to effect pre-arrest tests or the use of random road checks by police.

To supplement data generated as a result of the roadside surveys, four telephone surveys of Oklahoma City residents were conducted. The telephone surveys to be discussed in this section were completed in May 1975 and 1976, November 1975 and December 1976. A total of 557 interviews were conducted in May 1975, while 504 interviews were completed in November 1975, 514 in May 1976 and 500 in December 1976. Some data comparisons are given below:

(1) In the December 1976 survey, of 498 responding, 50.6% thought drunk driving was an extremely important problem. This compares with 58.1% (N=513) in May 1976 and 55.5% (N=548) and 53.4% (N=498) in the May and November 1975 surveys respectively. The difference is not statistically significant ($\alpha = 0.05$).

(2) Also in December 1976, 69.2% of 91 persons who had recently been in a situation where a drunk individual was about to drive tried to prevent him from doing so. This compares with 59.6% in May 1976 and 71.3% and 59.6% of persons in a similar situation who were interviewed in the May and November 1975 surveys respectively.

(3) Of those interviewed who were asked whether they recalled seeing or hearing advertising concerning drinking and driving, 87.2% responded affirmatively in December 1976 compared to 84.1% who responded in the affirmative in May 1976. This is a continuation of a significant trend with 74.4% and 78.3% responding affirmatively in May and November 1975.

(4) Of those interviewed who were asked whether as a result of seeing this advertising, they would be likely to take some kind of action in a drinking situation that they had not taken before, 51.6% responded affirmatively in the May 1976 survey. This compares to 56.6% and 53.4% in the May and November 1975 surveys respectively.

(5) Sixty-four percent of those responding in December 1976 (N=188) were either "extremely" or "very" likely to agree ahead of time that when going

to a party with another person, one would limit the drinking of alcoholic beverages and drive home.

(6) The "informed exposure group" as described in "3" of this section responded to the statements contained in Table 21 on the following page. In general the responses indicate a trend toward both a better informed population concerning "myths" about alcohol and a more favorable attitude concerning responsibilities in drinking-driving situations.

(7) Television has emerged as the primary media for the transmission and reception of ASAP information. In excess of 80% of those interviewed who knew about ASAP gained that information from television, as shown in the following table:

TABLE 20: Indicated Sources of ASAP Information Obtained
In the May & November 1975, and May & December 1976
Telephone Surveys (Multiple Responses Permitted)

SOURCE	MAY 1975 RESPONSES N=116		NOV. 1975 RESPONSES N=137		MAY 1976 RESPONSES N=164		DEC. 1976 RESPONSES N=162	
	NO.	%	NO.	%	NO.	%	NO.	%
Radio	31	26.7	29	21.2	44	26.8	46	28.4
Magazine	6	5.2	17	12.4	9	5.4	13	8.0
Newspaper	21	18.1	20	14.6	33	20.1	28	17.3
Television	101	87.0	114	83.2	141	86.0	150	92.6
Billboards, Posters	30	25.8	22	16.0	22	13.4	10	6.2

b. Driver Behavior. Data concerning the blood alcohol concentrations (BAC) of those interviewed in roadside surveys over the past six years are given in Tables 22 and 23. Note that the percentages of persons interviewed who were found to have a BAC in excess of 100 mg.% (.10%) during "late weekday" periods was significantly lower in 1976 over both the prior operational year and the baseline year (1971) ($t, \alpha = .05$). Respondents found to have a blood alcohol concentration between 50 and 90 mg.% were significantly lower in the baseline year (1971) than in 1976.

TABLE 21: Knowledge and Attitudes Toward the Use of
Alcoholic Beverages 1975 - 1976

STATEMENT REGARDING ALCOHOLIC BEVERAGES	MONTH	% STRONGLY AGREE	% AGREE	% DISAGREE	% STRONGLY DISAGREE	% DON'T KNOW
A can of beer is less intoxicating than a drink of liquor.	May '75	3.1	44.2	36.2	3.1	12.9
	Nov. '75	1.7	46.9	40.9	6.3	5.1
	May '76	4.0	45.4	42.3	6.1	2.0
	Dec. '76	4.8	36.2	50.0	7.4	1.6
Black coffee will sober you up.	May '75	0.6	21.5	56.4	6.7	14.7
	Nov. '75	0.0	18.8	68.8	8.5	4.0
	May '76	0.5	16.3	47.4	30.6	0.0
	Dec. '76	2.1	22.8	57.4	76.5	1.1
It is a person's responsibility to stop a friend or relative from driving drunk.	May '75	35.6	59.5	3.1	0.0	1.8
	Nov. '75	30.1	68.2	1.1	0.0	0.6
	May '76	56.6	41.3	1.5	0.5	0.0
	Dec. '76	49.5	46.8	1.6	0.5	1.6
One should even use force to stop a friend or relative from driving drunk.	May '75	19.0	57.7	13.5	3.7	6.1
	Nov. '75	19.9	60.8	14.8	1.7	2.8
	May '76	29.1	55.6	12.2	2.6	0.5
	Dec. '76	26.6	38.5	12.8	1.1	1.1
When a person drinks, his walking and speaking show how he can drive more than the amount consumed.	May. '75	4.9	39.9	38.0	6.7	10.4
	Nov. '75	2.3	50.6	39.2	4.5	3.4
	May '76	6.1	41.8	34.7	11.2	6.1
	Dec. '76	9.0	46.2	35.1	8.5	1.1
A 4 ounce glass of wine is less intoxi- cating than a 1 ounce glass of liquor.	May '75	1.2	23.9	50.0	1.2	22.7
	Nov. '75	0.0	35.2	46.6	5.1	13.1
	May '76	1.0	22.4	45.4	7.1	24.0
	Dec. '76	1.1	31.4	55.3	6.9	5.3

TABLE 22:

Percentage of roadside survey respondents that were found to have blood alcohol concentration between .05 and .09 (50 and 90 mg. %)

	1971	1972	1973	1974	1975	1976
Early Weekday	2.5%	2.1%	2.1%	1.2%	3.3%	2.5%
Early Weekend	1.7%	2.6%	2.5%	4.0%	3.1%	3.2%
Late Weekday	9.0%	8.3%	7.8%	5.0%	10.1%	8.4%
Late Weekend	5.8%	11.1%	9.9%	9.4%	11.3%	9.8%

TABLE 23:

Percentage of roadside survey respondents that were found to have a blood alcohol concentration equal to or greater than .10 (100 mg. %)

	1971	1972	1973	1974	1975	1976
Early Weekday	0.6%	1.2%	1.2%	1.8%	1.4%	1.9%
Early Weekend	1.0%	1.3%	1.5%	2.1%	2.2%	1.8%
Late Weekday	5.5%	3.3%	4.2%	3.9%	7.1%	1.9%
Late Weekend	6.2%	3.2%	3.0%	3.2%	1.0%	4.9%

	1971	1972	1973	1974	1975	1976
BAC Test Refusals	2.6%	0.5%	0.5%	0.9%	0%	1.7%

NOTE: Weekday refers to Monday through Thursday

Weekend refers to Friday through Sunday

Early hours are 6:00 P.M. - 10:00 P.M.

Late hours are 11:00 P.M. - 3:00 A.M.

Note that the "late weekend" high BAC group increased significantly (t , $\alpha = .05$) during 1976 compared to 1975, but the 1976 level is still lower (non-significant, z , $\alpha = .05$) than the 1971 baseline year. No change in the percentage of respondents with BACs between 50 and 90 mg.% was found when 1971 - 1976 data were compared. Since no consistent trends are evident within the data, it becomes difficult to say with any high degree of certainty that easily identifiable drinking/driving behavioral changes in the population did occur during the ASAP operational period. It appears, however, that there has been a tendency for drivers on the highway during late hours to have a lower BAC during the ASAP operational period than 1971.

c. Total Accidents and Injury Accidents. Estimates in the highway safety literature indicate that only 10 - 15% of property damage traffic accidents and 15 - 20 % of injury traffic accidents are alcohol related. Since the ASAP program is intended to impact primarily alcohol related accidents, even a significant reduction in those accidents would not provide a large change in the totals. This is not true in the case of alcohol related fatalities, however, since over 50% of fatal traffic accidents are alcohol related.

A presentation of injury accidents and total accidents by quarter is given in Table 24. Injury accident data for Q1-71 is highly suspect as to its comparability with other data. The magnitude of the number, when combined with the past five years' experience which have invariably shown the first quarter of each calendar year to be among the lowest injury accident frequencies for any other quarter in that year, indicates a probable error. Correction of the data from the data source cannot be made at this time. An arbitrary reduction of 200 injury accidents in all of the baseline year, 1971, seems reasonable and presents a conservative, more realistic, estimate of baseline year Q1 accident experience. Given that this reduction is made, there is a statistically significant difference (χ^2 , $\alpha = .05$) between the frequency of injury accidents in 1975 compared to 1971. A non-significant decline in injury accidents in 1975 compared to 1971. A non-significant decline in injury accidents occurred between 1973 and 1974. In 1975, however, a significantly greater number of injury accidents occurred than in 1974 (χ^2 , $\alpha = .05$). This level of injury accidents has remained essentially the same in 1976. Also, a significant (χ^2 , $\alpha = .05$) decline in total accidents occurred between 1973 and 1974. This was followed by a significant (χ^2 , $\alpha = .05$) increase in the total number of traffic accidents in Oklahoma City in 1975 compared to 1974, however. Total accidents in Oklahoma City in 1976 were below the 1975 level, but not significantly so. The question of increases or decreases in accidents cannot be addressed adequately

TABLE 24: Total Reported Accidents and Reported Injury Accidents
by Quarter - 1971 - 1976

	INJURY ACCIDENTS						TOTAL ACCIDENTS					
QUARTER	1971 (Baseline)	1972	1973	1974	1975	1976	1971 (Baseline)	1972	1973	1974	1975	1976
Q1	974	604	644	661	812	855	3361	3523	3732	3227	3763	3401
Q2	787	762	859	793	981	812	3645	3805	4049	3562	3961	3997
Q3	825	772	827	803	866	927	3816	3727	3866	3739	3902	3778
Q4	872	798	803	829	859	934	4084	4242	3990	3863	3909	3642
TOTAL	3458	2936	3133	3086	3518	3528	14906	15297	15637	14391	15535	14818

without exposure data.

For the purposes of the analysis in this paper, it is convenient to define a parameter called the "Gasoline Unit" or GU. One GU is the equivalent of approximately 15.2 gallons of gasoline. Gasoline units consumed statewide in any given year can be determined from state gasoline tax receipts. One GU sold produces \$1 in tax revenue (at a rate of 6.58¢ per gallon).

The number of gasoline units consumed or gasoline tax units collected may be considered as a rough measure of motor vehicle risk exposure.

The City of Tulsa, Oklahoma will be used for the purpose of comparison in this section. If we assume that the Oklahoma City and Tulsa Standard Metropolitan Statistical Areas (SMSA) have the same proportion of the Oklahoma populations as they had in 1970, it is possible to estimate the GU's consumed in each SMSA. Further, SMSA population is assumed to be more closely related to exposure in both Oklahoma City and Tulsa than "city limit" population.

Table 25 indicates the estimated GU consumption for both Tulsa and Oklahoma during the 1971 - 1976 period.

TABLE 25: Estimated GU Consumption in Oklahoma City and Tulsa 1971 through 1976

YEAR	OKLAHOMA CITY	TULSA
1971	21,837,196	16,251,200
1972	23,131,935	17,214,744
1973	24,367,491	18,134,241
1974	24,627,816	18,327,974
1975	25,587,800	19,046,423
1976	27,077,146	20,150,618

Table 26 on the following page indicates total accidents and injury accidents per 10^6 GU for both Oklahoma City and Tulsa in 1971 through 1976.

Injury accidents and total accidents per 10^6 GU represent relative accident rates based on estimated exposure. Note that the injury accident rates in Oklahoma City decreased in 1976 from 1975. This decrease was non-significant. A slightly smaller (also non-significant) decrease in the Tulsa injury rate between 1975 and 1976 was noted. Over the years, Tulsa has had a significantly lower injury accident rate than Oklahoma City. This is surprising if one considers that Oklahoma City has had a significantly lower total accident rate over the 1971 - 1976 period.

TABLE 26: Injury and Total Accidents per 10^6 GU for Oklahoma City and Tulsa
1971 through 1976

	OKLAHOMA CITY				TULSA			
Year	Injury Accidents	<u>Injury Accidents</u> 10^6 GU	Total Accidents	<u>Total Accidents</u> 10^6 GU	Injury Accidents	<u>Injury Accidents</u> 10^6 GU	Total Accidents	<u>Total Accidents</u> 10^6 GU
1971	3258	149.19	14,906	682.60	1960	120.60	14,336	882.15
1972	2936	126.92	15,297	661.29	1624	94.34	13,606	837.20
1973	3133	128.57	15,637	641.72	1981	109.24	13,972	770.48
1974	3086	125.31	14,391	584.34	1930	105.30	13,254	723.16
1975	3518	137.40	15,535	607.13	2183	114.89	14,360	755.79
1976	3528	130.29	14,818	547.25	2271	112.70	14,506	719.88

One might hypothesize that higher speeds and more miles of rural roads in Oklahoma City than in Tulsa may be a contributing factor. The Tulsa population may be involved in more low speed (high density traffic) "fender benders" than Oklahoma City which would tend to account for their higher total accident rate.

Both injury and total accident rates in Oklahoma City and Tulsa were lower in 1976 than in the baseline year of 1971. Both Tulsa and Oklahoma City have had considerable highway safety program activity during the ASAP operational period. Tulsa has had a FARE program and a federally funded (402) ASAP program which began in 1974. Therefore, comparisons for ASAP evaluation purposes cannot be made.

Comparability of the Tulsa and Oklahoma City is further complicated by differences in land area, miles of highway and population density.

d. Fatal Accidents. Fatal traffic accidents in Oklahoma City by month, quarter and year with indications of alcohol involvement are given in Table 27.

Some indication of baseline alcohol involvement for 1971 can be gleaned from the data contained in Table 28 collected by the Oklahoma City Police Department. Please note that data was collected for only the first six months of 1971.

The data in Table 28 indicates that there were 21 alcohol involved fatal accidents out of a total of 28 for which some indications of alcohol/non-alcohol involvement could be deduced in the first six months of 1971. This represents a 75% involvement in alcohol investigated fatal accident cases. It should be pointed out again here, that data for the second half of 1971 is not available and, therefore, alcohol involvement for the full year is not known. Quarterly breakdowns of alcohol involvement for the half year are not known.

TABLE 28: Alcohol Involvement and Fatal Accidents
Six Months Ending June 30, 1971

TYPE OF ACCIDENT	TOTAL NUMBER OF ACCIDENTS	NUMBER OF ALCOHOL-INVOLVED ACCIDENTS	NUMBER OF NON-ALCOHOL INVOLVED ACCIDENTS	NUMBER OF ACCIDENTS FOR WHICH ALCOHOL-INVOLVEMENT WAS UNKNOWN
Single Vehicle (Pedestrian Excluded)	16	8	5	3
Multiple Vehicle	19	10	2	7
Pedestrian	4	3	0	1
TOTALS	39	21	7	11

TABLE 27: Fatal Accidents and Alcohol-Related Accidents by Month and Quarter
for 1970 through 1976

MONTH	1970	1971	1972			1973			1974			1975			1976		
			TFA	A/R	UNK.	TFA	A/R	UNK.	TFA	A/R	UNK.	TFA	A/R	UNK.	TFA	A/R	UNK.
Jan.	3	9	5	3	2	5	2	0	9	4	0	5	4	0	4	3	0
Feb.	2	1	4	3	0	6	2	0	6	2	1	8	4	0	5	1	0
Mar.	5	7	5	1	3	4	2	0	2	1	0	10	3	0	5	1	1
Apr.	7	8	13	7	1	5	2	0	9	1	0	4	1	1	5	1	0
May	5	6	10	7	0	6	4	0	3	0	0	8	5	0	9	3	0
June	8	8	6	3	1	5	1	1	6	5	0	1	0	0	9	7	1
July	9	6	4	1	0	9	2	0	4	3	1	6	3	0	2	2	0
Aug.	11	8	6	2	1	7	2	2	4	3	0	11	5	3	8	2	3
Sept.	4	2	7	3	1	5	0	1	7	2	0	6	1	0	8	5	1
Oct.	6	6	8	3	1	13	3	0	9	4	0	8	7	0	7	3	1
Nov.	2	4	9	3	0	7	3	1	8	2	0	9	4	1	4	0	0
Dec.	7	6	4	4	0	6	4	0	4	2	0	6	0	0	9	4	0
1st. Qtr.	10	17	14	7	5	15	6	0	17	7	1	23	11	1	14	5	1
2nd Qtr.	20	22	29	17	2	16	7	1	18	6	0	13	6	0	23	11	1
3rd Qtr.	24	16	17	6	2	21	4	3	15	8	1	23	9	3	18	9	4
4th Qtr.	15	16	21	10	1	26	10	1	21	8	0	23	11	1	20	7	1
Calendar Year	69	71	81	40	10	78	27	5	71	29	2	82	37	5	75	32	7

TFA = Total Fatal Accidents

A/R = Alcohol-Related

Unk. = Unknown

An in-depth investigation of fatal traffic accidents which occurred in the years 1971 through 1976 indicated that a significant number of the alcohol-related fatal accidents would not have been impacted by an ASAP program. These "non-impactable" fatal accidents were of two distinct types: a) a pedestrian fatal where the pedestrian, but not the driver, had been drinking and b) an A/R fatal accident where all of the drivers who had been drinking were either out of state residents or listed their home addresses as out of the Oklahoma City metropolitan area.

The results of this investigation are given in Table 29 which follows:

TABLE 29: Non-Impactable and Impactable A/R Fatal Accidents, Oklahoma City 1971 - 1976

YEAR	IMPACTABLE A/R* FATAL ACCIDENTS	NON-IMPACTABLE A/R** FATAL ACCIDENTS OUT OF AREA		NON A/R	UNKNOWN	TOTAL
		PEDES- TRIAN	DRIVER			
1971	39 (est)	0	3	29	N/A	71
1972	35	1	4	31	10	81
1973	25	1	1	46	5	78
1974	24	2	3	40	2	71
1975	27	9	1	40	5	82
1976	28	2	2	36	7	75

* Impactable A/R fatal accidents represent those fatal accidents where one or more drivers had been drinking where the drinking driver(s) reside in the Oklahoma City Metropolitan Area.

**Non-Impactable A/R fatal accidents are those described above that could not reasonably be expected to be affected by the Oklahoma City ASAP as it currently exists.

Note that 1973 - 1976 impactable A/R fatal accidents have remained essentially constant and are substantially below the 1971 estimate or 1972 actual impactable A/R fatal accidents. The reduction in fatal A/R accidents between 1971 and the years 1973, 1974, 1975 and 1976 is significant (χ^2 , $\alpha = .05$). In 1976 there were 7 A/R pedestrian fatal accidents. Two of those involved drinking pedestrians and non-alcohol involved drivers.

In a previous section of this report, a method of determining estimated population exposure was derived and the concept of "Gasoline Units" or GU was discussed. Re-

that one GU represents approximately 15.2 gallons of gasoline. Table 20 which follows indicates the fatal accident picture as it is adjusted for population exposure in both Tulsa and Oklahoma City.

TABLE 30: Fatal Accidents per 10^6 GU -
Oklahoma City and Tulsa 1971 - 1976

YEAR	A/R IMPACTABLE	OKLAHOMA CITY			TULSA TOTAL
		A/R TOTAL	NON A/R	TOTAL	
1971	1.786	1.923	1.328	3.251	2.215
1972	1.513	1.729	1.772	3.501	2.382
1973	1.026	1.108	2.093	3.201	2.040
1974	0.975	1.178	1.705	2.883	2.237
1975	1.055	1.446	1.759	3.204	2.000
1976	1.034	1.182	1.588	2.770	1.787

A statistically significant downward shift in impactable alcohol related fatal accidents per 10^6 GU occurred in 1973 in Oklahoma City and has remained relatively stable over the 1973 - 1976 period. Non-alcohol related fatal accidents per 10^6 GU were down slightly in 1976 from 1975 in Oklahoma City. The increase in total fatal accidents and total alcohol related accidents per 10^6 GU in Oklahoma City between 1974 and 1975 is due in its entirety to the unusually high number of alcohol related pedestrian fatal accidents that occurred in 1975 where the pedestrian, not the driver, had been drinking. Total fatal accidents per 10^6 GU in both Oklahoma City and Tulsa during 1976 were at the lowest level of the six years for which data was examined. The impactable A/R fatal accident rate per 10^6 GU in Oklahoma City has decreased approximately 42% since 1971. This is of tremendous practical significance.

Table 31 gives an indication of the relationship between type of accident and alcohol involvement in fatal traffic crashes in Oklahoma City during 1976. From this data the following percentages were computed.

(1) Almost 39% of the pedestrian accidents were alcohol related. This proportion is significantly lower (χ^2 , $\alpha = .05$) than 1975 when 63% of the pedestrian accidents

TABLE 31: Type of Accident and Alcohol Involvement
Fatal Traffic Accidents - Oklahoma City 1976

TYPE	PEDESTRIAN	CYCLE- SINGLE	CAR- SINGLE	CAR- CAR	CYCLE- MULTI	CAR- TRUCK	CAR- BICYCLE	CAR- TRAIN	TOTAL
A/R	7	1	15	9	0	0	0	0	32
Non-A/R	9	2	5	15	3	1	0	1	36
Unknown	2	1	1	2	0	0	1	0	7
TOTAL:	18	4	21	26	3	1	1	1	75

were alcohol related. The 1975 result was primarily due to a large number of fatal accidents where a pedestrian had been drinking while the involved driver had not. Nine out of ten of the pedestrians involved in alcohol related fatal accidents in 1975 had been drinking heavily while there was no indication of alcohol involvement with the drivers of the vehicles involved. Only two of the A/R pedestrian fatal accidents fell in that category in 1976.

(2) Seventy-one percent of all single automobile fatal accidents during 1976 were alcohol related. This compares to 69% in 1974 and 43% in 1975.

(3) Thirty-five percent of multi-vehicle (car-car) fatal accidents in Oklahoma City during 1976 were alcohol involved. This is not significantly different from 1975 when 46% of the car-car fatal accidents were alcohol involved.

(4) None of the multi-vehicle fatal accidents where a large weight disparity between colliding bodies may be presumed (cycle-multi, car-truck, car-bicycle, car-train) were alcohol involved. This is not a statistically significant difference ($t, \alpha = .05$) from the 1975 experience where 20% were alcohol related.

e. Cost Effectiveness Analysis of A/R Fatal Accidents

(1) Assumptions.

(a) The exposure adjusted variable value "impactable A/R fatal accident per 10^6 GU" for 1971 represents the mean value of a distribution of unknown variance.

(b) Similar statement can be made utilizing the values of "impactable A/R fatal accidents per 10^6 GU" for 1972 through 1976.

(c) The variance of the distribution, while unknown, is assumed stationary over time.

(d) The value of each fatal accident "prevented" is \$200,000.

(2) Analysis. If the A/R fatal accidents per GU in 1971 are assumed to be an indication of what one might have expected to happen in 1976 if no ASAP were present in Oklahoma City, the following results are obtained.

1976 GU Consumption

$$1.786 \text{ }^{1A/R \text{ FA}}_{/10^6 \text{ GU}} \times (27.1 \times 10^6 \text{ GU}) = 48.4 \text{ Impactable A/R Fatal Accidents}$$

The forty-eight fatal accidents obtained by this simple calculation represents an exposure adjusted estimate of 1976 experience if no ASAP had been present and the A/R fatal traffic accident rate remained unchanged from 1971. An estimate,

then, of expected potential societal costs not incurred due to a reduction in A/R fatal accidents over baseline levels can be computed as:

$$\$200,000 (48-28) = \$4,000,000$$

Note that this estimated total cost savings for 1976 is much greater than the cost of the ASAP project in Oklahoma City for 1976.

A similar set of computations on adjusted 1975 and 1974 data indicates an estimated total cost savings of \$3,800,000 and \$4,000,000 respectively, while the data for 1973 indicates an estimated total saving of \$3,600,000. No computation can be made for 1972, since the fatal accidents per 10^6 GU in 1972 is not statistically significantly lower (although the trend was established) than the 1971 baseline data (see Table 30).

It must be clearly stated here that the above calculations are valid only if the stated assumptions are reasonable. The assumption of stationary variance is particularly suspect. Nonetheless, the expected values of the costs not incurred due to the decrease in A/R fatal accidents during the ASAP operational period are significant.

6. THE FATALLY INJURED DRIVER. Blood Alcohol Concentration data for drivers fatally injured may be considered as a measure of ASAP project effectiveness. Care should be exercised in the use of BAC data taken only on drivers since it does not follow that a multi-vehicle collision in which only one of the drivers is killed, with BAC = .00 isn't alcohol involved if the driver who survives is not also tested for BAC. Nor does it account for accidents in which pedestrian or passenger deaths occur. Therefore, utilizing BAC only for drivers killed (if all BACs are obtained) will always give a conservative estimate of alcohol involvement in fatal accidents. With this in mind, a discussion of the procedures, problems, and laws involving the removal of BAC specimens from fatally injured persons is in order.

The police are required to notify the medical examiner immediately of every traffic fatality. The medical examiner then either goes to the accident scene or wherever the corpse has been transported. At his discretion, the medical examiner then removes a blood sample directly from the heart. The sample is analyzed using a gas chromatograph and the results are forwarded to the police department. The procedure for obtaining BACs in Oklahoma then is rather a straight-forward one.

Pertinent laws relating to the removal of blood from corpses for analysis involve the following:

1. Police are required to report deaths.

2. Medical examiner is required to investigate all medically unattended deaths and suspicious medically attended deaths.

3. Medical examiners are authorized to remove any blood (or other) samples and/or autopsy in the course of that required investigation.

4. Depth of the investigation is left to the discretion of the medical examiner.

5. The medical examiner may collect blood specimens from deceased persons without autopsy authorization in any case.

Obviously, there appears to be no legal barrier to the collection of blood specimens for BAC analysis. There are problems in actually obtaining specimens, however. Generally, local physicians are designated by the state medical examiner as medical examiners in each county. The fee paid to a medical examiner is \$15 for each investigation. There is no rigid control over the local medical examiners and compensation is certainly no incentive. Some traffic accidents involving fatalities occur at odd hours, further compounding the problem. Drivers who die more than four hours after the accident cannot be validly tested for BAC. Finally, individual discretion on the part of local medical examiners produces a tendency not to sample the very young, the elderly and in some cases pedestrians.

Definite improvements in blood-sample policies and guidelines set by the state medical examiner occurred during the first year of ASAP operation and have generally remained constant since that time. The current policy is to collect blood samples on all traffic fatalities regardless of age or circumstance in the vehicle.

Available BAC data on drivers killed in Oklahoma City are presented in several different formats in the following section.

a. Data on Fatally Injured Drivers. Data will be presented in this section for the Oklahoma City ASAP covering calendar year 1976. Where appropriate, data from prior years is also presented. The data is addressed in several different configurations:

- (1) BAC distribution of fatally injured drivers.
- (2) Driver deaths by sex and race of driver and indication of positive BAC.
- (3) Drivers killed by age group.
- (4) BAC for drivers killed by day of week, time of day.
- (5) Traffic record data on deceased drivers.

The BAC distribution for fatally injured drivers is given in Table 32-A on the following page.

TABLE 32-A: BAC Distribution of Fatally Injured Drivers, Oklahoma City
1972-1976

BAC		.00	.01-.04	.05-.09	.10-.14	.15-.19	.20-.24	.25-.29	.30+	Unk.
No. of Drivers	1972	28	1	2	4	5	4	2	2	12
	1973	23	1	1	1	4	2	6	2	9
	1974	12	0	7	6	3	2	1	0	12
	1975	18	3	0	2	3	2	1	3	11
	1976	16	3	2	5	3	3	1	1	7

(1) BAC Distributions of Fatally Injured Drivers. A total of 18 drivers out of 34 (53%) tested for BAC during 1976 showed a positive BAC (see Table 32-A). This fraction is not significantly different from 43% determined in 1973, 53% in 1974 and 44% in 1975 ($t, \alpha = .05$). Further, the conditional BAC distribution ($BAC|BAC > 0$) in 1975 was not significantly different from any of the comparable prior year distributions ($KS, \alpha = .05$). Since similar distribution data for pre-ASAP periods was not available, it is not possible to determine any ASAP effects on the BAC distribution of fatally injured drivers. One must conclude that there has been no detectable change in the BAC distribution of fatally injured drivers during the ASAP operational period. This is not to imply that no pre-ASAP or inter-ASAP period changes occurred, but merely that none could be detected given the relatively small number of fatally injured drivers in Oklahoma City.

Some interesting insights into the relationship of BAC and fatal accident risk can be gleaned from the data in Table 32 and the roadside survey BAC data.

Combined data of fatally injured drivers and the roadside surveys for the five Oklahoma City ASAP operational years 1971 through 1976 is contained in Table 32-B. If the percent fatals are divided by the percent population as indicated by Roadside Survey data for each BAC range, a relative risk of fatal crash is obtained. This relative risk can then be normalized so that the zero BAC driving population has a relative risk of fatal crash equal to unity. This relative and normalized risk data is contained in Table 32-C.

The normalized risk data has several data points which are of interest and should be addressed. The data indicates that, on the average, a driver with a BAC between .01 and .04% (10 - 40 mg.%) was about half as likely to be involved in a

TABLE 32-B: Combined Data on Fatally Injured Drivers
and Roadside Survey Data
1972-1976

BAC RANGE	OKLAHOMA CITY FATALLY INJURED DRIVERS 1972-1976		DRIVERS INTERVIEWED ROADSIDE SURVEY - OKC 1972-1976	
	N	%	N	%
.00	106	53.81	5105	80.75
.01-.04	8	4.06	699	11.06
.05-.09	12	6.09	363	5.74
.10-.14	18	9.14	103	1.63
.15-.19	19	9.64	42	0.66
≥ .20	34	17.25	10	0.16
TOTALS	197	100.00	6322	100.00

TABLE 32-C: Relative and Normalized Relative Risk
of Fatal Crash for Various Driver Blood Alcohol Concentrations
Oklahoma City 1972-1976

BAC RANGE	RELATIVE RISK OF FATAL CRASH	NORMALIZED RELATIVE RISK OF FATAL CRASH
.00	.6663	1.000
.01-.04	.3670	.5541
.05-.09	1.061	1.602
.10-.14	5.607	8.467
.15-.19	14.606	22.053
≥ .20	107.81	162.78

fatal accident as a driver with a zero BAC. This data is consistent with laboratory performance studies which indicated some performance improvement on psychomotor tasks in the low BAC (20 - 30 mg.%) range compared with the zero BAC performance level. The reasons given for this phenomenon have included both a realization of subject anxiety level and subject compensation (they try harder) under low BAC level. In the case of drivers on the highway who have ingested small amounts of alcohol and are most probably casual social drinkers, one might hypothesize a compensation (try harder) phenomenon brought about by both fear of arrest and an altered state of consciousness. Small amounts of alcohol cannot be said to increase the basic ability to perform in the driving task. It appears, however, that low BAC levels are related to a more careful mode of driving. One might conjecture that casual social drinkers, having ingested small amounts (1 and 2 one-ounce, 100 proof equivalent drinks) of alcohol, would be more careful in their driving performance because of a fear of arrest or accident. That is, more attention would be paid to such things as vehicle speed, stop signs, actions of other drivers, lane changes, and thereby reduce the chances of accident involvement, particularly serious accident involvement. Table 32-B indicates that only 0.16% of the drivers interviewed in the roadside surveys in Oklahoma City had a BAC in excess of .20% (200 mg.%) while 17.25% of the drivers killed in auto accidents and tested were found to have a BAC above .20%. The relative risk of a fatal accident for an individual driving on the street in Oklahoma City with a BAC above .20% was determined to be about 162 times that of a driver with a zero BAC. This empirically determined high BAC risk is probably inflated somewhat by a hypothesized disproportionate breathalyzer refusal rate for high BAC drivers interviewed during the roadside survey. Even though the refusal rate was only 1.5%, the number of drivers interviewed that had BACs in excess of .20% was an order of magnitude smaller. The vast majority of persons (perhaps 90%) interviewed who refused to submit to a breathalyzer test did not appear to be alcohol impaired in either psychomotor or reasoning abilities. If the remaining 10% were all assumed to have a BAC in excess of .20%, the relative risk of a fatal accident for drivers with a BAC greater than .20% would still be over 80 times the zero BAC driver.

(2) Fatally Injured Drivers by Race and Sex. Data is given in Table 33 on the following page. There is a statistically significant difference ($t, \alpha = .05$) between the proportion of Caucasian male drivers killed that were alcohol involved and the alcohol involvement in the Caucasian female drivers killed. None of the other racial-sex groups showed any statistically significant differences in proportion of alcohol involvement where tests could be performed. If one considers the marginal

TABLE 33: Sex and Race of Drivers Killed in Oklahoma City 1976

SEX	RACE				TOTAL
	CAUCASIAN	BLACK	INDIAN	ORIENTAL	
MALE	9 Non A/R	3 Non A/R	0 Non A/R	1 Non A/R	13 Non A/R
	11 A/R	4 A/R	1 A/R	0 A/R	15 A/R
	4 Unknown	1 Unknown	0 Unknown	0 Unknown	7 Unknown
FEMALE	5 Non A/R	0 Non A/R	0 Non A/R	0 Non A/R	5 Non A/R
	2 A/R	0 A/R	0 A/R	0 A/R	0 A/R
	0 Unknown	0 Unknown	0 Unknown	0 Unknown	0 Unknown
TOTAL	14 Non A/R	3 Non A/R	0 Non A/R	1 Non A/R	18 Non A/R
	13 A/R	4 A/R	1 A/R	0 A/R	18 A/R
	4 Unknown	1 Unknown	0 Unknown	0 Unknown	5 Unknown

data, the proportion of male drivers killed that were alcohol involved was significantly greater ($t, \alpha = .05$) than the proportion of female drivers killed that were alcohol-involved. The results and conclusions stated above for 1976 are essentially identical to those in 1975.

(3) Drivers Killed by Age and Alcohol Involvement. Table 34 below indicates alcohol involvement in drivers fatally injured by ten-year age groups.

TABLE 34: Fatally Injured Drivers by Age and Alcohol Involvement
Oklahoma City 1975 and 1976 Combined

AGE	A/R	NON A/R	UNKNOWN	TOTALS
< 20	8	12	3	23
20-29	15	7	4	26
30-39	2	9	3	14
40-49	5	2	2	9
50-59	2	1	1	4
> 60	0	5	3	8
TOTAL	32	36	16	84

The data become more meaningful for analysis purposes if both 1975 and 1976 data are combined. Statistical analyses revealed no significant differences in the data between years ($\chi^2, \alpha = .05$). Since there is no statistically significant difference in the 40 - 49 and 50 - 59 age group data, it is both convenient and appropriate to combine the data for those age groups to improve the quality of the analysis. Age data from the roadside surveys for 1975 and 1976 is given in Table as an estimate of driver exposure by age group. Table 35 is on the following page.

There is no significant difference between the age distribution for A/R fatally injured drivers and the age distribution of the driving population, (KS, $\alpha = .05$). Consistency in the data over the past several years, however, provides substantial evidence that this difference is being masked by the relatively small number of fatalities. Similarly, there is no significant difference in the non A/R fatally injured drivers' age distribution and that of the driving population. The relative risk index is given in Table 36 on the following page.

TABLE 35: Number and Percentage of Drivers Fatally Injured by
Age Group and Alcohol Involvement
1975 and 1976

AGE	A/R	% A/R FATALS	NON A/R	% NON A/R FATALS	TOTAL* DRIVER FATALS	% TOTAL DRIVER FATALS	% OF DRIVING POPULATION
< 20	8	25%	12	33%	23	27%	16%
20-29	15	47%	7	20%	26	31%	43%
30-39	2	6%	9	25%	14	17%	16%
40-59	7	22%	3	8%	13	15%	21%
> 60	0	0	5	14%	8	10%	5%
TOTAL	32	100%	36	100%	84	100%	100%

* Includes driver fatalities whose alcohol involvement is unknown

TABLE 36: Relative Risk Index by Age - 1975 and 1976

AGE	A/R	NON A/R	TOTAL
< 20	1.6	2.1	1.7
20-29	1.1	0.5	0.7
30-39	0.4	1.6	1.1
40-59	1.0	0.7	0.7
> 60	0.0	2.8	2.0

Based on the historical data presented with all the attendant "small sample" problems, the relative risk index nonetheless presents some important insights into the data. There appears to be a tendency for drivers under 20 and over 60 years of age to have higher risk indices than other age groups in the non A/R category. This is consistent with 1974 results. The over 60 age group has consistently had a low A/R risk index. Similarly the "under 20" age group appear to have an unusually high A/R risk index.

(4) BAC for Drivers Killed by Day of Week, Time of Day. Investigation of the data indicates that the number of alcohol involved fatally injured drivers increased from four to eight during the hours of midnight - 4 AM in 1976 compared to 1975. Total A/R driver fatalities during the critical drinking hours of 8 PM - 4 AM are not significantly different in 1976 than any of the past three years. A total of nine drivers with a BAC greater than zero were fatally injured on Friday Saturday or Sunday in 1976 compared to five in 1975 and eight in 1974 and ten and 1973 and fifteen in 1972. This break in the prevailing downward trend is somewhat preplexing. It could represent a statistical aberration or perhaps indicate a real reversal in the trend. It is not possible at this time to determine which is true. See Tables 37 - 40 on the following pages.

(5) Traffic Records of Deceased Drivers. A considerable amount of effort was expended checking records both with the Oklahoma City Police Department and the Oklahoma Department of Public Safety to obtain every possible clue to the true driving record of deceased drivers. Even so, five deceased drivers' records could not be obtained (1976 data).

We have defined a driver to have a poor record if he has had two or more moving violation convictions between January, 1973 and December, 1976 or a DUI within the past ten years. Table 41-A presents the 1976 data concerning the record status of fatally injured drivers. Comparison with 1975 data (Table 41-B) yields no significant consistent trends. It was not possible to obtain exposure data concerning driving record status for the metropolitan Oklahoma City area. Since it is not possible to determine the fraction of drivers who would correspond to each of the cells in Table 41-A, it is not possible to compute relative risk indices.

7. SUMMARY. The Oklahoma City ASAP efficiency and effectiveness study for 1976 indicates a continuation and improvement of prior year performance in virtually all areas. Perhaps the most satisfying and significant result of ASAP efforts during 1976 was a decision by Oklahoma City to continue the ASAP utilizing its own funds combined with some State of Oklahoma Highway Safety funds. The project will

TABLE 37: BAC For Drivers Killed by Time of Day/Day of Week
1973

DAYS OF WEEK	TIME OF DAY						Positive BAC	Negative BAC	Unknown BAC	Total
	M - 4AM	4 - 8AM	*AM - N	N - 4 PM	4 - 8PM	8PM - M				
MONDAY	.00 .30	---	---	NT .00	.26 .00 (NT-DUI)	---	3	3	1	7
TUESDAY	.00	.26	.00	.00 NT NT	NT	.00 .00	1	5	3	9
WEDNESDAY	.13 .09 .00 .24	.00	---	.00	---	---	3	3	0	6
THURSDAY	.35 .27	.00	.00	NT	.00 NT .00	---	2	4	2	8
FRIDAY	---	.00 NT NT	.00	---	(NT-DUI)	---	1	2	2	5
SATURDAY	.15 .25	.16	---	---	.00	.04 .00	4	2	0	6
SUNDAY	.15 .15 .25	.26	.24	.00 .00	.00 NT	.00	5	4	1	10
POSITIVE BAC	11	3	1	0	3	1	19	23	9	51
NEGATIVE BAC	3	3	3	5	5	4	23			
UNKNOWN BAC	0	2	0	4	3	0	9			
TOTAL	14	8	4	9	11	5	51			

TABLE 38: BAC for Drivers Killed by Time of Day/Day of Week
1974

DAYS OF WEEK	TIME OF DAY						Positive BAC	Negative BAC	Unknown BAC	Total
	M - 4AM	4 - 8AM	8AM - N	N - 4PM	4 - 8PM	8PM - M				
MONDAY	---	.00	---	---	---	.00	0	2	0	2
TUESDAY	NT .14	.28 .00 .00	.22	NT NT .00	---	---	3	3	3	9
WEDNESDAY	---	---	---	---	NT	.18 .05	2	0	1	3
THURSDAY	NT .07	---	---	.05	.00 .10 .11 .22	.08 .00 NT	6	2	2	10
FRIDAY	---	---	NT .00	---	NT	.05.	1	1	2	4
SATURDAY	.15	NT	---	---	NT NT .00 .13	.05	3	1	3	7
SUNDAY	.00 NT - DUI .19 .05	.12	---	---	NT .00 .12	.00	4	3	1	8
POSITIVE BAC	6	2	1	1	5	5	19	---	---	---
NEGATIVE BAC	1	3	1	1	3	3	---	12	---	---
UNKNOWN BAC	2	1	1	2	5	1	---	---	12	---
TOTAL	9	6	3	4	12	9	---	---	---	43

TABLE 39: BAC for Drivers Killed by Time of Day/Day of Week
1975

DAYS OF WEEK	TIME OF DAY						Positive BAC	Negative BAC	Unknown BAC	Total
	M - 4AM	4 - 8AM	8AM - N	N - 4PM	4 - 8PM	8PM - M				
MONDAY	---	---	---	.00	---	.00	0	2	0	2
TUESDAY	.22	---	.00	.02	.02	---	3	1	0	4
WEDNESDAY	.27 NT .00	.00	---	.33	---	.00 .02 .12 .00	5	4	1	10
THURSDAY	.19 NT	.00 .31	.00 NT .00	---	---	.00	2	4	2	8
FRIDAY	---	---	---	---	.00 NT NT, NT, NT	.02 .00 .14 .22	3	2	4	9
SATURDAY	.15 .00	NT	---	---	NT .19	---	2	1	2	5
SUNDAY	.00 .00	----	.00	NT	NT	---	0	3	2	5
POSITIVE BAC	4	1	0	2	2	6	15	---	---	---
NEGATIVE BAC	4	2	4	1	1	5	---	18	---	---
UNKNOWN BAC	2	1	1	1	6	0	---	---	11	---
TOTAL	10	4	5	4	9	11	---	---	---	43

NT = No Test

TABLE 40: BAC for Drivers Killed by Time of Day/Day of Week
1976

DAYS OF WEEK	TIME OF DAY						Positive BAC	Negative BAC	Unknown BAC	TOTAL
	M - 4AM	4 - 8AM	8AM - N	N - 4PM	4 - 8PM	8PM- M				
MONDAY					NT .07 NT	.00 .23 .02	3	1	2	6
TUESDAY			NT NT	.17 NT	.00 .00	.00 00 .00 .00	1	6	3	10
WEDNESDAY	.16	.14 .00					2	1	0	3
THURSDAY	.04 .00 .10		.00		.00	.24	3	3	0	6
FRIDAY	.08	.00		.00		.28 .11	3	2	0	5
SATURDAY	.24 .16 .00 .03	.36		.13			5	1	0	6
SUNDAY	.12 .00		.00	NT	NT		1	2	2	5
POSITIVE BAC	8	2	0	2	1	5	18	16	7	41
NEGATIVE BAC	3	2	2	1	3	5	16			
UNKNOWN BAC	0	0	2	2	3	0	7			
TOTAL	11	4	4	5	7	10	41			

TABLE 41-A: Record Status of Fatally Injured Drivers - 1976

RECORD	A/R	NON A/R	UNKNOWN
Driving Record Not Poor	10	13	3
Driving Record Poor	7	1	2
Driving Record Unknown	1	4	0
TOTAL	18	18	5

TABLE 41-B: Record Status of Fatally Injured Drivers - 1975

RECORD	A/R	NON A/R	UNKNOWN
Driving Record Not Poor	6	7	9
Driving Record Poor	7	10	2
Driving Record Unknown	1	1	0
TOTAL	14	18	11

continue (essentially intact) utilizing a systems approach in its efforts to reduce the incidence of traffic accidents and fatalities caused by the alcohol impaired driver.

Some of the more important results and conclusions contained in this report are included in the following paragraphs. The text should be consulted for in-depth explanations of the results presented.

Federally (direct or indirect through the Governor's Highway Safety Office) funded Alcohol Safety Action Project enforcement personnel were responsible for a

total of 17,187 DUI arrests in Oklahoma City from January 1972 through December, 1976. This is in addition to 7,643 DUI arrests accomplished by non-ASAP Oklahoma City police officers during that same period.

In excess of 6,150 total DUI arrests were made by Oklahoma City police during calendar year 1976.

ASAP enforcement efficiency has increased dramatically during the 1972 - 1976 project operational phase. DUI arrests per patrol man-hour have increased from .052 arrests per hour in 1972 to .091 arrests per hour in 1974, while in 1976 efficiency peaked at .156 arrests per man-hour.

ASAP enforcement patrol morale has improved significantly over the past two years as a direct result of the use of volunteer overtime patrolmen for Saturday and Sunday ASAP patrol activities.

Twelve hundred eighty DUI cases were filed by Oklahoma City police as either misdemeanors or felonies in the State District Court system during 1976. These were all known DUI recidivists.

Oklahoma City Municipal Court disposed of 3,312 DUI cases in 1976 with 94.5% of those cases resulting in a conviction. Over the five year ASAP operational period the Oklahoma City Municipal Court disposed of 15,027 DUI cases with 94.9% resulting in a conviction.

Average processing time (arrest to final court disposition) for DUI cases in Oklahoma City is a measure of both performance and cooperation on the part of police, prosecution and the court. Average arrest to disposition times have decreased from 128 days in 1971 (pre-ASAP) to approximately half that time in recent years: 59 days in 1975 and 65 days in 1976.

Average blood alcohol concentration (BAC) for individuals convicted of DUI in the Oklahoma City Municipal Court has been continuously reduced during the ASAP project. In 1971 DUI suspects who were convicted as charged had an average BAC of 230 mg.%. In 1975 and 1976, the average was 170 mg.%. Similarly, DUI suspects convicted of a reduced charge had an average BAC of 160 mg.% in 1971. In 1975 and 1976 the average was 120 mg%.

The ASAP probation office conducted 5,865 pre-sentence interviews from January 1972 through December, 1976. These interviews resulted in 4,695 persons being assigned to one or more rehabilitation countermeasures. Over 58% of those so assigned were identified as having drinking problems severe enough to label them "problem drinkers." in 1976, however, 80% of those assigned to a rehabilitation countermeasure were classified as "problem drinkers."

Knowledge and attitudes of Oklahoma City drivers towards the impaired drinking driver and drinking-driving laws have improved significantly during the ASAP operational period. This was most likely a direct result of planned public information campaigns sponsored by ASAP and the local newspapers, radio and television stations. Local media support was very strong throughout the project.

Roadside surveys conducted every year in Oklahoma City since 1971 indicated that there has been a tendency for drivers on the highways during late hours (11 PM - 3 AM) to have a lower BAC during the ASAP operational period (1972 - 1976) than in 1971 (pre-ASAP).

Exposure adjusted injury and property damage accidents have decreased in Oklahoma City during the ASAP operational period. There is no direct evidence, however, that links this decrease to the Oklahoma City ASAP efforts.

Impactable (by the ASAP system) alcohol related fatal accidents in Oklahoma City have remained essentially constant during the years 1973 through 1976. (Average 26 impactable alcohol related fatal accidents per year.) This level is substantially below the 35 impactable A/R fatal accidents in 1972 and the estimated 39 impactable A/R fatal accidents in 1971 for Oklahoma City.

An estimate of expected potential societal costs not incurred due to a reduction in impactable alcohol related fatal accidents over baseline levels in 1976 was \$4,000,000.

Based on Oklahoma City data, the relative average risk of a fatal crash for a driver with a blood alcohol concentration greater than 200 mg.% is over 160 times that of the driver with a zero blood alcohol concentration.

Based on Oklahoma City data, the age group most susceptible to an alcohol related fatality is the driver under twenty years of age. Most probably this is due to the combination of relative lack of experience in both drinking and driving.

In summary, Oklahoma City ASAP activity and efficiency during 1976 generally were at higher levels than any prior operational year. Oklahoma City ASAP effectiveness as measured by impactable alcohol related fatal accidents has remained stabilized at the 1973 - 74 level. This is an acceptable and reasonable effectiveness level and is consistent with the effort and dollars expended.