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16. Abstract <p>This report is an evaluation of alcohol enforcement programs conducted by the Louisville, Jefferson County, and Shively police agencies in the Louisville metropolitan area. The following four types of data were collected in order to evaluate the traffic alcohol programs; accident data, arrest and adjudication data, cost-effectiveness, and public opinion data.</p> <p>Results from the before-and-after comparisons and time-series analysis show alcohol-related accidents decreased significantly during the study period. There was a 34.4 percent reduction in alcohol-related accidents during hours of special enforcement and a 30.4 percent reduction during all hours of the day. Time-series analysis of accident data showed a 27.1 percent decrease during hours of increased enforcement and a 26.1 percent decrease during all hours.</p> <p>Results from time-series analysis also indicated that the enforcement programs increased the DUI arrest rate by at least 50 percent in each of the jurisdictions studied. Inclusion of the "Slammer Law" as a control variable revealed the proportion of convictions among DUI arrests increased by nearly 449 percent.</p> <p>Based on costs associated with the program (enforcement, jail costs, and court costs) and benefits (reduced accident costs and DUI fines); the benefit-cost ratio was 2.81 to 5.67 depending upon the basis for accident costs.</p> <p>The public opinion survey showed strong support for the traffic alcohol programs and 87 percent of the respondents indicated that increased enforcement was an effective means of reducing drinking and driving. In addition, 82 percent of those responding indicated the programs had reduced their chances of an accident.</p>			
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Research Report
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IMPACT EVALUATION OF THE
LOUISVILLE-SHIVELY-JEFFERSON COUNTY
TRAFFIC ALCOHOL PROGRAMS

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Jefferson County Police Department

Jefferson County Public Safety

Jefferson County Corrections

Jefferson County Administrative Office of the Courts

Louisville Division of Police

Shively Police Department

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INTRODUCTION

The social and economic consequences of drunk driving have been well documented over the past several years. Frequently cited statistics indicate that approximately half of all drivers killed each year have blood alcohol concentrations in excess of the legal limit of 0.10 percent (1). Economic losses due to the alcohol-impaired driver are staggering. An estimate of the total economic cost of the drinking driver is in excess of 20 billion dollars per year (2). In Kentucky, the number of alcohol-related accidents has averaged 8,357 per year during the period 1983-1987 (3). Alcohol-related fatal crashes have averaged 173 per year during this same period (3).

Historically, alcohol-enforcement programs have produced mixed results; however, the trend has shifted to a more positive direction in recent years. The incidence of alcohol involvement in traffic fatalities decreased 11 percent between 1982 and 1985 (4). Reasons for improvements have been linked to the heightened social awareness about drunk driving, crusades by various organizations, various enforcement programs, and the increase in minimum drinking age. In Kentucky, several enforcement programs have been conducted and evaluations of those programs have been documented (5). Results from increased enforcement programs in Fayette, McCracken, and Warren counties indicated a significant reduction in alcohol-related accidents during the enforcement hours of the programs. There were dramatic increases in DUI arrests in the areas evaluated. DUI conviction rates varied from 90 percent in Fayette County to 77 percent in McCracken County and 55 percent in Warren County. Public awareness was also an issue during the previous evaluations and it was determined that approximately 90 percent of the respondents to a survey questionnaire were in favor of increased enforcement programs. Cost-effectiveness of the programs was analyzed and it was determined that all three areas evaluated had benefit-cost ratios greater than 1.0.

These positive indicators from previous alcohol enforcement programs, combined with the magnitude of alcohol accidents, resulted in enforcement programs being undertaken in Jefferson County. Even though the percentage of accidents involving alcohol in Jefferson County was not unusually high, the alcohol conviction rates per licensed driver and alcohol-related accident were at or near the bottom for counties having populations over 50,000.

Three agencies in Jefferson County were funded to provide increased alcohol enforcement. Those agencies were the Shively Police Department, the Louisville Police Department and the Jefferson County Police Department. The program in Shively began on April 1, 1985 and the other two started on October 1, 1985. The goals of the alcohol enforcement programs were to reduce the number of alcohol-related accidents in the respective areas by 10 percent and to increase public awareness of the drinking driver problem. Another important factor involving potential impact upon alcohol enforcement programs was the implementation of increased penalties for driving under the influence of intoxicants (DUI). The law became effective July 15, 1984 and will be considered in this evaluation. A copy of the new DUI law is included as Appendix A.

In an attempt to impact the number of alcohol-related traffic accidents, countermeasures have been implemented and efforts have been made to coordinate the efforts of the three police agencies with the judicial personnel, the local news media, and various citizen support/interest groups. This report is intended to document the impact of the alcohol enforcement programs by comparing data before and during the programs.

DATA COLLECTION

Four primary types of data were collected as a means of evaluating the Traffic Alcohol Patrol (TAP) in Louisville, Jefferson County, and Shively.

Included were accident data, arrest and adjudication data, cost effectiveness data, and public opinion data.

ACCIDENT DATA

Data were collected for alcohol-related accidents and total accidents three years before and two years during the traffic alcohol programs. This included the period of October 1, 1982 through September 30, 1987. There was some overlapping of the enforcement program in Shively (starting date of April 1, 1985 as compared to October 1, 1985 for Louisville and Jefferson County); however, data availability necessitated that a common analysis period be selected. This resulted in selecting the starting date to coincide with the beginning of programs in Louisville and Jefferson County because of the magnitude of the numbers of accidents there as compared to Shively.

Accident data of interest included those related to alcohol and total accidents. Because of the data and its availability through computerized accident records, a decision was made to use all accidents in Jefferson County as being representative of the three enforcement programs. This decision was justified based on the belief that increased enforcement by three agencies in a county would have an overlapping effect such that all drivers in that area would be affected. In addition, the accidents reported by the three agencies was a very high percentage (92 percent in 1986) of all accidents occurring in Jefferson County.

Computerized accident data were obtained from the RAPID (Records Analysis for Problem Identification and Definition) file through 1986; however, after the modification of the uniform accident report form, the RAPID file was not updated for 1987 and the KARS (Kentucky Accident Reporting System) file had to be used to complete the time period of analysis. In addition to data representative of Jefferson County for the five-year period, statewide accident data were also collected. Consideration was also given to the need

for a control location and Daviess County was selected as an area without an alcohol enforcement program and also having some characteristics of an urban area.

ARREST AND ADJUDICATION DATA

Arrest and adjudication data were the second major element included in the analysis. Potential impacts of the City of Louisville, Jefferson County, and Shively Police departments' TAP programs on the arrest and adjudication rates for the offense of DUI were assessed by evaluating the following:

- 1) Number of DUI arrests per month,
- 2) Court processing time,
- 3) Changes in the blood alcohol levels of alcohol of drivers arrested for DUI,
- 4) Court dispositions, and
- 5) Court sanctions.

These questions, plus possible changes in the demographic characteristics of the persons arrested for DUI, were addressed through analyses of data collected from the Jefferson County District Court files. Traditional before-and-after statistical procedures were combined with a time-trend modeling procedure, Auto-Regressive Integrated Moving Average (ARIMA), to provide estimates of the impacts of the Jefferson County Traffic Alcohol Patrol programs. These estimates take into account the previous trends and patterns of DUI arrests and adjudications, and the effects of the 1984 "Slammer Law." The legislation went into effect on July 15, 1984, with the intent of reducing the court's discretion over DUI cases by specifying increased sentences for individuals convicted of DUI.

Evaluation of the TAP programs required collection and analyses of monthly data from a five-year period; generally including the three years prior to and the two years following initiation of the programs. In some cases it was necessary to delay the five-year period of data collection by six months. In the jurisdictions of the City of Louisville and Jefferson County

police, the TAP programs were implemented October 1, 1985; thus the pre-TAP years studied were from October 1, 1982 to September 30, 1985. The City of Louisville and Jefferson County TAP programs were studied from October 1, 1985 to September 30, 1987. TAP was implemented approximately six months earlier within the Shively area (i.e., April 1, 1985); therefore, the pre-TAP years studied for Shively were from April 1, 1982 to March 31, 1985. The Shively TAP program was studied from April 1, 1985 to March 31, 1987.

This phase of the evaluation was based upon data obtained from the Administrative Office of the Courts' District Court computerized database. Machine-readable data were available for all DUI arrests by the respective jurisdictions from the Administrative Office of the Courts (AOC). Data for the following variables were requested for all persons arrested for DUI by the Louisville, Jefferson County, or Shively Police departments between January 1, 1982 and December 31, 1987: district court case file number, date of arrest (month, day, year), jurisdiction of arrest (Louisville, Jefferson County, or Shively), arresting officer, type of adjudication (dismissed, amended, fined, transferred, jailed, probated, or warrant issued), date of birth (month, day, year), sex, race, and county of residence (Kentucky county or out of state).

Because of the large number of DUI arrests by these jurisdictions during the five-year study period (Shively = 1,291; Louisville City = 16,897; Jefferson County = 15,080), a random sample was drawn from Jefferson County District Court Archives to collect the information critical for the analyses that was not available from the AOC computerized database. Time-series analyses based upon a sample requires at least 30 cases for each time period analyzed (6). Thus, the total number of cases to be sampled was approximately 5,400 (60 months x 30 cases x 3 jurisdictions). The cases drawn from the District Court Archives to be included in the sample were selected from the

AOC database by using a random numbers table. The total number of archive cases sampled, however, was somewhat less than 5,400 because there were less than 30 DUI arrests per month by Shively Police in 47 of the 60 months of the data frame (January 1983---December 1987). Potential reliability problems with the data prior to 1983 resulted in the archive sample being collected beginning with January 1983. For those months, data were collected on all DUI arrests. The archive sample totaled 4,742 cases: 1,800 (Jefferson County) + 1,800 (City of Louisville) + 1,142 (Shively).

Cases that could not be located in the court archives were sought among the current bench warrant files and then from the weekly microfilm maintained by the District Court. The microfilm was used as a last resort because it did not contain all of the critical variables; i.e., blood alcohol content, date of adjudication, jail sentence, and amount of fine. Those archive data were compared with those of the population of DUI cases available from the AOC to ensure that the sample was representative of the population. No significant differences were apparent between the archive sample and the AOC database. The analyses were based, whenever possible, upon the entire population of DUI cases.

The archive sample data collected included: district court case file number, date of adjudication (month, day, year), amount of fine, length of jail sentence, level of blood alcohol content, number of previous DUI arrests, characteristics of drunk driving, number of times previously attended driving school, number of times previously attended DUI school, number of previous reckless driving citations, whether defendant had a valid driver's license, whether the defendant's driver's license had been previously suspended, total driving points accumulated, number of driving points currently against the defendant, number of traffic violations during last two years, number of traffic accidents during last two years, and number of DUI arrests in this

month.

COST EFFECTIVENESS DATA

To determine the cost effectiveness of the three Traffic Alcohol Programs, an effort was made to summarize costs and benefits associated with the program. Enforcement and administrative costs were obtained from the Kentucky State Police's records of grant funds disbursed each of the first two years of the programs. Additional information relating to matching funds was obtained from the three governmental agencies in Jefferson County. Included were costs associated with personnel, equipment, vehicle mileage, supplies, and training. Jail costs were obtained from the Jefferson County Corrections office. Court costs were obtained from the Administrative Office of the Courts.

Benefits and income associated with the Traffic Alcohol Programs included reduced accident costs and DUI fines. Accident costs were related to the number and severity of alcohol-related accidents to determine the benefits resulting from reductions. Income from the TAP projects, in the form of fines resulting from DUI offenses, were obtained from the sample of arrest cases reviewed at the Administrative Office of the Courts.

SURVEY QUESTIONNAIRE DATA

A survey of licensed drivers in Jefferson County was conducted to determine the public's opinions of the Traffic Alcohol Programs. The survey was sent to a random sample of 1,000 licensed drivers in Jefferson County. Included were eight questions, all related to individual driving habits and specific views of the increased DUI enforcement. A one page questionnaire was attached to a letter briefly explaining the enforcement program and the evaluation study. A postage-paid return envelope was included with the questionnaire to encourage response. A follow-up questionnaire was sent to

those who had not responded approximately one month after the initial mailing. Copies of the questionnaires and cover letters are shown in Appendix B.

ANALYSIS AND RESULTS

ACCIDENTS

Accidents were analyzed by means of traditional before-and-after comparisons. To determine significance of accident reductions, the chi-square test was applied and changes were tested for significance at the 95-percent confidence level (7, 8). It should be noted that, when the term significant is applied to a change in accidents, the change has been determined to be significant at the 95-percent confidence level.

As noted previously, accident trends and statistics were one of four primary areas of analysis. Alcohol-related crashes in Jefferson County were analyzed for the five-year period from October 1, 1982 through September 30, 1987. This included a three-year period before and a two-year period during TAP. Table 1 is a summary of alcohol-related accidents by month for the years before and during TAP. The trends in monthly accidents are shown graphically in Figure 1. When comparing average yearly accidents, there was a significant decrease of 30.4 percent between the three-year period before and the two-year period during TAP. The number of alcohol-related accidents decreased during each year of the analysis period except for an increase from the first to second year of TAP. For a similar time period of analysis, there was a 9.9 percent decrease (significant) in statewide (excluding Jefferson County) alcohol-related accidents (Table 2). Statewide trends in alcohol-related accidents are shown in Figure 2. Total accidents statewide (excluding Jefferson County) for this same period increased by 5.1 percent (significant). Statewide trends in total accidents are shown in Table 3 and graphically in Figure 3.

To determine whether the significant decrease in accidents was a result of TAP or a general decrease in accidents, total accidents in Jefferson County

for the same period were tabulated. This summary is presented in Table 4. There was an overall decrease of 5.4 percent (monthly trends in Figure 4). This decrease was also significant at the 95-percent confidence level. The question of whether all the decrease in total accidents was attributable to alcohol-related accidents was also addressed. Alcohol-related accidents represented 5.3 percent of all accidents during the five-year study period. When alcohol-related accidents are excluded from each year's total, the decrease is 7.7 percent (significant at 95-percent confidence level) when comparing the three years before with the two-years during TAP. Therefore, a general decrease in total accidents did occur beyond the influence of alcohol-related accidents. The result was a 7.7-percent decrease in all accidents, excluding those related to alcohol, compared to a 30.4-percent decrease in alcohol-related accidents. It should be noted that, even though the reductions in both alcohol-related and "other" accidents were significant, the magnitude of the reductions in alcohol-related accidents is approximately four times greater than for "other" accidents.

An attempt was made to select a county not having a program of increased enforcement to serve as a control location. Daviess County was selected as the county with the largest urban area and not having had a previous TAP project. Results indicate that alcohol-related accidents decreased by 14.2 percent during the same period of analysis; however, analysis indicated that this reduction was not significant. Total accidents, excluding alcohol-related crashes, decreased by only 2.0 percent (not significant) during the same period. Those data indicate that the decrease in alcohol-related accidents was much greater in Jefferson County as compared to Daviess County.

The significant decrease in alcohol-related accidents of 30.4 percent was for all hours of the day. Further analysis was required to determine if

variations in accidents for the hours of TAP enforcement were different from all hours of the day. Even though there were some differences by agency and by month during the programs, it was assumed that the hours of enforcement generally fell in the time period from 10:00 p.m. to 8:00 a.m. Without attempting to delete the effect of the slight variation of enforcement by agency or by month, the decrease in alcohol-related accidents during the hours of TAP enforcement was 34.4 percent (significant at 95-percent confidence level). This is slightly more than the decrease in alcohol-related accidents for all hours (30.4 percent); however, the impact of TAP extended to hours other than those of special enforcement because of increased public awareness and an increased level of enforcement during non-TAP hours. A summary of alcohol-related accidents during TAP hours, by month, is presented in Table 5 and trends are shown graphically in Figure 5.

Additional time distributions of alcohol-related accidents are presented in Tables 6 and 7. The summary of alcohol-related accidents by day of week in Table 6 shows that distribution was very similar for the three-year period prior to TAP and the two years during TAP. Saturdays continued to have the highest number of alcohol-related accidents, followed by Fridays and Sundays. This shows the larger numbers of alcohol-related accidents which occur during the weekend compared to the remainder of the week. There was a reduction in alcohol-related accidents for each day of the week. There were similar reductions on most days with lower reductions on Tuesday and Wednesday. Trends in alcohol-related accidents by day of week are shown in Figure 6. The distribution of alcohol-related accidents by time of day is presented in Table 7. When comparing three-hour periods, it was noted that there was a decrease in the number of accidents from before to during TAP for all time periods. The largest number of alcohol-related crashes occurred between midnight and 2:59 a.m. and between 9:00 p.m. and midnight. The period having the largest

decrease in number of accidents was between midnight and 2:59 a.m. A mild shift was noted in the percentages of alcohol-related accidents; with slight increases in the percentages occurring between the hours of 3:00 p.m. and 9:00 p.m. Trends in alcohol-related accidents by time of day are shown in Figure 7.

Alcohol-related accidents for the five-year study period were classified by the most severe injury in Table 8. Data from this summary show the percentages of alcohol-related fatal or injury accidents were similar (44 to 45 percent) when comparing the three-year before period with the two-year period during TAP. The data also indicate a 28.2-percent decrease in alcohol-related fatal or injury accidents when comparing three years before with two years of TAP. As shown in Table 8, there was a reduction in all types of accidents by injury classification when comparing the three years before with the two years during TAP. However, the severity of the accidents as represented by the Severity Index increased slightly from the three years before (2.95) to the two years during TAP (3.12).

Additional data showing total fatalities and injuries resulting from alcohol-related accidents during the five-year study period are presented in Table 9. When total fatalities and injuries for the three-year before period were compared to the two years during TAP, the result was a 26.3 percent decrease. This decrease was apparently a direct result of the decrease in accidents.

In addition to the traditional before-and-after analysis of accident data, trends over a period of time were investigated by means of time-series analysis. The relationship between number of accidents and time, in months, was analyzed. The purpose of the time-series analysis was to determine whether alcohol enforcement programs had a significant impact on alcohol-

related accidents. A time series is defined as a sequence of data elements recorded over equally spaced time periods. Typical before-and-after studies of the effect of a new safety program may be invalidated by failure to detect and eliminate within-series relationships (autocorrelation) in the accident data. Examination of data over a period by time-series analysis often reveals within-series relationships existing between the data points. The procedure allows determination of the correlation between data points such that the relationship between the intervention and the dependent variable can be identified (9). Frequently, this is the result of annual cycles or seasonality in accident data. Autocorrelation also may result from long-term trends such as population growth or decline or changes in vehicle-miles traveled. Using the time-series method of intervention analysis available through Statistical Computing Associates (10), models were developed to determine whether any changes in the input variables coincided with the implementation of TAP programs.

The basic time-series equation used in these analyses was: $Y_t = \text{Trend} + \text{Slam} + \text{TAP} + \text{Noise}$. " Y_t " represents the value of the dependent variable at time t ; "Trend," the pre-intervention series level; "Slam," the change in the series due to the 1984 "Slammer Law"; "TAP," the change in the series due to the implementation of the TAP programs; and "Noise" represents error in the measurement of the dependent variable. Related to this analysis, the time-series equation assumes that the number of accidents or arrests (Y_t) is equal to the number of accidents or arrests independent of the Slammer Law and TAP (Trend), plus the number of accidents or arrests due to implementation of the Slammer Law and TAP programs (Slam and TAP, respectively), plus any error (Noise) in the recording of the number of arrests. In order to properly assess the impact of the TAP programs on the accident arrest rate, it was

necessary to control for the impacts of the "Slammer Law". Using the time series method of intervention analysis, models were developed to determine if a change took place coincident with implementation of the TAP program. Presented in Table 10 is a summary of the time-series results for alcohol-related and other accidents in Jefferson County and statewide (excluding Jefferson County). Variables used to explain the time-series analysis included mean, standard deviation, trend, SLAM percent change, and TAP percent change. Mean and standard deviation are statistical terms used to further explain monthly accidents. Trend is the pattern of monthly accidents with control for both the "Slammer Law" and TAP. SLAM is the change in monthly accidents as a percent of the monthly average number of accidents prior to the intervention of the 1984 DUI law. TAP is the change in monthly accidents as a percent of the monthly average number of accidents prior to the intervention of TAP programs.

Results from the time-series analysis indicate there were significant reductions in alcohol-related accidents in Jefferson County related to TAP. The reductions represented all alcohol accidents (-26.1 percent), alcohol accidents during TAP hours (-27.1 percent), and alcohol accidents during non-TAP hours (-31.2 percent). The results from traditional before-and-after analysis were similar to those from time-series analysis. Significant decreases occurred as a result of TAP for alcohol-related accidents during TAP hours and all hours in Jefferson County. In all comparisons of before-and-after and time-series results, the trends were generally the same even though some results were determined as being significant changes with before-and-after but not with time-series.

ARREST AND ADJUDICATION

Arrests Data

Figures 8a through 8c show changes in the number of all DUI arrests per

month by the three combined jurisdictions and for Louisville, Jefferson County, and Shively, respectively, for three years prior to implementation of the Traffic Alcohol Patrol (TAP) Program and two years after it began operation. The numbers of arrests per month are shown in Table 11. It appears the TAP programs increased the number of arrests for DUI by Jefferson County and Shively police. Those data, for example, indicate the total number of DUI arrests by City of Louisville police increased from 3,240 during the year prior to implementation of TAP to 4,318 during the first year of TAP. To determine the impact of TAP over and above normal fluctuations in arrests rates, those data were analyzed and summarized in detail using a time-series analysis technique (Table 12). The dependence between each of the data points in the series was controlled as well as the impact of the "Slammer Law", thus allowing examination of the short-term impacts of the TAP programs. Results indicated significant increases in DUI arrests after TAP for all three jurisdictions. However, the increases due to the "Slammer Law" were significant.

Within the respective police jurisdictions, the patterns of arrests by the City of Louisville police and the Jefferson County police were somewhat similar. (Figures 8a and 8b.) It appeared that both of those agencies increased their arrest rates after enactment of the "Slammer Law" (Slam = 8.7% and 32.8%, respectively); however, those increases were not statistically significant (Table 12). After implementation of TAP, the DUI arrest rates increased by at least 50 percent (TAP = 60% and 50%, respectively). Those increases in the DUI arrest rates were statistically significant.

Of the three jurisdictions, Shively's TAP program appeared to have the most dramatic effect on the number of arrests. Figure 8c depicts a very sharp but sporadic increase in the number of Shively DUI arrests per month.

Throughout the two years following implementation of TAP, the number of DUI arrests per month increased by nearly 93 percent (TAP = 92.5%). The DUI arrest rate within the Shively area increased by 61 percent after the "Slammer Law" went into effect. That increase, although large, was not statistically significant due to the previous small number of arrests per month and the large standard deviation of the series. The analyses showed, however, that the presence of TAP produced a significant effect over and above the previous DUI arrest trends. The impact appeared to be strongest in the first year of the TAP program. As Table 11 shows, the number of arrests dropped from 419 in 1985-86 to 352 in 1986-87. This drop may have been due to a decrease in the patrol by TAP officers, to a change in drinking behavior, some combination of both, or to other factors.

The numbers of DUI arrests per day of the week were examined to determine whether changes occurred in the pattern of DUI arrests by day of the week. The data reveal that most DUI arrests occurred on Saturday within all three jurisdictions, both before and during TAP was implemented (Table 13). This finding was not surprising, nor was it unexpected to find that Friday and Sunday are the other days of the week on which most persons are arrested for DUI. The high percentage of arrests on Sunday, despite the fact that package liquor is not sold on Sunday in Louisville, is probably attributable to the drinking that occurs in the first few hours after midnight on Sunday morning. Unfortunately, the times of arrest were not available in the district court database; therefore, this assumption could not be properly tested. Logic supports this supposition and analyses of other TAP programs have documented this trend (11).

Blood Alcohol Content

Many TAP programs not only increase their patrols to apprehend persons driving under the influence of intoxicants, but also attempt to increase

public awareness about the dangers of driving while under the influence of alcohol. One indicator frequently used to measure increased awareness is a change in the average blood alcohol content levels of persons arrested for DUI. It is assumed that as individuals become more aware of the dangers of drinking and driving, they will make a practice of drinking less when they expect to be driving. An intended impact of the TAP program was to reduce the average blood alcohol content of individuals arrested for DUI.

Prior to TAP, the average blood alcohol content of individuals arrested by City of Louisville police was 0.1593. It dropped by 4.2 percent after enactment of the "Slammer Law" and then another 1.8 percent after TAP was implemented by the Louisville City police (Table 12.) Neither of those decreases was statistically significant. The gradual, slow decline in the average BAC levels of persons arrested by Louisville City police may be noted in Figure 9a.

Across the respective TAP jurisdictions, the "Slammer Law" and TAP programs had slightly different impacts on the average blood alcohol content of DUI arrestees. There were statistically significant drops in the average BAC levels of drivers arrested by the Jefferson County police both after the enactment of the "Slammer Law" and after the implementation of TAP (Slam = -3.4% and TAP = -6.0%). The average BAC among Jefferson County DUI arrestees decreased from 0.1548 to 0.1455---a significant decrease of 6 percent. Those changes are shown in Figure 9b.

Among those arrested by the Shively police officers, as may be noted in Figure 9c, there was no decline, but rather an increase in the average blood alcohol content level. The average BAC level prior to implementation of TAP was 0.1653; this rate increased, but not significantly, after the "Slammer Law" (Table 12). Again, after implementation of TAP, the average BAC level of

Shively arrestees increased (TAP = 5.4%), but again, this increase was not statistically significant. Given that the increases were not statistically significant, the increases could have been due to chance and not to changes in drinking behavior.

Another way to examine changes in average blood alcohol content levels is to group the recorded BAC levels into categories and compare their distributions before and after implementation of the TAP programs. Presented in Table 14 are the BAC levels of individuals arrested for DUI within the three jurisdictions. (Those figures were based upon random sample of cases drawn from the archives). Within each of the jurisdictions, most defendants had a BAC level of .19 or less. Those data also illustrate the increasing percentage of defendants who refused to take the breathalyzer test. During the second year of the TAP programs, the number of refusals doubled for those arrested by the City of Louisville and the Jefferson County police. In Shively, the percentage increased from 9 percent to 17 percent of the persons arrested.

Court Processing Time

Decreasing court processing time---i.e., the length of time between an arrest for DUI and adjudication of the case in court---was an important goal of the "Slammer Law" and TAP programs. Harsh penalties, swiftly imposed, along with increased police surveillance for intoxicated drivers, were considered important deterrents against driving under the influence of intoxicants. On the other hand, there is always concern when the number of arrests is increased dramatically that the court dockets will become overloaded and the pace of justice will be slowed, thus diminishing the potential deterrent effects of the programs.

For two of the TAP jurisdictions included in this evaluation, the pattern of court processing time was basically the same. This was not unexpected

since the arrests within each of the jurisdictions are processed by the Jefferson County District Court. Among cases for persons arrested by the City of Louisville police and the Jefferson County police there was a gradual decrease in time required to process a DUI case. (Figures 10a and 10b.) After enactment of the "Slammer Law", court processing time for Jefferson County and Louisville City DUI cases decreased by approximately 9 percent (Jefferson County = -8.9% and Louisville = -9.3%) as shown in Table 12). Those decreases were not statistically significant. With implementation of TAP, the average time required to process a DUI case from those departments continued to decrease (Jefferson County = -8.5% and Louisville = -12.7%). These changes were not statistically significant.

The TAP program implemented in Shively did not appear to be effective in reducing court processing time. Figure 10c illustrates that there was a large increase in the average length of time required to process DUI cases between the time when the "Slammer Law" was enacted and the beginning of TAP. The average time required to process DUI cases from Shively after the "Slammer Law" increased by 56 percent (Slam = 56.4%). That was equal to an approximate increase of 30 days to process Shively DUI cases---an increase that is statistically significant. With implementation of TAP, however, the time required to process Shively DUI cases dropped sharply, by 34 percent (TAP = -34.2%), which constitutes a statistically significant decrease. Thus, it appears that with implementation of TAP, the impact of the "Slammer Law" on court processing time was reversed.

The number of days between a DUI arrest and adjudication are presented in Table 15 for each jurisdiction both before and after implementation of the TAP programs. Those data clearly illustrate a decrease in court processing time for Louisville and Jefferson County police arrests. The data also demonstrate

that the overall court processing time for Shively cases has decreased since the implementation of TAP.

Type of Adjudication

The outcome of the case in court is a very critical aspect of the TAP programs and "Slammer Law". The intent of each was to "get tough" on intoxicated drivers by increasing the probability of arrests and conviction, and the severity of sanctions. To determine whether changes were forthcoming in patterns of dispositions of DUI cases in Jefferson County District Courts, adjudication data as well as arrest data were extracted from the court records. Table 16 summarizes the Jefferson County District Court data obtained from the Administrative Office of the Courts. The disposition data have been summarized for the three TAP programs because all of the arrests are processed by the Jefferson County District Court. Preliminary examination of data indicated there were no differences in dispositions among cases originating in the respective police jurisdictions.

It is readily apparent from Table 16 that there was a decrease in the percentage of cases dismissed. Another interesting change was the decrease in the percentage of cases amended, which dropped from approximately 80 percent in 1982-83 to only 20 percent of the cases by 1986-87. A time-series analysis of the proportion of the total number of DUI cases amended from DUI to a lesser charge (amend rate) indicated that, independent of both the "Slammer Law" and the TAP programs, there was a statistically significant decrease in the amend rate in Jefferson County District Court (Trend = -4.1 as shown in Table 12). Neither the "Slammer Law" nor the TAP programs had a significant impact on the proportion of DUI cases amended.

The trend in amendments shown in Figure 11 indicates that a ~~sharp~~ major reduction in the number of amendments occurred near the beginning of 1984, which may have been coincident with passage of the "Slammer Law" that became effective on July 15, 1984.

Further analyses of data indicated that the conviction rate of persons arrested for DUI has risen sharply over this five-year period (Table 16).

During October 1982 through September 1983, only 7 percent of the persons arrested for DUI were actually convicted of DUI (1% [Probated] + 4% [Paid fine] + 2% [Jail sentence] = 7% [convicted]). The DUI charges of the remaining 93 percent were either dismissed (9%), amended (80%), or a bench warrant was issued (3%). In contrast, between October 1986 and September 1987, the conviction rate had risen to 63 percent (48% [Probated] + 14% [Paid fine] + 1% [Jail sentence] = 63% [convicted]).

Time-series analyses were conducted on the proportion of convictions among the total number of DUI arrests (conviction rate) over the five years between October 1982 and September 1987. ^(Figure 12) The rise in the conviction rate for DUI in the Jefferson County District Court began prior to implementation of TAP. It appears that the change coincided with the "Slammer Law". As shown in Table 12, there was a 449 percent increase in the DUI conviction rate attributable to the "Slammer Law" (Slam = 449.2%). The conviction rate continued to increase after implementation of the TAP programs; however, the increase (140%) was not statistically significant over the increase produced by the "Slammer Law". This time series was very unstable; therefore, an extremely high percent change had to occur in order to be statistically significant.

Due to the coding rules maintained by the AOC, data presented in Table 16 are somewhat misleading, in that it appears that very few individuals were given a jail sentence or paid a fine. A disposition was coded by the AOC as probated if either the fine, the jail sentence, or both were probated. If an individual was given both a jail sentence and a fine, the disposition was coded as a jail sentence. A more accurate indication of the number of persons given a jail sentence and distribution of fines may be found in Tables 17 and 18, respectively.

The overall pattern of jail status of persons arrested but not

necessarily tried for DUI is presented in Table 17. For the first four years of data received from the AOC (from October 1982 to September 1986), the average length of jail sentence for arrestees (DUI and amended cases) decreased rapidly, dropping from 90 days for the period from October 1982 to September 1983, to 51 days for October 1985 to September 1986. During the fifth year (from October 1986 to September 1987), however, the average length of jail sentence increased to approximately 72 days. Jail overcrowding, "Slammer Law", public pressure, TAP programs, and the like---all could be factors affecting the observed fluctuations of jail sentences given Jefferson County DUI offenders.

To further investigate this phenomena, a separate analysis, not shown in Table 17, was undertaken that included only the arrestees convicted of DUI (i.e., those who received a penalty of probation, jail, or a fine). Among those convicted of DUI, the average jail sentence increased after implementation of the TAP programs. In the year immediately prior to TAP (October 1984 to September 1985), the average jail sentence of persons convicted of DUI was 47 days; during the first year of TAP, the average jail sentence increased by approximately 15 days (DUI mean = 62 days). During the second year of TAP, the average jail sentence for DUI was 76 days.

Table 18 provides the distribution of fines imposed by the Jefferson County District Court upon persons arrested for DUI. Like the disposition data, the data on fines have been summarized for the three TAP programs because all traffic cases were handled by the same court system. The amount of the fines imposed upon arrestees (DUI and amended cases) tried by Jefferson County Traffic Court gradually increased over the five years of court data studied. The average fine between October 1982 and September 1983 was approximately \$171; by the fifth year, (October 1, 1986 to September 1987),

the average fine was \$254. As expected, the fines followed an overall pattern of gradually increasing over the last five years. The fines for DUI, however, were somewhat higher. Although not shown in Table 18, the average fines for DUI during the two years after the implementation of TAP were \$241 and \$254, respectively.

Given the intent of the 1984 "Slammer Law" and the renewed emphasis in the TAP programs to get tough on DUI offenders---particularly repeat offenders---additional analysis was conducted to compare the fines and jail sentences of first-time and repeat DUI offenders. The average fines and jail sentences of first-time and repeat DUI offenders per year between October 1982 and September 1987 are presented in Table 19. The data clearly document that repeat offenders were sanctioned more harshly than first-time DUI offenders. There were highly statistically significant differences ($p < .01$) between the fines and jail sentences of first-time and repeat offenders for each of the years studied. The data also clearly indicate that, although the average length of jail sentences imposed upon first-time offenders has decreased, the amount of fines levied against all DUI offenders has steadily increased. It is probable that jail sentences were given in only the most extreme cases prior to the "Slammer Law"; however, relatively shorter sentences are now routinely given.

Description of DUI Arrestees

The following summaries deal with the demographic characteristics of persons arrested for DUI. As shown in Table 20, the arrestees tended to be between 21 and 29 years of age, although a fairly large percentage was between 30 and 39 years of age. After implementation of the TAP programs, the percentage of young persons increased (Table 20). Among arrests by Jefferson County police, for example, the proportion of persons between 21 to 24 and between 25 to 29 years of age increased after implementation of TAP. On the

other hand, the proportion of the arrestees who were between 16 and 20 years of age decreased within each of the jurisdictions.

Table 21 provides a listing of arrestees by sex and race within each of the jurisdictions for the three years prior to and two years after implementation of the TAP programs. Based upon the computerized data available for the AOC, the proportion of white to nonwhite arrestees did not change; however, it appears that the number of females arrested increased slightly. This pattern was consistent for the three TAP jurisdictions studied and the differences observed were statistically significant.

Useful data, when assessing alcohol enforcement programs, may be obtained from prior records of individuals arrested for DUI in these three jurisdictions. Data were collected regarding the status of their driver's licenses and the presence of prior DUI convictions from the Jefferson County District Court Archives. The data indicated that the majority of arrestees had a valid license at the time of their arrest both before and after the implementation of TAP (Table 22). There was a significant increase in the proportion of arrestees whose licenses were revoked after implementation of TAP (Table 22). The summary of prior DUI convictions shown in Table 23 suggests that the proportion of DUI arrestees who had prior DUI convictions did not change after implementation of TAP. As shown in Table 23, this was true in each of the jurisdictions.

COST EFFECTIVENESS

A summary of costs and benefits associated with the three Traffic Alcohol Programs in Jefferson County is presented in Table 24. Primary cost components included in the analysis were the following: 1) police enforcement, administrative, and support costs; 2) jail costs; and 3) DUI costs. Jail costs were based on an average of \$35.70 per day per prisoner.

Estimates of numbers of days served were made from the sample of arrest and adjudication data obtained from the Administrative Office of the Courts.

Benefits and income were derived from the following sources; reduction in accident costs, court costs, service fees, and fines from DUI convictions and other violations. A commonly used measure of the benefits of a highway safety program is an estimate of accident costs that will not be incurred as a result of reduced accidents. Using accident data previously discussed and accident costs reported by the National Safety Council (12), savings resulting from reduced accidents costs were determined. Income in the form of DUI fines was determined from the sample of arrest and adjudication data.

Results of the cost-effectiveness analysis as presented in Table 24 reveal that the Traffic Alcohol Program had a benefit-cost ratio of 0.73 when only direct incomes from fines and court costs were used. This reflects income of \$3,832,603 and costs of \$5,216,266. The benefit-cost ratio increased to 2.81 when the reduction in accident costs was included. Reduced accident costs totaled \$10,846,400; therefore when this was combined with direct income from fines and court costs, the total for benefits and income was \$14,679,003.

An alternative approach for determining costs associated with accidents was developed by the Granville Corporation under contract with the Federal Highway Administration (13). Results were accident costs for use in highway improvement economic analysis based upon the amount individuals were willing to pay to reduce the number and severity of accidents. Those costs were significantly higher than those recommended by the National Safety Council, most notably for fatalities. A recent Technical Advisory from the Federal Highway Administration reflected even higher costs for fatalities; however, it was recommended that a combined fatal-plus-injury cost be used to avoid disproportionate attention to fatalities (14). Use of the more recently

recommended costs resulted in a benefit-cost ratio approximately two times that when using National Safety Council costs. Results using both methods are shown in Table 24.

SURVEY QUESTIONNAIRE

The survey of licensed drivers in Jefferson County was conducted in the spring of 1988. From a total of approximately 450,000 licensed drivers in Jefferson County, a random sample of 1,000 drivers was selected and mailed a questionnaire containing eight questions was mailed to selected drivers. For those who indicated that they had driven when their ability had been impaired due to alcohol, three additional questions were asked. Responses were received from 437 of those sent questionnaires. An attempt was made to insure that 1,000 questionnaires were actually delivered; however, it was not known until after the initial mailing that bulk mailing policies would not permit those having incorrect addresses to be returned. The result was an initial mailing of 1,000 questionnaires, followed by another copy of the same questionnaire to those who had not responded approximately one month later. The number of questionnaires mailed to incorrect addresses and not returned remained unknown. Previous experience with the driver licenses file resulted in a return rate due to incorrect addresses of 15 to 20 percent. The response would be 51 to 55 percent rather than 44 percent if only 800 to 850 were actually delivered.

A sample size return goal of 400 was selected based on guidelines specifying precision levels and confidence limits (15). The sample size of 400 was required to insure a precision level of plus or minus 5 percent, with 95 percent confidence.

Results from the survey questionnaire were summarized and presented in Table 25. It was determined that public awareness of the TAP projects was

high, with 96 percent of the respondents indicating they knew about the program. Approximately 90 percent indicated that they were in favor of the TAP projects.

One of the primary purposes for the survey was to determine the drivers' perceived risk of being apprehended while the Traffic Alcohol Programs were ongoing. The question included in the survey was as follows; "Do you feel that the chances of arrest of individuals who do drink and drive are greater now than before the Traffic Alcohol Program?" Results indicate that 91 percent feel that TAP has increased chances of arrest for drivers who drink. When asked whether TAP reduced an individual's chances of involvement in a traffic accident, 82 percent indicated that it had.

An attempt was made to access the opinions of those who do drive when impaired as compared to others. It was determined that 31 percent of the respondents admitted they had driven while impaired. Of those who had driven while impaired, the following responses were obtained: 1) 79 percent felt their chances of arrest were greater due to TAP; 2) 74 percent indicated that TAP had affected their driving habits; and 3) 72 percent indicated that TAP had reduced their chances of being involved in a traffic accident while driving under the influence of alcohol.

Only 14 percent were of the opinion that the level of alcohol-related enforcement had violated the rights of drivers in Jefferson County. Increased police enforcement as a means of reducing the number of drunk drivers was thought to be effective by 87 percent of the respondents. A somewhat surprising result was the indication that 72 percent were willing, as a taxpayer, to support increased police enforcement after federal funding for the Traffic Alcohol Program was discontinued.

SUMMARY OF FINDINGS

An impact evaluation of the traffic alcohol program in Jefferson County

was performed. The following types of data were collected and analyzed: accident, arrests and adjudication, cost effectiveness, and public opinions.

A summary of major findings of the evaluation is presented in Table 26. The findings are shown in terms of various criteria of success for the types of data collected. The study area experienced significant reductions (at the 95-percent confidence level) in alcohol-related accidents when comparing three years before with two years during TAP. Results indicate a 34.4-percent reduction during TAP hours of enforcement and a 30.4-percent reduction during all hours of the day.

Results from the time-series analysis of alcohol-related accident data showed a decrease in accidents of 27.1 percent during TAP hours of enforcement. Time-series analysis also showed the percent reduction was 26.1 during all hours for the combined Jefferson County TAP projects. The number of alcohol-related accidents increased from 1,284 during the first year of TAP to 1,382 during the second year each of which was significantly less than the three-year average of 1,915 before TAP. When comparing three years before with two years during TAP, there was a 28.2 percent decrease in alcohol-related fatal or injury accidents.

The impacts of the City of Louisville, Jefferson County, and Shively Police departments' Traffic Alcohol Patrol programs on the number of arrests per month, the amount of court processing time, changes in the blood alcohol levels of drivers arrested for DUI, court dispositions, and court sanctions for the offense of driving under the influence of intoxicants were assessed using a time-series modeling procedure. The analyses took into account the previous trends and patterns of DUI arrests and adjudications, and the effects of the 1984 "Slammer Law". Data from the three years prior to and the two years during the TAP programs were available on all DUI arrests by the

respective jurisdictions from the Administrative Office of the Courts and Jefferson County District Court Archives.

The analyses indicated that the TAP programs resulted in a statistically significant change by increasing the DUI arrest rate by at least 50 percent in each of the jurisdictions studied. The TAP program implemented by the Jefferson County police also had a statistically significant impact on the average BAC levels of individuals arrested for DUI. The average BAC level decreased by 6 percent. Another significant impact was a 34-percent decrease in the time required to process DUI cases for those arrested by the Shively police.

The inclusion of the "Slammer Law" as a control variable revealed that the proportion of convictions among DUI arrests increased by nearly 438 percent. The analyses also indicated that the "Slammer Law" had a statistically significant impact on the average BAC levels of drivers arrested by Jefferson County Police (-3.4% change). The only other statistically significant effect attributed to the "Slammer Law" was a 56 percent increase in the time required to process Shively DUI cases.


A basic measure of any program's success in terms of its probability of continuance is the cost effectiveness. A benefit-cost ratio of 0.73 was calculated using only direct income as benefits. When accident savings were included, the benefit-cost ratio increased to 2.81 and 5.67 using two sources for the costs of accidents.

Results from the survey questionnaire indicated that a high percentage of respondents (96) were aware of the TAP program. It was found that 87 percent indicated that the increased enforcement was an effective means of reducing drinking and driving. The perceived risk was also high with 91 percent indicating that TAP had increased chances of arrest for persons who drink and drive. In addition, 82 percent of the respondents were of the opinion that

TAP had reduced their chances of involvement in an accident and 72 percent would be willing to support increased enforcement after funding for TAP is discontinued.

In summary, the evaluation indicated that the TAP program met its objectives of reducing alcohol-related accidents and increasing public awareness of the drinking driver problem.

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TABLE 1. ALCOHOL-RELATED ACCIDENTS BY MONTH - JEFFERSON COUNTY

MONTH	OCT 1982 - SEPT 1983		OCT 1983 - SEPT 1984		OCT 1984 - SEPT 1985		OCT 1985 - SEPT 1986		OCT 1986 - SEPT 1987	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
October	220	10.7	162	8.4	163	9.3	104	8.1	102	7.4
November	148	7.2	175	9.1	165	9.4	101	7.9	118	8.5
December	174	8.4	183	9.5	151	8.6	110	8.6	98	7.1
January	168	8.2	139	7.2	106	6.0	86	6.7	118	8.5
February	145	7.0	143	7.4	117	6.7	84	6.5	108	7.8
March	174	8.4	161	8.3	141	8.0	108	8.4	119	8.6
April	174	8.4	190	9.8	138	7.9	121	9.4	127	9.2
May	233	11.3	212	11.0	190	10.8	107	8.3	129	9.3
June	161	7.8	121	6.3	154	8.8	103	8.0	132	9.6
July	161	7.8	151	7.8	146	8.3	124	9.7	106	7.7
August	157	7.6	141	7.3	150	8.6	126	9.8	108	7.8
September	146	7.1	153	7.9	131	7.5	110	8.6	117	8.5
TOTAL	2061		1931		1752		1284		1382	

TABLE 2. STATEWIDE ALCOHOL-RELATED ACCIDENTS BY MONTH
(EXCLUDING JEFFERSON COUNTY)

MONTH	OCT 1982 - SEPT 1983	OCT 1983 - SEPT 1984	OCT 1984 - SEPT 1985	OCT 1985 - SEPT 1986	OCT 1986 - SEPT 1987
October	722	679	563	537	561
November	647	652	594	571	580
December	739	701	558	504	540
January	575	485	382	413	494
February	592	481	358	460	455
March	656	557	560	508	510
April	696	622	517	548	488
May	722	595	561	597	618
June	574	615	573	555	457
July	604	506	480	572	529
August	546	527	601	620	528
September	647	657	509	519	482
TOTAL	7720	7077	6256	6404	6242

TABLE 3. STATEWIDE ACCIDENTS BY MONTH (EXCLUDING JEFFERSON COUNTY)

	OCT 1982 - SEPT 1983	OCT 1983 - SEPT 1984	OCT 1984 - SEPT 1985	OCT 1985 - SEPT 1986	OCT 1986 - SEPT 1987
October	8,480	8,820	9,130	9,509	9,844
November	8,015	8,417	9,499	9,611	9,956
December	8,606	11,185	10,208	9,981	9,734
January	7,027	10,107	10,461	7,546	8,816
February	6,829	7,906	8,535	7,999	7,643
March	7,556	7,137	7,682	8,106	8,379
April	8,042	8,019	8,006	8,566	8,966
May	8,619	8,874	9,490	9,511	9,864
June	7,917	8,703	8,943	8,951	9,212
July	7,867	8,017	8,771	9,120	9,397
August	7,773	8,658	9,280	9,233	9,157
September	7,934	8,803	8,692	8,609	8,547
TOTAL	94,665	104,646	108,697	106,742	109,075

TABLE 4. TOTAL ACCIDENTS BY MONTH - JEFFERSON COUNTY

MONTH	OCT 1982 - SEPT 1983		OCT 1983 - SEPT 1984		OCT 1984 - SEPT 1985		OCT 1985 - SEPT 1986		OCT 1986 - SEPT 1987	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
October	2,454	8.7	2,719	8.6	2,817	8.4	2,772	8.4	3,036	9.3
November	2,365	8.4	2,558	8.1	2,970	8.9	2,878	8.7	2,856	8.7
December	2,639	9.3	3,204	10.1	3,189	9.5	2,757	8.4	3,200	10.0
January	1,890	6.7	2,600	8.2	3,003	9.0	2,270	6.9	2,492	7.6
February	1,952	6.9	2,251	7.1	2,468	7.4	2,532	7.7	2,239	6.8
March	2,200	7.8	2,309	7.3	2,618	7.8	2,593	7.9	2,512	7.7
April	2,675	9.5	2,771	8.7	2,520	7.5	2,739	8.3	2,565	7.8
May	2,845	10.1	2,920	9.2	2,990	8.9	3,002	9.1	2,779	8.5
June	2,365	8.4	2,396	7.6	2,784	8.3	2,881	8.8	2,781	8.5
July	2,241	7.9	2,430	7.7	2,565	7.7	2,997	9.1	2,852	8.7
August	2,310	8.2	2,866	9.0	2,786	8.4	2,864	8.7	2,583	7.9
September	2,333	8.3	2,697	8.5	2,701	8.1	2,636	8.0	2,726	8.3
TOTAL	28,269		31,721		33,411		32,921		32,701	

TABLE 5. ALCOHOL-RELATED ACCIDENTS DURING TAP HOURS
(10:00 PM - 8:00 AM) BY MONTH

MONTH	OCT 1982 - SEPT 1983		OCT 1983 - SEPT 1984		OCT 1984 - SEPT 1985		OCT 1985 - SEPT 1986		OCT 1986 - SEPT 1987	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
October	129	10.0	103	8.1	101	8.8	60	7.6	63	7.6
November	85	6.6	112	8.8	92	8.0	61	7.7	69	8.3
December	97	7.5	119	9.3	101	8.8	61	7.7	42	5.1
January	97	7.5	96	7.5	68	5.9	56	7.1	79	9.5
February	84	6.5	90	7.0	72	6.3	53	6.7	58	7.0
March	116	9.0	115	9.0	99	8.7	63	8.0	71	8.6
April	109	8.5	129	10.1	82	7.2	75	9.5	82	9.9
May	148	11.5	153	12.0	121	10.6	63	8.0	79	9.5
June	106	8.2	83	6.5	110	9.6	65	8.2	86	10.4
July	114	8.9	99	7.7	103	9.0	81	10.2	64	7.7
August	101	7.8	83	6.5	108	9.4	88	11.1	70	8.4
September	102	7.9	96	7.5	86	7.5	66	8.3	67	8.1
TOTAL	1,288		1,278		1,143		792		830	

TABLE 6. ALCOHOL-RELATED ACCIDENTS BY DAY OF WEEK

DAY OF WEEK	THREE-YEAR AVERAGE OCT 1982 - SEPT 1985		TWO-YEAR AVERAGE OCT 1985 - SEPT 1987	
	NUMBER*	PERCENT	NUMBER*	PERCENT
Sunday	323	16.9	216	16.2
Monday	155	8.1	106	8.0
Tuesday	176	9.2	145	10.9
Wednesday	201	10.5	149	11.2
Thursday	223	11.6	153	11.5
Friday	323	16.9	218	16.4
Saturday	515	26.9	346	26.0
Total	5,744		2,666	

* Does not include accidents in which day of week was not reported.

TABLE 7. ALCOHOL-RELATED ACCIDENTS BY TIME OF DAY

TIME OF DAY	THREE-YEAR AVERAGE OCT 1982 - SEPT.1985		TWO-YEAR AVERAGE OCT 1985 - SEPT 1987	
	NUMBER*	PERCENT	NUMBER*	PERCENT
Midnight - 2:59 am	545	28.6	332	24.9
3:00 am - 5:59 am	314	16.5	199	14.9
6:00 am - 8:59 am	46	2.4	36	2.7
9:00 am - 11:59 am	27	1.4	24	1.8
Noon - 2:59 pm	65	3.4	40	3.0
3:00 pm - 5:59 pm	153	8.0	127	9.5
6:00 pm - 8:59 pm	278	14.5	228	17.1
9:00 pm - 11:59 pm	481	25.2	346	26.0
Total	5,727		2,663	

* Does not include accidents in which time of day was not reported.

TABLE 8. ALCOHOL-RELATED ACCIDENTS CLASSIFIED BY MOST SEVERE INJURY

MOST SEVERE INJURY	THREE-YEAR AVERAGE	TWO-YEAR AVERAGE	PERCENT REDUCTION AFTER TO BEFORE
	OCT 1982 - SEPT 1985	OCT 1985 - SEPT 1987	
Fatal	19	14	26.3
Incapacitating Injury	254	208	18.9
Non-Incapacitating Injury	401	280	30.2
Possible Injury	153	94	38.6
Injury - Unknown Type	9	4	55.6
No Injury	1,079	733	32.1
EPDO Accidents*	5,643	4,165	
Severity Index**	2.95	3.12	

* "Equivalent Property-Damage-Only" Accidents. EPDO is equal to 9.5 times the number of fatal or incapacitating injury accidents plus 3.5 times the number of non-incapacitating or possible injury accidents plus the number of "no injury" accidents.

** Severity Index (SI) is calculated by dividing the number of EPDO accidents by the total number of accidents. As average accident severity increases, the SI increases.

TABLE 9. NUMBER OF FATALITIES AND INJURIES RESULTING FROM
ALCOHOL-RELATED ACCIDENTS IN JEFFERSON COUNTY

INJURY TYPE	OCT 1982 - SEPT 1983	OCT 1983 - SEPT 1984	OCT 1984 - SEPT 1985	OCT 1985 - SEPT 1986	OCT 1986 - SEPT 1987
Fatalities	23	24	11	16	11
Injuries	1,326	1,244	1,118	840	974
Total	1,349	1,268	1,129	856	985

TABLE 10. SUMMARY OF RESULTS FROM TIME-SERIES ANALYSIS

	MEAN ^a	STD ^b DEV.	TREND ^c	SLAM ^d PERCENT CHANGE	TAP ^e PERCENT CHANGE
Alcohol-Related Accidents					
Jefferson County	142	34	None	-6.6	-26.1*
Kentucky (Excluding Jefferson County)	560	80	-4.1	-10.4*	-6.3
Non-Alcohol Accidents					
Jefferson County	2507	291	None	0.1	-4.5
Kentucky (Excluding Jefferson County)	8732	872	4.4*	4.5	6.0
Alcohol-Related Accidents					
Jefferson Co. (TAP Hours)	89	23	None	-9.8	-27.1*
Jefferson Co. (Non-TAP Hours)	53	16	None	2.7	-31.2*

- ^a Mean--the monthly average number of alcohol-related accidents
- ^b Standard deviation--the variation among the means of monthly accidents
- ^c Trend--the pattern of the series in the months, controlling for both the Slammer Law and the TAP programs
- ^d Slam--the percentage change in the monthly number of accidents due to the implementation of the 1984 Slammer Law
- ^e TAP--the percentage change in the monthly number of accidents after the implementation of TAP

* Statistically significant change.

TABLE 11. NUMBER OF DUI ARRESTS BY MONTH*

Louisville Police Department										
Month	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	N	%	N	%	N	%	N	%	N	%
October	294	11	135	5	237	7	357	8	339	9
November	265	10	133	5	314	10	346	8	394	11
December	223	8	209	7	293	9	288	7	365	10
January	253	9	331	11	240	7	324	8	350	10
February	279	10	260	19	260	8	324	8	251	7
March	194	7	338	12	360	11	428	10	290	8
April	267	10	275	9	240	7	327	8	318	9
May	184	7	258	9	296	9	397	9	289	8
June	162	6	199	7	209	7	345	8	265	7
July	188	7	257	9	229	7	405	9	292	8
August	224	8	262	9	258	8	440	10	256	7
September	228	8	283	10	304	9	337	8	229	6
TOTAL	2,761		2,940		3,240		4,318		3,638	
Jefferson County Police Department										
Month	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
October	245	9	124	5	261	10	291	8	322	9
November	187	7	155	7	235	9	255	7	351	10
December	200	7	163	7	184	7	240	6	265	8
January	244	9	224	9	136	5	275	7	323	9
February	227	8	249	10	171	7	261	7	329	9
March	271	10	250	10	211	8	326	9	344	10
April	224	8	238	10	226	9	344	9	304	9
May	219	8	209	9	214	8	362	9	324	9
June	214	8	163	7	214	8	337	9	219	6
July	211	8	191	8	214	8	325	9	234	7
August	252	9	211	9	247	10	427	11	248	7
September	231	9	226	9	258	10	390	10	285	8
TOTAL	2,725		2,403		2,571		3,833		3,548	
Shively Police Department										
Month	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
April	17	10	15	10	16	11	57	14	24	7
May	8	5	10	6	6	4	53	13	18	5
June	10	6	10	6	5	4	31	7	31	9
July	15	8	13	8	8	5	26	6	28	8
August	18	10	9	6	8	5	20	5	22	6
September	21	12	15	10	8	5	30	7	28	8
October	26	15	9	6	19	13	34	8	38	11
November	8	5	16	10	13	9	29	7	34	10
December	12	7	16	10	11	7	45	11	37	11
January	11	6	16	10	13	9	42	10	27	8
February	14	8	13	8	9	6	32	8	28	8
March	13	8	16	10	36	24	20	5	37	11
TOTAL	173		158		152		419		352	

*Data from AOC database

Table 12. SUMMARY OF TIME-SERIES ANALYSES FOR JEFFERSON METRO-AREA
TAP PROGRAMS (JANUARY 1, 1983 - DECEMBER 31, 1987)

JURISDICTION	MEAN	STANDARD DEVIATION	TREND	SLAM PERCENT CHANGE	TAP PERCENT CHANGE
Arrests^a					
Louisville	271	64	-1.5	32.8	50.4*
Jefferson County	246	62	-.77	8.7	60.0*
Shively	21	12	1.2	61.2	92.5*
BAC level^b					
Louisville	.1593	.0130	None	-4.2	-1.8
Jefferson County	.1548	.0141	None	-3.4	-6.0*
Shively	.1635	.0230	None	2.5	5.4
Court delay (days)^b					
Louisville	58	18	None	-9.3	-12.7
Jefferson County	56	19	None	-8.9	-8.5
Shively	56	22	None	56.4*	-34.2*
Charges amended ^a	223	114	-4.1*	2.7	18.6
DUI convictions ^a	243	167	-3.0	449.2*	140.3*

^a Data from AOC database

^b Data from archive sample

* Indicates significant difference

Mean--the average number DUI arrests, the average amount of court processing time, and average blood alcohol content (BAC) levels of those tested in the series

Standard Deviation--the variation among the means of arrests, court processing times, and BAC levels in the series

Trend--the pattern of the series in the months, controlling for both the Slammer Law and the TAP programs

TAP--the percentage change in the number of arrests, amount of court processing time, and BAC levels after the implementation of TAP

SLAM--the percentage change in the number of arrests, amount of court processing time, and BAC levels due to the implementation of the 1984 Slammer Law

TABLE 13. NUMBER OF DUI ARRESTS BY DAY OF THE WEEK*

Louisville Police Department										
Day	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	N	%	N	%	N	%	N	%	%	
Sunday	404	15	455	16	517	16	697	16	603	17
Monday	234	9	224	8	257	8	230	5	189	5
Tuesday	315	11	347	12	358	11	328	8	307	8
Wednesday	337	12	366	12	409	13	602	14	493	14
Thursday	390	14	402	14	453	14	638	15	521	14
Friday	440	16	499	17	558	17	772	18	587	16
Saturday	641	23	647	22	688	21	1,051	24	938	26
TOTAL	2,761		2,940		3,240		4,318		3,638	

Jefferson County Police Department										
Day	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	%	
Sunday	427	16	396	17	415	16	716	19	659	19
Monday	209	8	202	8	251	10	239	6	186	5
Tuesday	260	10	232	10	245	10	253	7	257	7
Wednesday	366	13	283	12	304	12	397	10	370	10
Thursday	369	14	294	12	329	13	558	15	530	15
Friday	477	18	374	16	401	16	713	19	627	18
Saturday	617	23	622	26	626	24	957	25	919	26
TOTAL	2,725		2,403		2,571		3,833		3,548	

Shively Police Department										
Day	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	%	
Sunday	28	16	32	20	27	18	72	17	38	11
Monday	12	7	9	6	11	7	12	3	6	2
Tuesday	20	12	19	12	20	13	31	7	20	6
Wednesday	28	16	11	7	21	14	49	12	55	16
Thursday	24	14	27	17	14	9	70	17	54	15
Friday	26	15	23	15	18	12	78	19	79	22
Saturday	35	20	37	23	41	27	107	26	100	28
TOTAL	173		158		152		419		352	

*Data from AOC database

TABLE 14. DUI ARRESTS BY BLOOD ALCOHOL CONTENT*

Louisville Police Department										
BAC (Percent)	1-1-83 to 12-31-83		1-1-84 to 12-31-84		1-1-85 to 12-31-85		1-1-86 to 12-31-86		1-1-87 to 12-31-87	
	N	%	N	%	N	%	N	%	N	%
Zero	0	0	0	0	11	3	9	2	0	0
.01-.04	3	2	7	2	14	4	9	2	6	2
.05-.09	11	6	26	9	27	8	31	8	23	7
.10-.15	54	27	94	31	82	24	125	34	105	32
.16-.19	44	22	59	20	87	25	75	20	79	24
.20-.24	42	21	66	22	56	16	62	17	42	13
.25-.29	20	10	14	5	21	6	18	5	9	3
.30-.34	0	0	3	1	5	1	6	2	2	1
.35-.39	0	0	0	0	1	0	0	0	2	1
.40 and up	0	0	0	0	2	1	0	0	0	0
Refused	23	12	30	10	42	12	36	10	65	20
TOTAL	197		299		348		371		333	

Jefferson County Police Department										
BAC (Percent)	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
Zero	0	0	0	0	6	2	5	2	0	0
.01-.04	5	2	3	1	8	3	7	2	4	1
.05-.09	19	8	26	9	24	10	29	9	27	8
.10-.15	71	30	94	31	80	32	125	38	101	31
.16-.19	58	24	71	24	60	24	74	23	68	21
.20-.24	46	19	54	18	40	16	40	12	43	13
.25-.29	13	5	16	5	15	6	12	4	7	2
.30-.34	2	1	4	1	5	2	1	0	1	0
.35-.39	0	0	0	0	1	0	0	0	0	0
.40 and up	0	0	0	0	0	0	0	0	0	0
Refused	25	11	33	11	14	5	33	10	71	22
TOTAL	239		301		253		326		322	

Shively Police Department										
BAC (Percent)	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
Zero	0	0	0	0	3	2	3	1	0	0
.01-.04	0	0	2	2	2	2	5	2	2	1
.05-.09	2	6	11	8	9	7	21	7	9	3
.10-.15	10	29	49	36	37	30	87	29	81	29
.16-.19	10	29	35	30	30	24	69	23	66	24
.20-.24	7	20	23	17	24	19	59	20	51	18
.25-.29	2	6	8	6	5	4	24	8	18	7
.30-.34	1	3	1	1	3	2	2	1	4	1
.35-.39	0	0	0	0	0	0	0	0	1	0
.40 and up	0	0	0	0	1	1	0	0	0	0
Refused	3	9	8	6	11	9	27	9	46	17
TOTAL	35		137		125		297		278	

*Data from archive sample

TABLE 15. NUMBER OF DAYS BETWEEN DUI ARREST AND ADJUDICATION*

Louisville Police Department										
Days	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	N	%	N	%	N	%	N	%	N	%
0-10	0	0	2	0	11	1	18	1	28	1
11-20	25	1	35	2	150	7	146	5	159	6
21-30	160	9	260	13	640	29	841	30	806	31
31-40	49	3	65	3	91	4	223	8	328	13
41-50	143	8	231	12	207	9	346	12	323	12
Over 50	1,425	79	1,376	70	1,097	50	1,212	44	980	37
TOTAL	1,802		1,970		2,196		2,786		2,625	

Jefferson County Police Department										
Days	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
0-10	4	0	0	0	6	0	11	1	21	1
11-20	31	2	42	3	129	8	122	5	169	7
21-30	224	13	256	16	554	33	829	34	799	33
31-40	57	3	70	4	66	4	209	9	282	12
41-50	145	9	195	12	164	10	307	12	278	11
Over 50	1,248	73	1,045	65	754	45	956	39	912	37
TOTAL	1,709		1,608		1,673		2,434		2,461	

Shively Police Department										
Days	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
0-10	1	1	1	1	0	0	3	1	2	1
11-20	1	1	3	3	3	3	23	8	15	5
21-30	13	12	9	9	35	37	97	33	87	31
31-40	3	3	2	2	1	1	23	8	31	11
41-50	4	4	10	10	8	9	32	11	44	15
Over 50	86	80	74	75	47	50	114	39	106	37
TOTAL	108		99		94		292		285	

*Data from AOC database

TABLE 16. DUI ARRESTS BY TYPE OF ADJUDICATION*

Jefferson County District Court										
Adjudication	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	N	%	N	%	N	%	N	%	N	%
Dismissed	532	9	443	8	500	8	413	5	327	4
Not guilty	2	0	4	0	5	0	4	0	3	0
Amended	4,525	80	3,823	70	2,200	36	2,496	29	1,528	20
Probated	75	1	393	7	2,396	39	4,095	48	3,599	48
Paid fine	239	4	495	9	620	10	850	10	1,043	14
Warrant	158	3	154	3	257	4	440	5	620	8
Jail sentence	102	2	149	3	130	2	151	2	78	1
Transferred	2	0	2	0	3	0	7	0	39	1
Active	4	0	15	0	17	0	40	1	248	3
TOTAL	5,639		5,478		6,128		8,498		7,508	

*Data from AOC database

TABLE 17. DISTRIBUTION OF JAIL SENTENCES FOR DUI ARRESTEES*

Jefferson County District Court										
Sentence (Days)	10-1-82 to 9-31-83		10-1-83 to 9-31-84		10-1-84 to 9-31-85		10-1-85 to 9-31-86		10-1-86 to 9-31-87	
	N	%	N	%	N	%	N	%	N	%
Zero	15	7	19	5	279	32	237	23	10	1
1-30	49	24	120	33	358	41	522	52	438	63
31-60	19	9	35	10	19	2	22	2	7	1
61-90	58	28	92	25	61	7	75	7	59	9
91-180	29	14	43	12	99	11	96	10	108	16
181-365	20	10	31	8	35	4	36	4	37	5
Over 365	15	7	29	8	24	3	23	2	32	5
TOTAL	205		369		875		1,011		691	
Mean	90 days		92 days		53 days		51 days		72 days	

*Data from archive sample

TABLE 18. DISTRIBUTION OF FINES FOR DUI ARRESTEES*

Fine	Jefferson Court District Court									
	10-1-82 to 9-31-83		10-1-83 to 9-31-84		10-1-84 to 9-31-85		10-1-85 to 9-31-86		10-1-86 to 9-31-87	
	N	%	N	%	N	%	N	%	N	%
Less than \$100	8	2	6	1	11	1	11	1	6	1
\$100-\$150	230	44	258	37	87	11	132	14	87	10
\$151-\$200	224	43	271	39	157	20	174	18	216	24
\$201-\$300	47	10	127	18	334	43	429	45	381	43
Over \$300	9	2	38	6	183	24	209	22	197	22
TOTAL	518		700		772		955		87	
Mean	\$171		\$188		\$234		\$241		\$254	

*Data from archive sample

TABLE 19. AVERAGE FINE AND JAIL SENTENCE LEVIED ON FIRST AND REPEAT
DUI OFFENDERS^a

Date	Jefferson County District Court		T-VALUE
	FIRST OFFENDERS	REPEAT OFFENDERS	
Oct, '82 - Sept, '83			
Fine	\$180	\$275	2.17*
Jail sentence (days)	62	190	2.8*
Oct, '83 - Sept, '84			
Fine	233	264	1.04
Jail sentence	63	192	4.10*
Oct, '84 - Sept, '85			
Fine	243	344	12.36*
Jail sentence	26	140	15.68*
Oct, '85 - Sept, '86			
Fine	239	366	19.31*
Jail sentence	23	134	19.51*
Oct, '86 - Sept, '87			
Fine	221	355	18.78*
Jail sentence	27	142	5.42*

^a Data from archive sample.

* Denotes significant difference.

TABLE 20. DUI ARRESTS BY DRIVER'S AGE*

Louisville Police Department										
AGE (Years)	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	N	%	N	%	N	%	N	%	N	%
16-20	254	9	234	8	181	6	261	6	208	6
21-24	502	18	525	18	572	18	737	17	646	18
25-29	586	21	624	21	754	23	990	23	870	24
30-39	701	26	840	29	870	27	1,280	30	1,026	28
40-49	358	13	358	12	458	14	568	13	556	15
50-59	256	9	239	8	272	8	289	7	206	6
Over 59	87	3	102	4	122	4	169	4	116	3
TOTAL	2,744		2,922		3,229		4,294		3,628	

Jefferson County Police Department										
AGE (Years)	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
16-20	287	11	231	10	197	8	283	7	256	7
21-24	500	19	455	19	480	19	793	21	653	19
25-29	564	21	493	21	526	21	909	24	860	24
30-39	710	26	631	27	712	28	1,085	29	1,052	29
40-49	384	14	311	13	360	14	430	11	434	12
50-59	187	7	185	8	194	8	230	6	186	5
Over 59	67	3	70	3	87	3	81	2	90	3
TOTAL	2,699		2,276		2,556		3,811		3,531	

Shively Police Department										
AGE (Years)	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	N	%	N	%	N	%	N	%	N	%
16-20	11	6	8	5	8	5	9	2	9	3
21-24	37	21	32	20	33	22	56	13	41	12
25-29	40	23	35	22	31	20	100	24	84	24
30-39	45	26	45	29	45	30	143	34	130	37
40-49	21	12	18	11	23	15	62	15	56	16
50-59	15	9	14	9	6	4	33	8	19	5
Over 59	4	3	6	4	6	4	16	4	10	3
TOTAL	173		158		152		419		349	

*Data from AOC database

TABLE 21. DUI ARRESTS BY DRIVER'S RACE AND SEX*

Louisville Police Department										
	10-1-82 to 9-30-83		10-1-83 to 9-30-84		10-1-84 to 9-30-85		10-1-85 to 9-30-86		10-1-86 to 9-30-87	
	Percent		Percent		Percent		Percent		Percent	
Race	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	N=2746		N=2914		N=3228		N=4286		N=3614	
White	71	8	70	8	67	8	64	11	66	12
Nonwhite	20	1	21	1	24	1	24	2	20	2

Jefferson County Police Department										
	N=2713		N=2372		N=2557		N=3814		N=3528	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
White	86	9	82	10	83	9	80	11	77	13
Nonwhite	6	0	7	1	8	1	9	0	9	1

Shively Police Department										
	4-1-82 to 3-31-83		4-1-83 to 3-31-84		4-1-84 to 3-31-85		4-1-85 to 3-31-86		4-1-86 to 3-31-87	
	Percent		Percent		Percent		Percent		Percent	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	N=172		N=155		N=150		N=419		N=350	
White	79	9	83	9	80	10	77	8	71	7
Nonwhite	12	1	8	0	9	1	14	1	21	1

*Data from AOC database

TABLE 22. DUI DRIVERS BY LICENSE STATUS*

Louisville Police Department				
License Status	10-1-82 to 9-30-85		10-1-85 to 9-30-87	
	N	%	N	%
Valid	229	77	261	85
Revoked	67	23	48	16
On probation	1	0	0	0
TOTAL	297		309	

Jefferson County Police Department				
Valid	186	87	240	86
Revoked	27	13	39	14
On probation	0	0	1	0
TOTAL	213		280	

Shively Police Department				
License Status	4-1-82 to 3-31-85		4-1-85 to 3-31-87	
	N	%	N	%
Valid	91	78	209	81
Revoked	25	22	47	18
On probation	1	1	1	0
TOTAL	117		257	

*Data from archive sample

TABLE 23. SUMMARY OF PRIOR DUI CONVICTIONS

Louisville Police Department				
Number	10-1-82 to 9-31-85		10-1-85 to 9-31-87	
	N	%	N	%
Zero	219	67	233	68
One or more	107	33	111	32
TOTAL	326		344	

Jefferson County Police Department				
Number	10-1-82 to 9-31-85		10-1-85 to 9-31-87	
	N	%	N	%
Zero	178	74	230	72
One or more	63	26	89	28
TOTAL	241		319	

Shively Police Department				
Number	4-1-82 to 3-31-85		4-1-85 to 3-31-87	
	N	%	N	%
Zero	79	66	187	67
One or more	41	34	94	34
TOTAL	120		281	

** Data from archive sample

TABLE 24. SUMMARY OF COSTS AND BENEFITS

=====	
A. COSTS	
1. Police Enforcement, Administrative, and Support Costs	\$1,715,880
2. Jail Costs	2,571,400
3. DUI Court Costs	928,986
4. Court Costs - Other Violatons and Arrests	
5. Total	5,216,266
B. BENEFITS AND INCOME	
1. Reduced Accident Costs	10,846,400* 25,725,780**
2. DUI Fines (Including Court Costs)	3,832,603
3. Other Traffic Violations and Public Intoxication Arrests (Including Court Costs)	
4. Total	14,679,003* 29,558,383**
C. BENEFIT - COST RATIO*	2.81
D. BENEFIT - COST RATIO**	5.67
E. DIRECT INCOME/COSTS	0.73

* Benefits from reduced accident costs based on National Safety Council costs (Reference 8).

** Benefits from reduced accident costs based on data presented in FHWA Technical Advisory T 7570.1, June 30, 1988; "Motor Vehicle Accident Costs" (Reference 10).

TABLE 25. SUMMARY OF RESPONSES TO QUESTIONNAIRE

QUESTION	PERCENT ANSWERING YES
Aware of TAP	96.0
Driven when ability impaired due to alcohol	30.9
*Chances of arrest greater due to TAP	78.7
*TAP has affected driving habits	73.7
*TAP has reduced chances of a accident	71.9
TAP has increased chances of arrest for drivers who drink	91.1
TAP has reduced chances of alcohol-involved accident	81.5
TAP has violated rights of drivers	13.8
Increased enforcement effective to reduce drinking and driving	87.1
Willing to support increased enforcement after funding for TAP is discontinued	72.1
Opinion of TAP	
Strongly in favor	59.3
In Favor	30.3
Against	4.9
Strongly against	3.0
No opinion	2.5

* Applies to respondents who answered yes to question if they had driven when their ability was impaired due to alcohol.

TABLE 26. SUMMARY OF VARIOUS CRITERIA OF SUCCESS

CRITERIA	
Percent change in alcohol-related accidents (all hours)	-30.4
Percent change in alcohol-related accidents (Time-Series Analysis)	-26.1
Percent change in alcohol-related accidents during TAP hours	-34.4
Percent impact in alcohol-related accidents during TAP hours (Time-Series Analysis)	-27.1
Percent change in alcohol-related fatal or injury accidents	-26.3
Percent increase in DUI arrests	
Louisville	50.4
Jefferson County	60.0
Shively	92.5
Percent increase in DUI convictions (percent change)	
Slammer Law	449.2
TAP	140.3
Percent change in Average BAC (DUI arrests)	
Louisville	-1.8
Jefferson County	-6.0
Shively	5.4
Benefit-cost ratio of program*	2.81
Benefit cost ratio of program**	5.67
Percent indicating they are in favor of TAP	89.6
Percent that feel TAP has reduced chances of alcohol-involved accident	81.5
Percent that feel TAP is effective in reducing drinking and driving	87.1

* Benefits based on National Safety Council costs (Reference 8).

** Benefits based on cost data presented in FHWA Technical Advisory T 7570.1, "Motor Vehicle Accident Costs", June 30, 1988 (Reference 10).

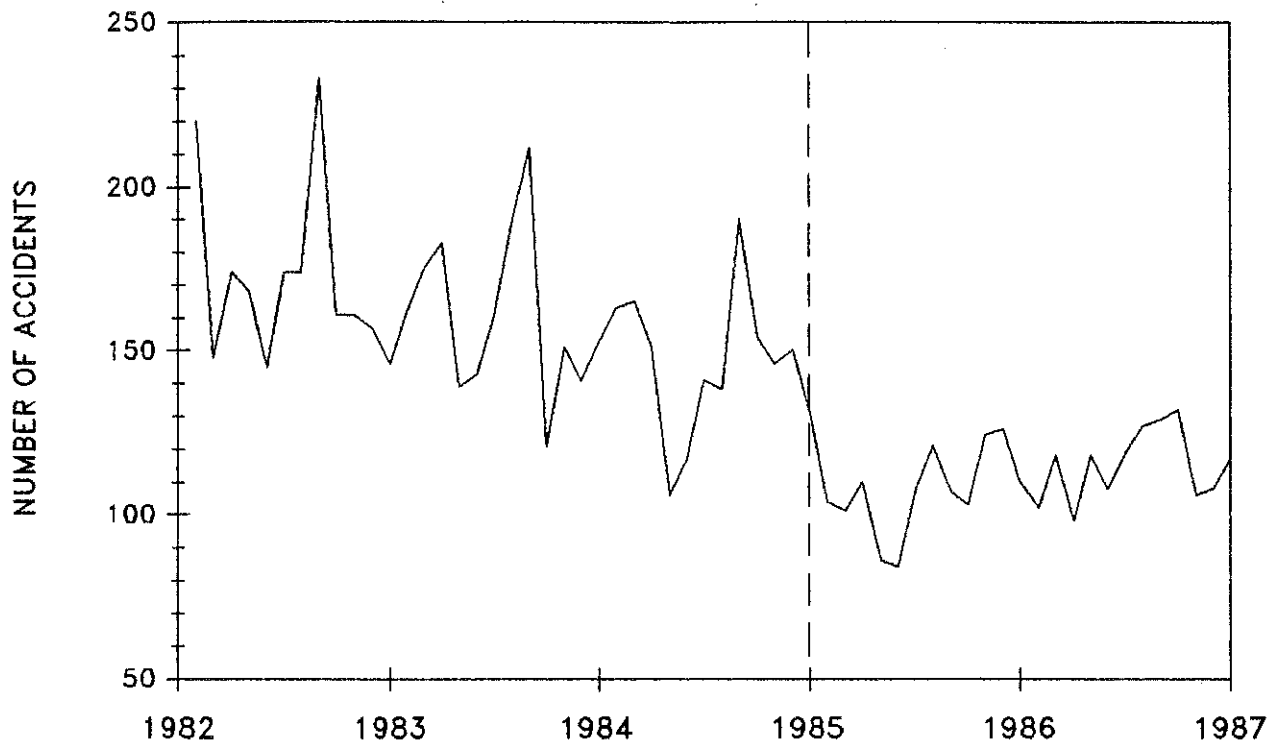


Figure 1. Alcohol-Related Accidents by Month (Jefferson County)

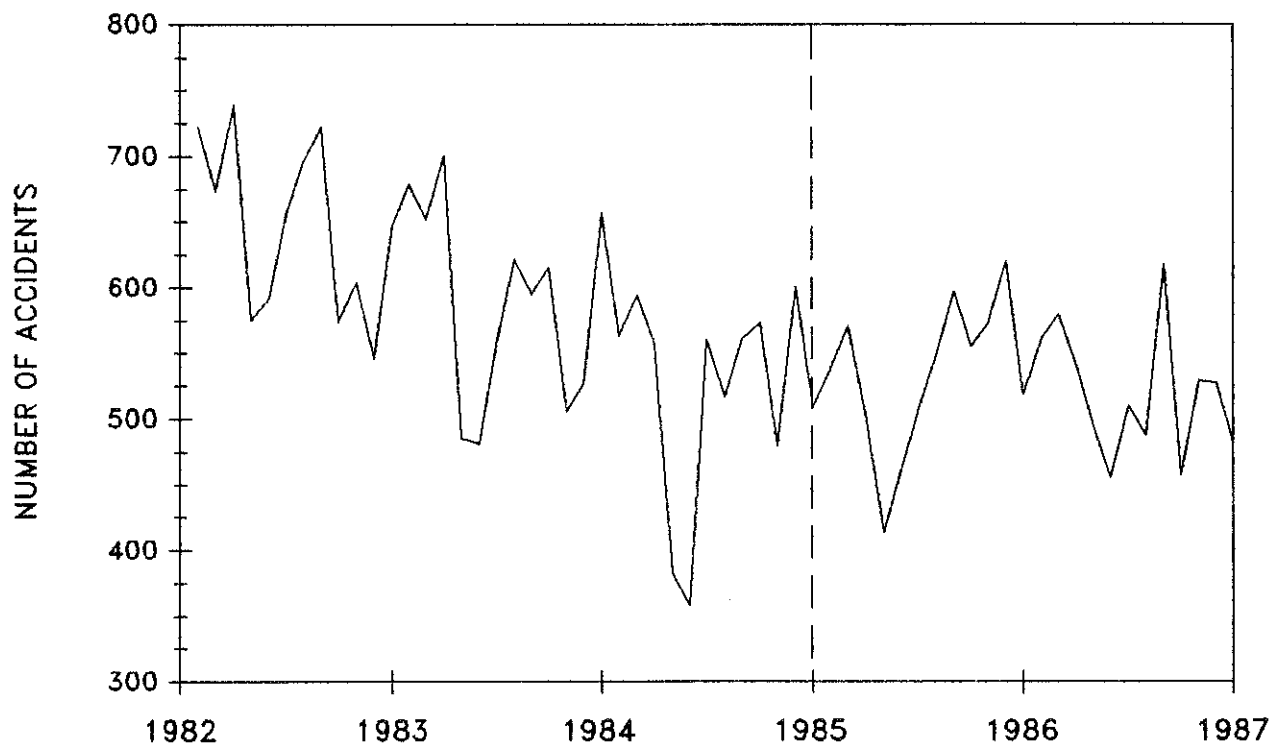


Figure 2. Statewide Alcohol-Related Accidents By Month (Excluding Jefferson County)

--- Implementation of Tap (October 1985)

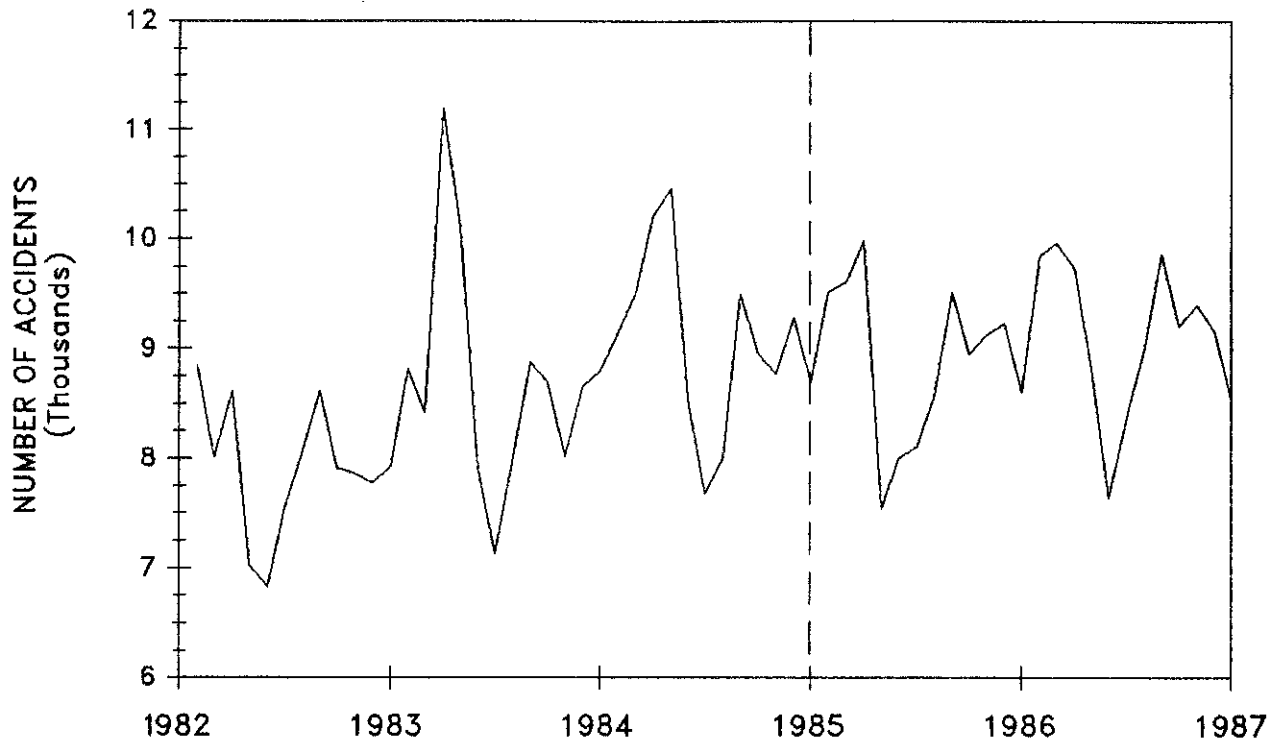


Figure 3. Statewide Total Accidents by Month
(Excluding Jefferson County)

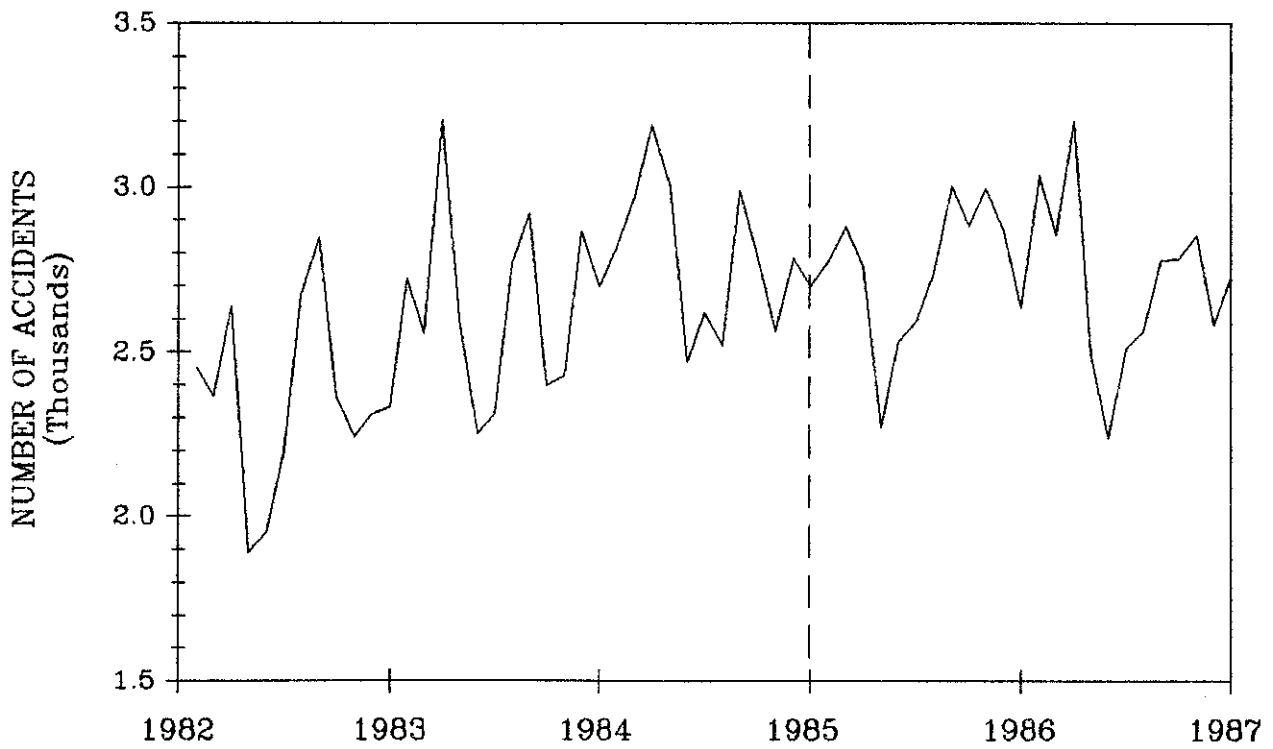


Figure 4. Total Accidents by Month
(Jefferson County)

--- Implementation of Tap (October 1985)

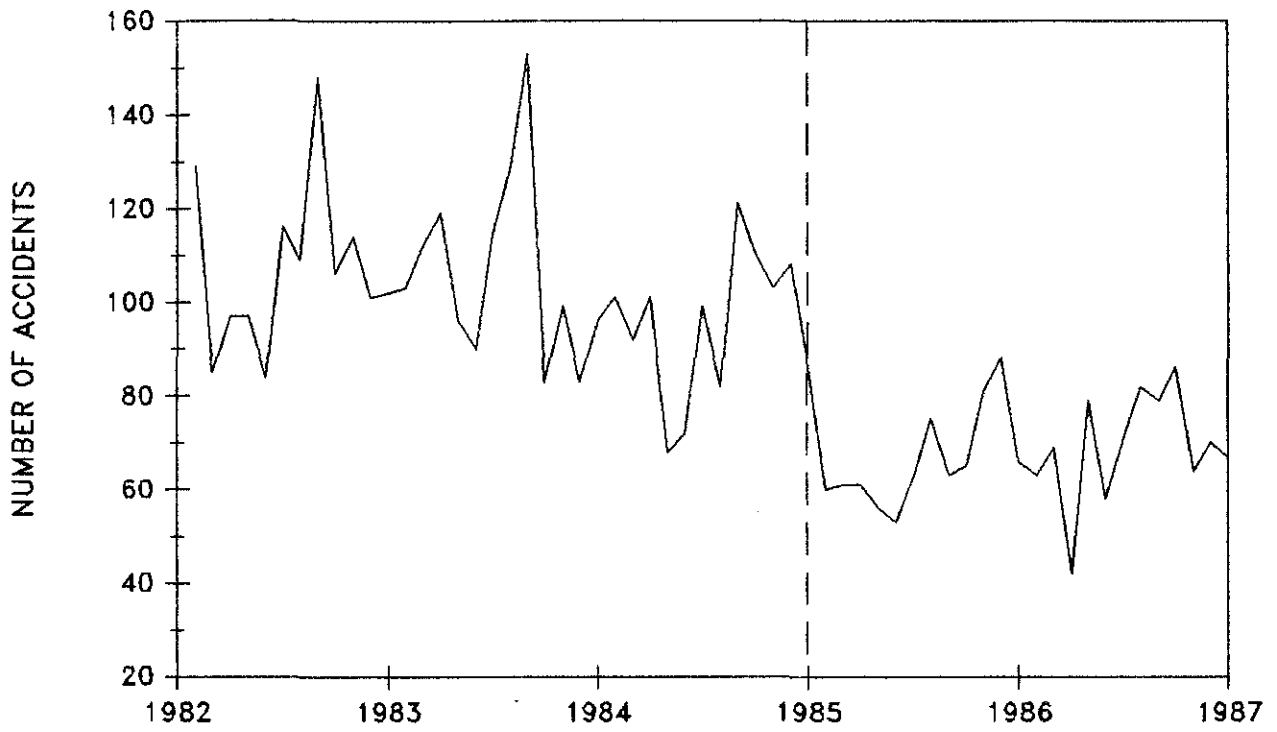


Figure 5. Alcohol-Related Accidents During Tap Hours (10:00 - 8:00 AM) by Month

--- Implementation of Tap (October 1985)

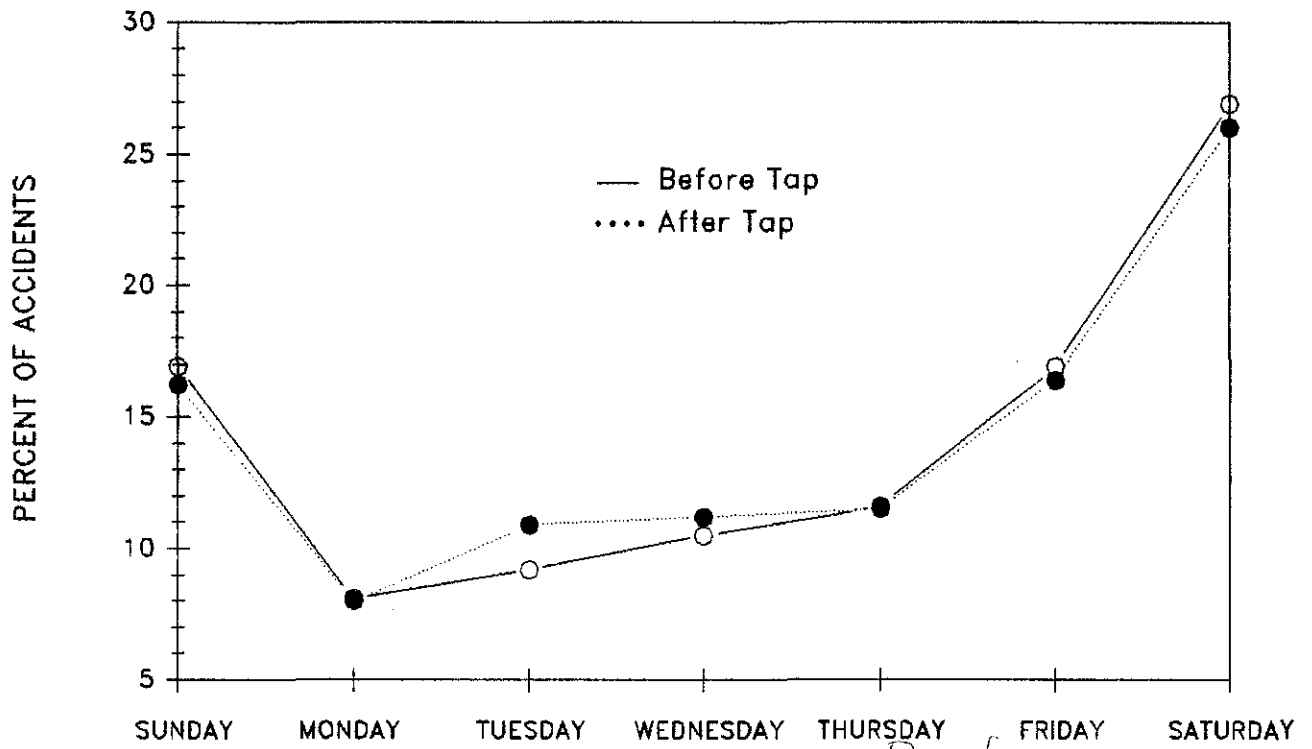


Figure 6. Alcohol-Related Accidents by Week

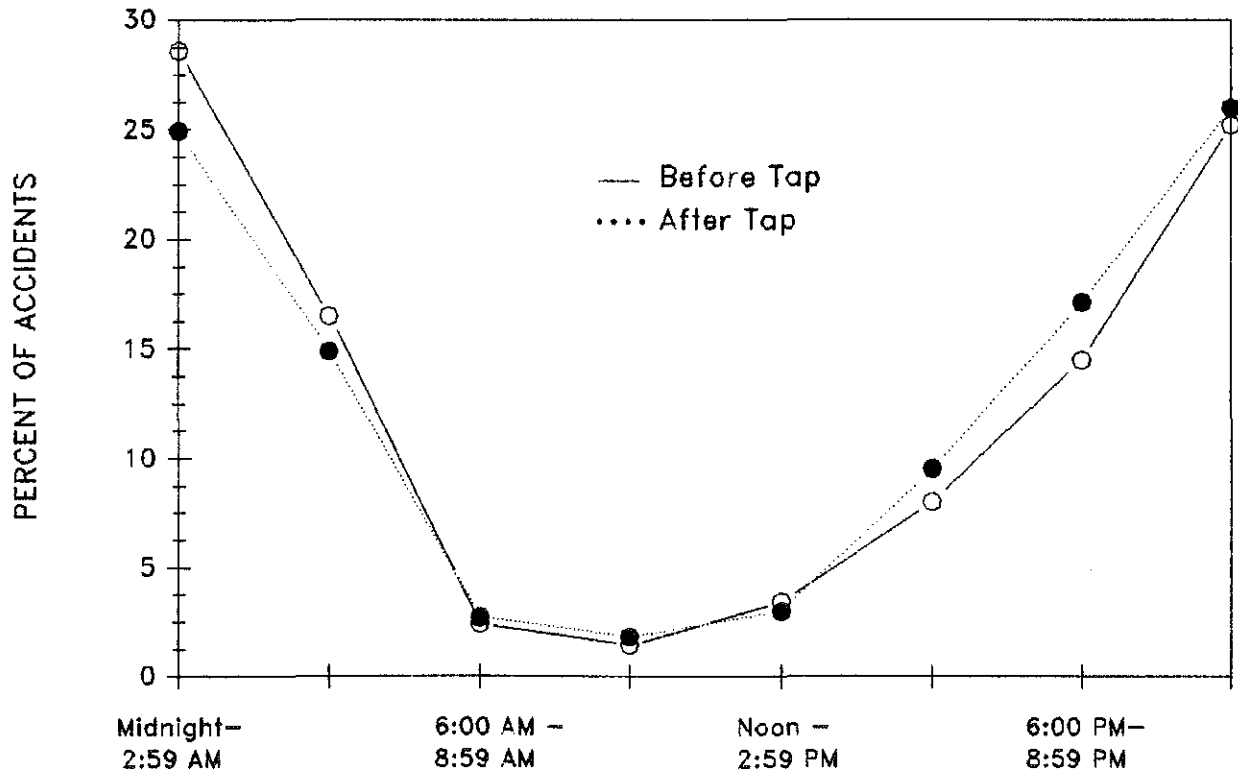


Figure 7. Alcohol-Related Accidents by Time of Day

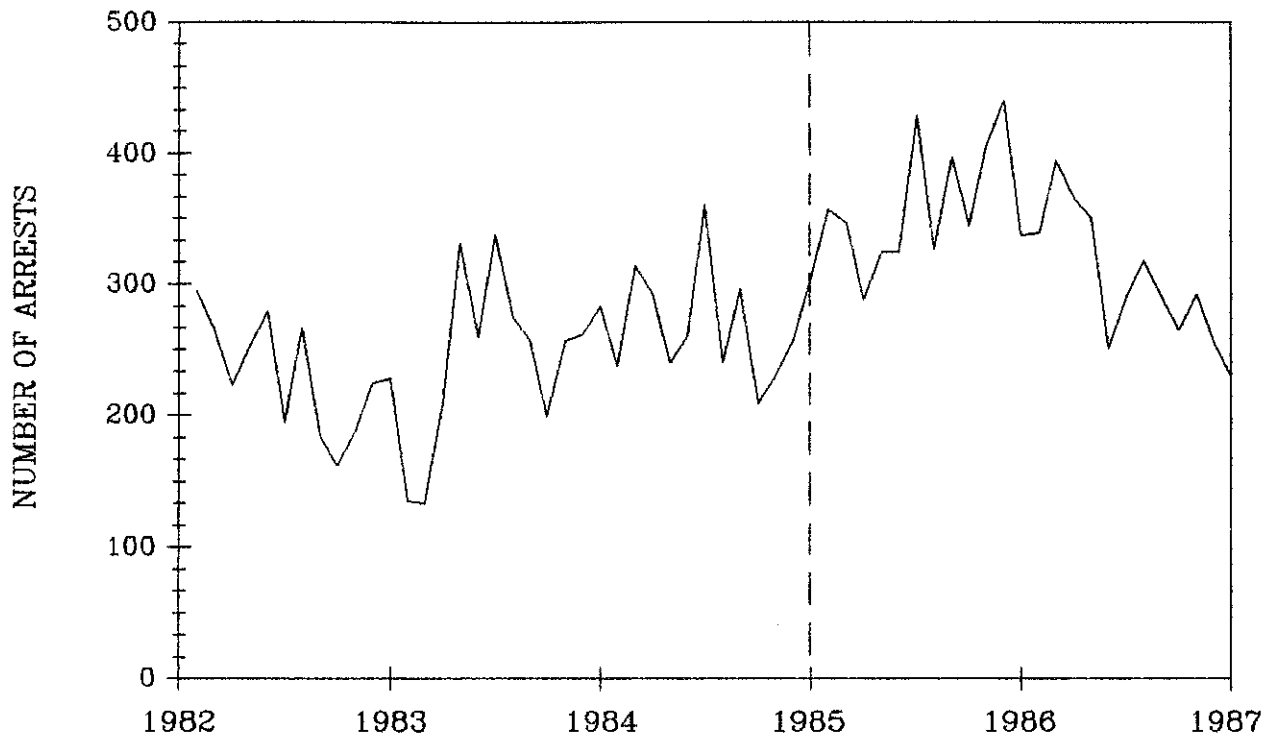


Figure 8a. Number of DUI Arrests by Month
(Louisville Police Department)

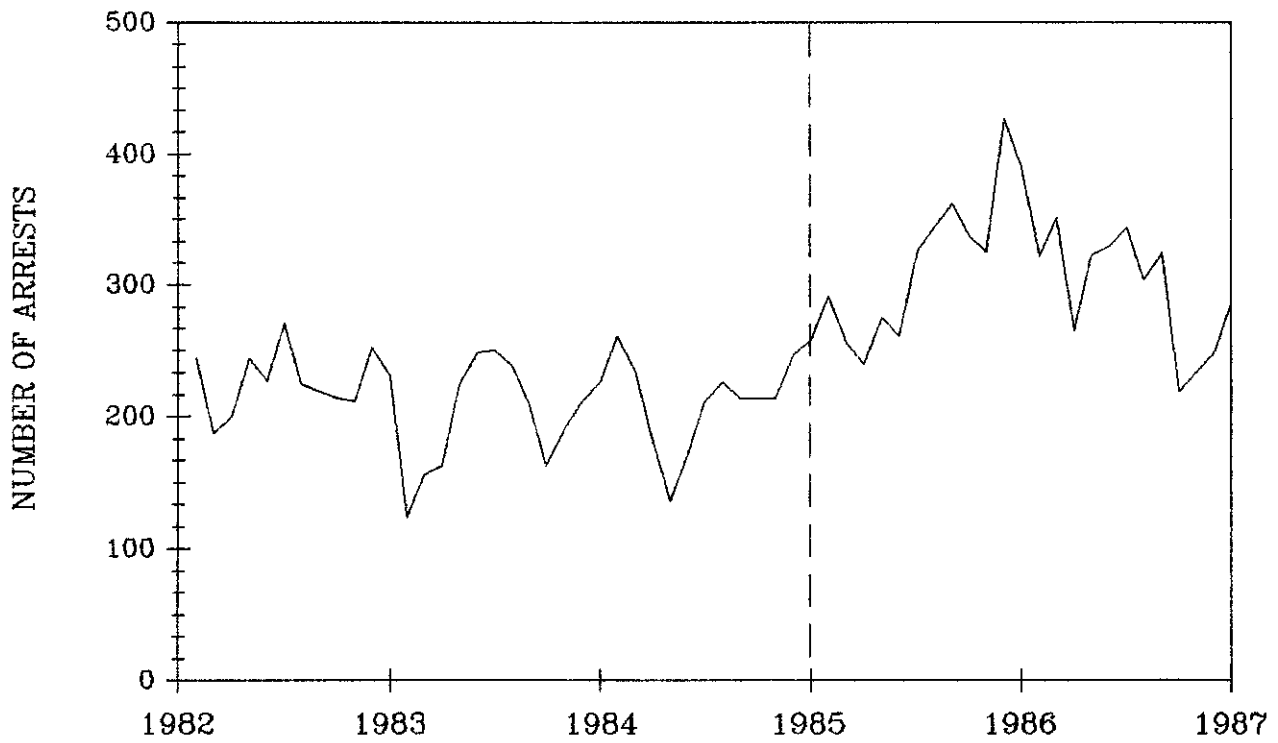


Figure 8b. Number of DUI Arrests by Month
(Jefferson County Police Department)

--- Implementation of Tap (October 1985)

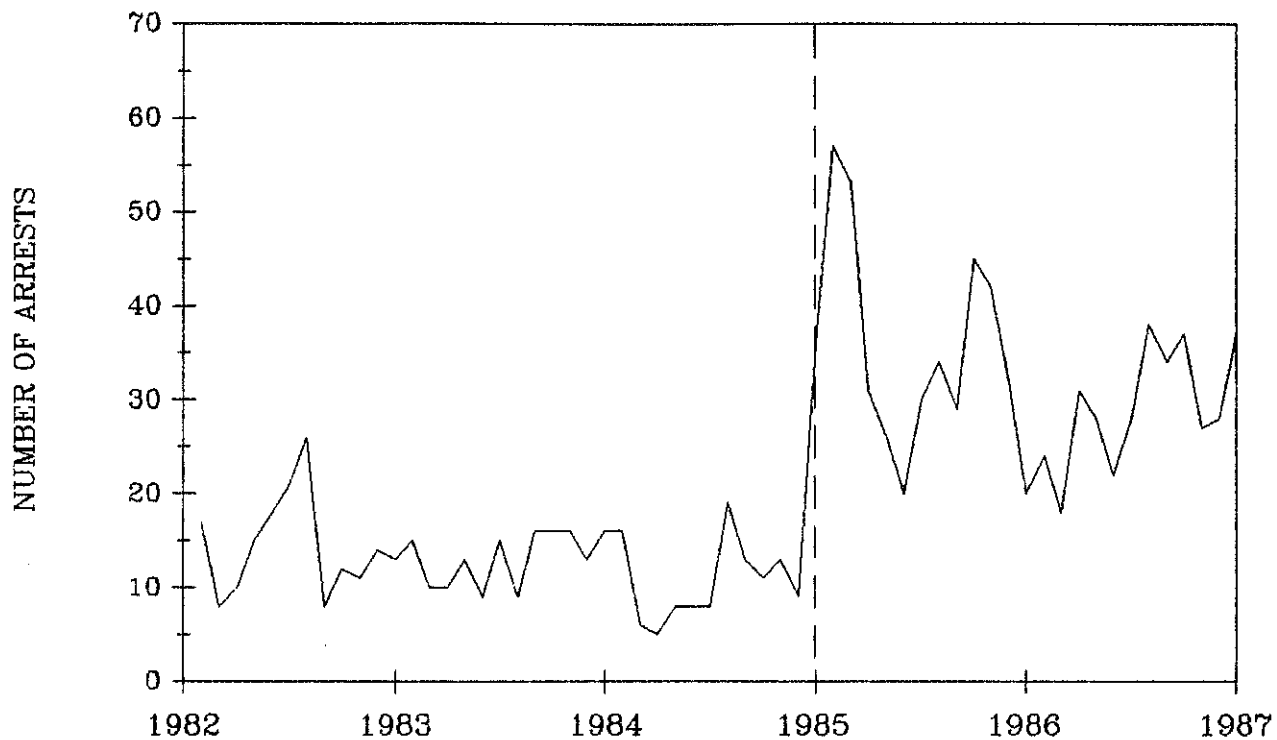


Figure 8c. Number of DUI Arrests by Month
(Shively Police Department)

--- Implementation of Tap (April 1985)

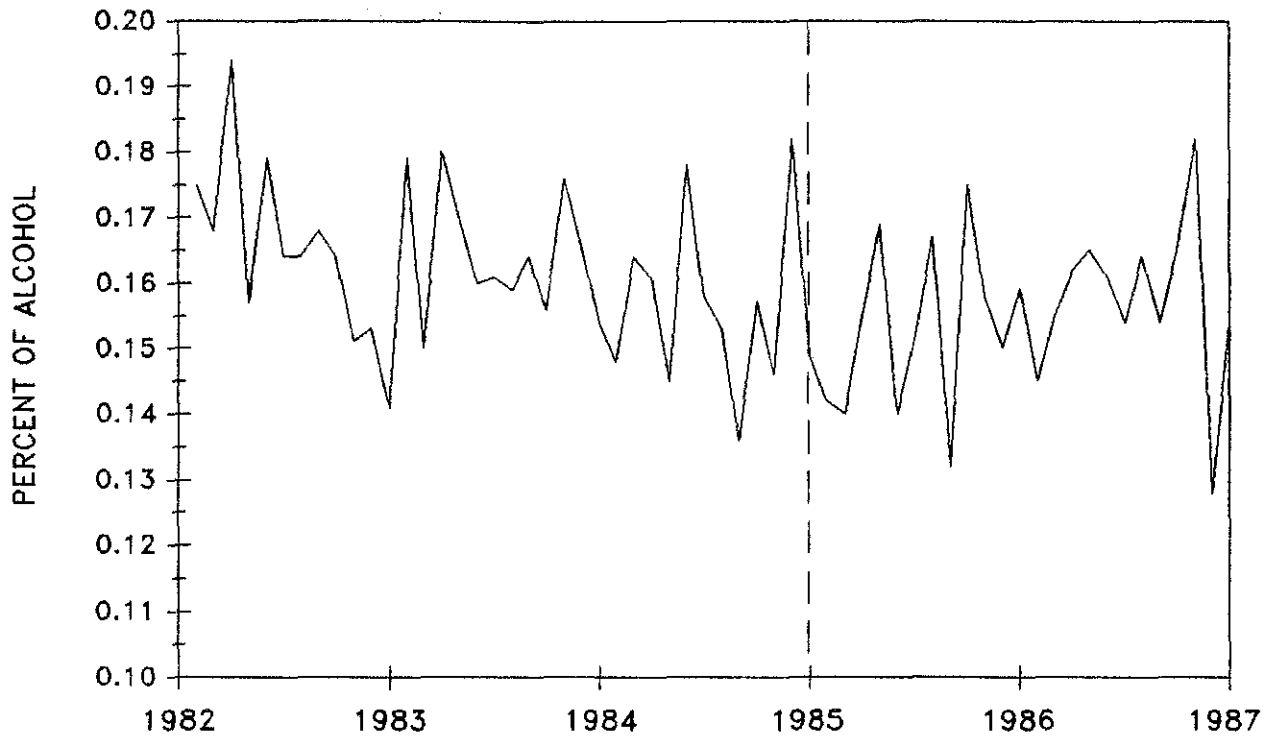


Figure 9a. Blood Alcohol Content by Month (Louisville)

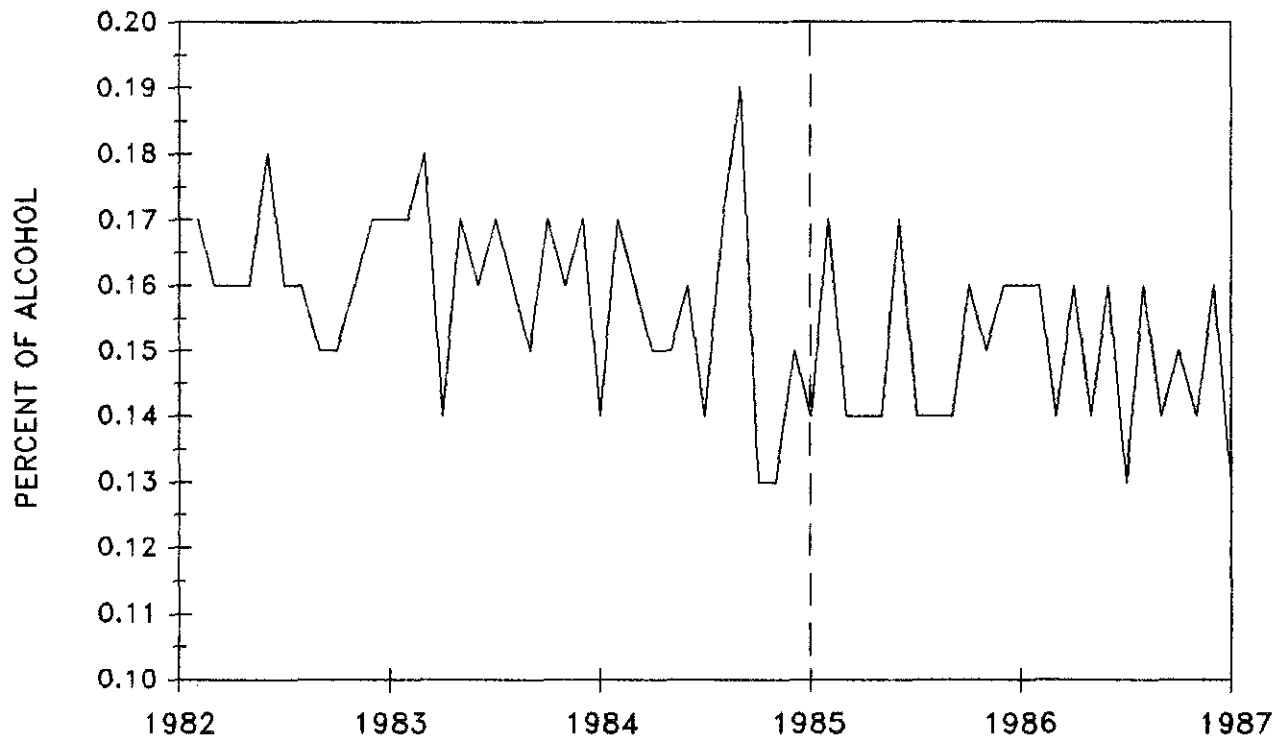


Figure 9b. Blood Alcohol Content by Month (Jefferson County)

--- Implementation of Tap (October 1985)

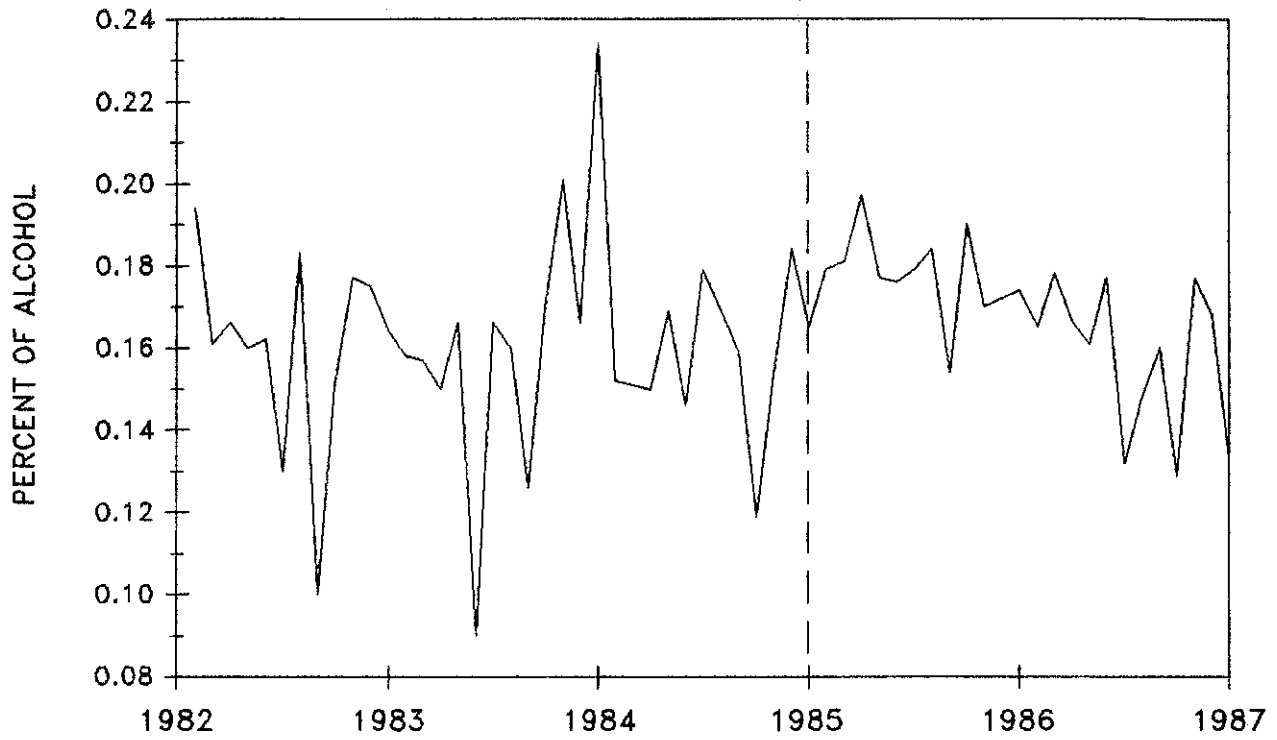


Figure 9c. Blood Alcohol Content by Month
(Shively)

--- Implementation of Tap (April 1985)

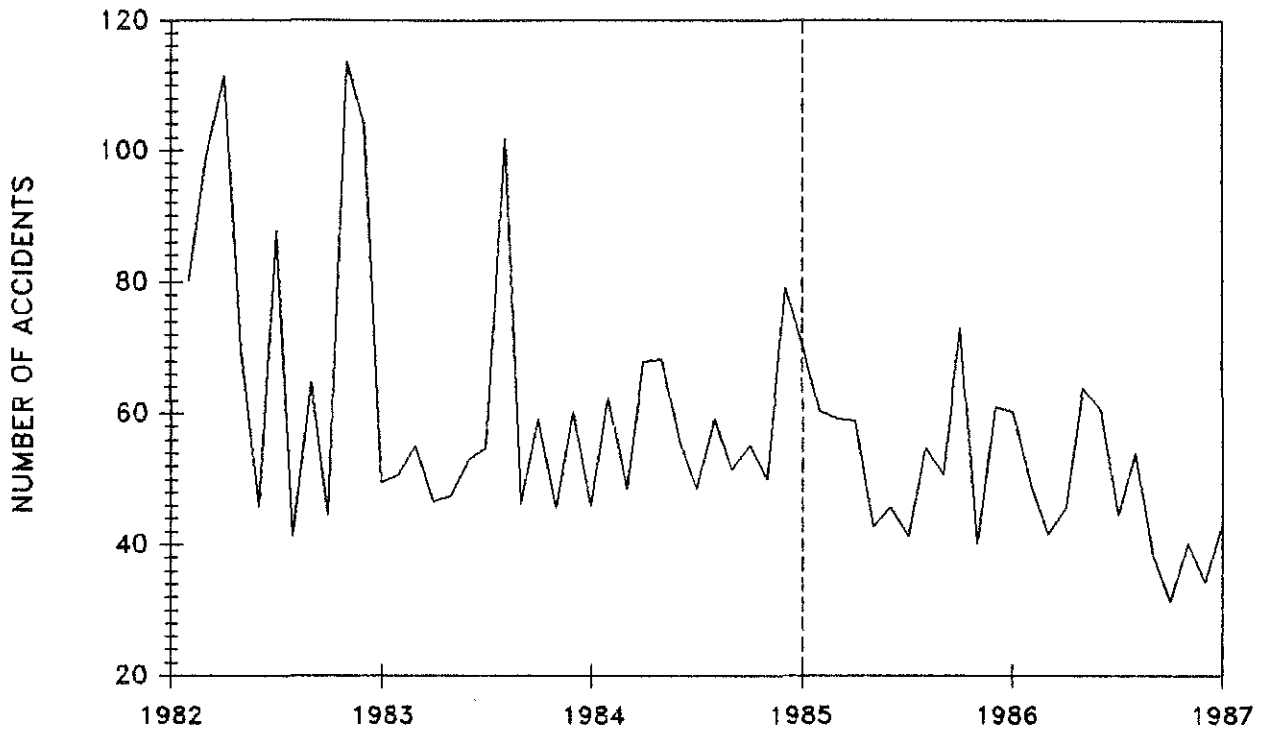


Figure 10a. Adjudication Delay by Month (Louisville)

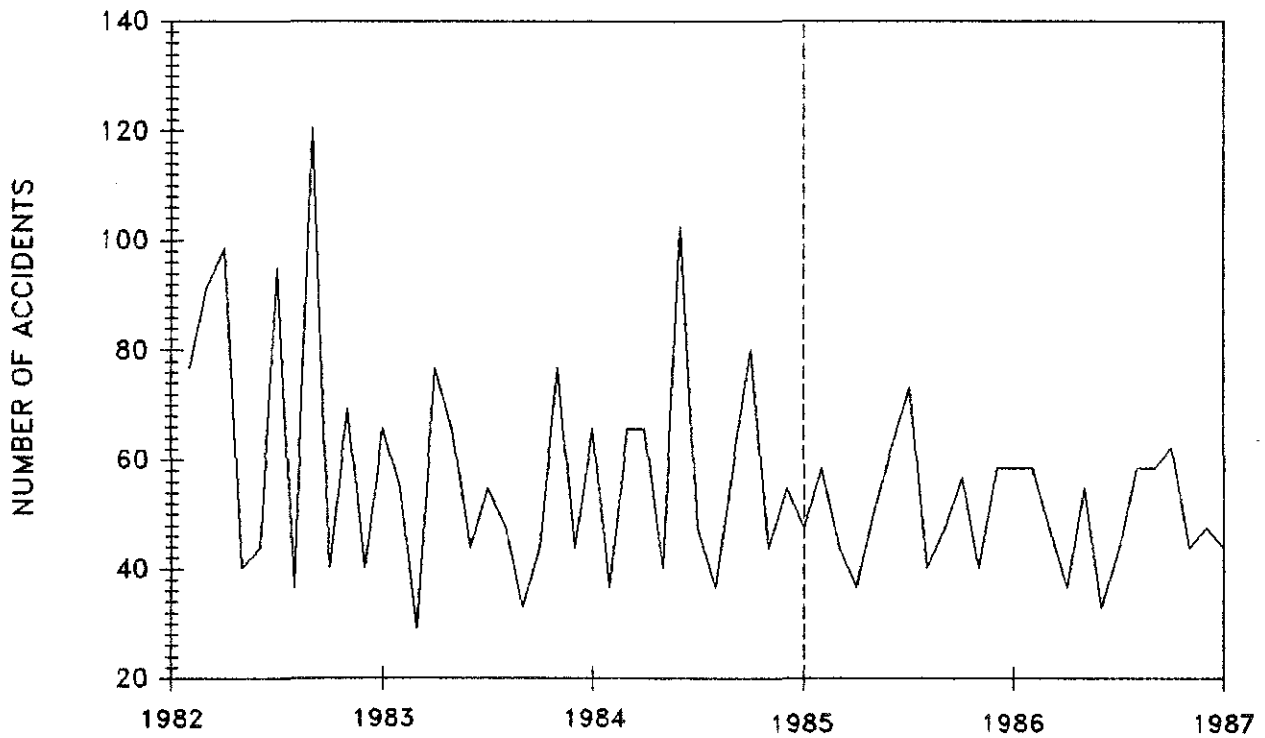


Figure 10b. Adjudication Delay by Month (Jefferson County)

--- Implementation of Tap (October 1985)

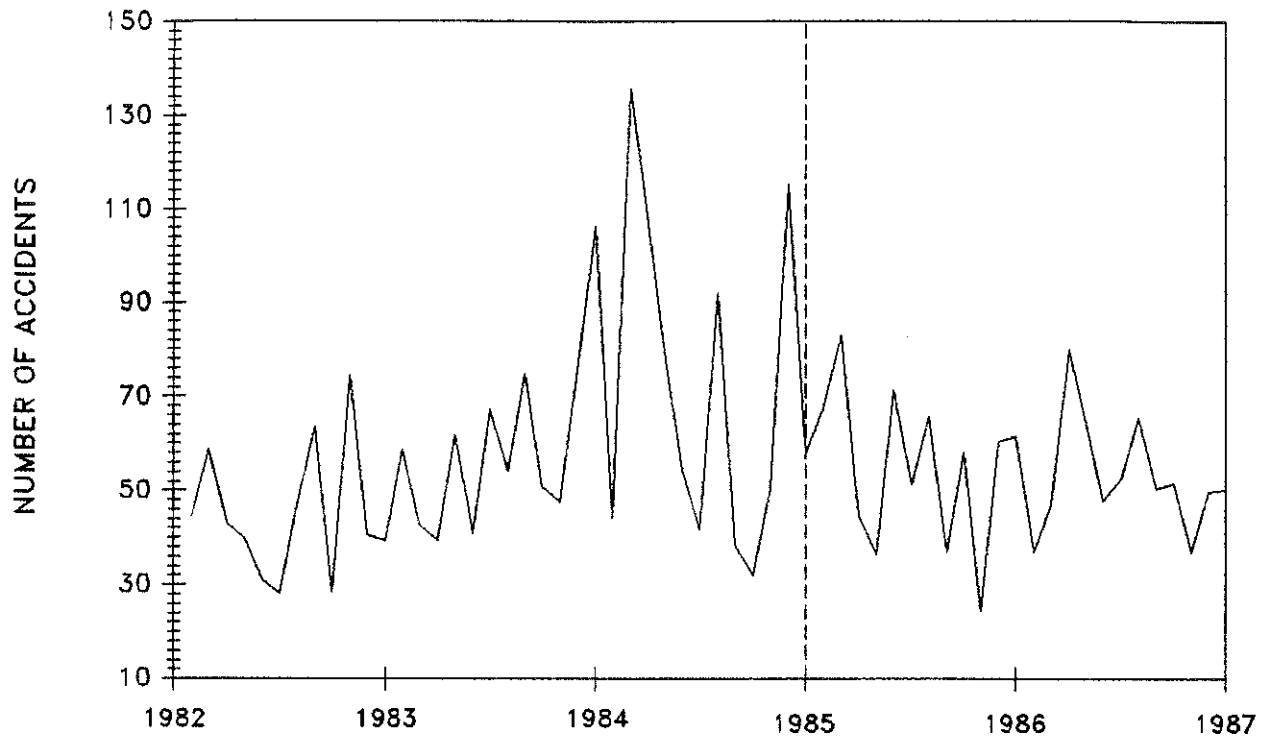


Figure 10c. Adjudication Delay by Month (Shively)

--- Implementation of Tap (April 1985)

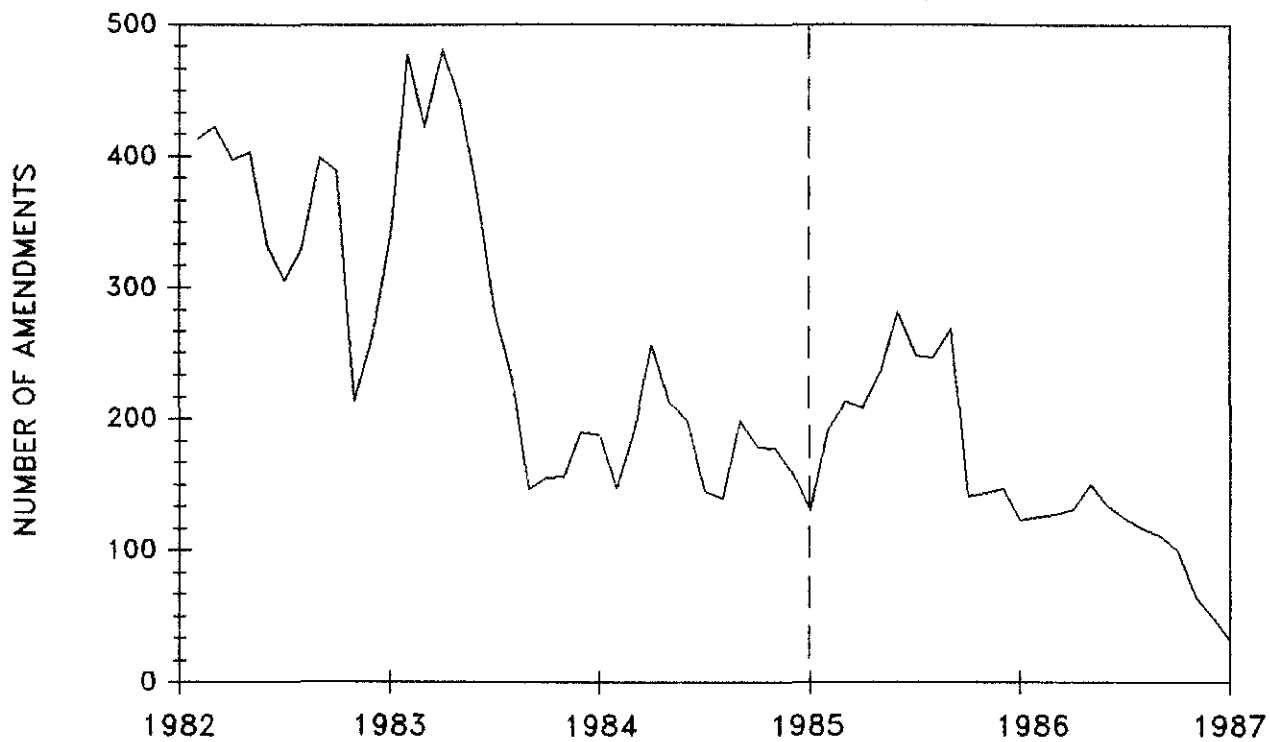


Figure 11. Trend in Amendments
(Combined Jurisdictions)

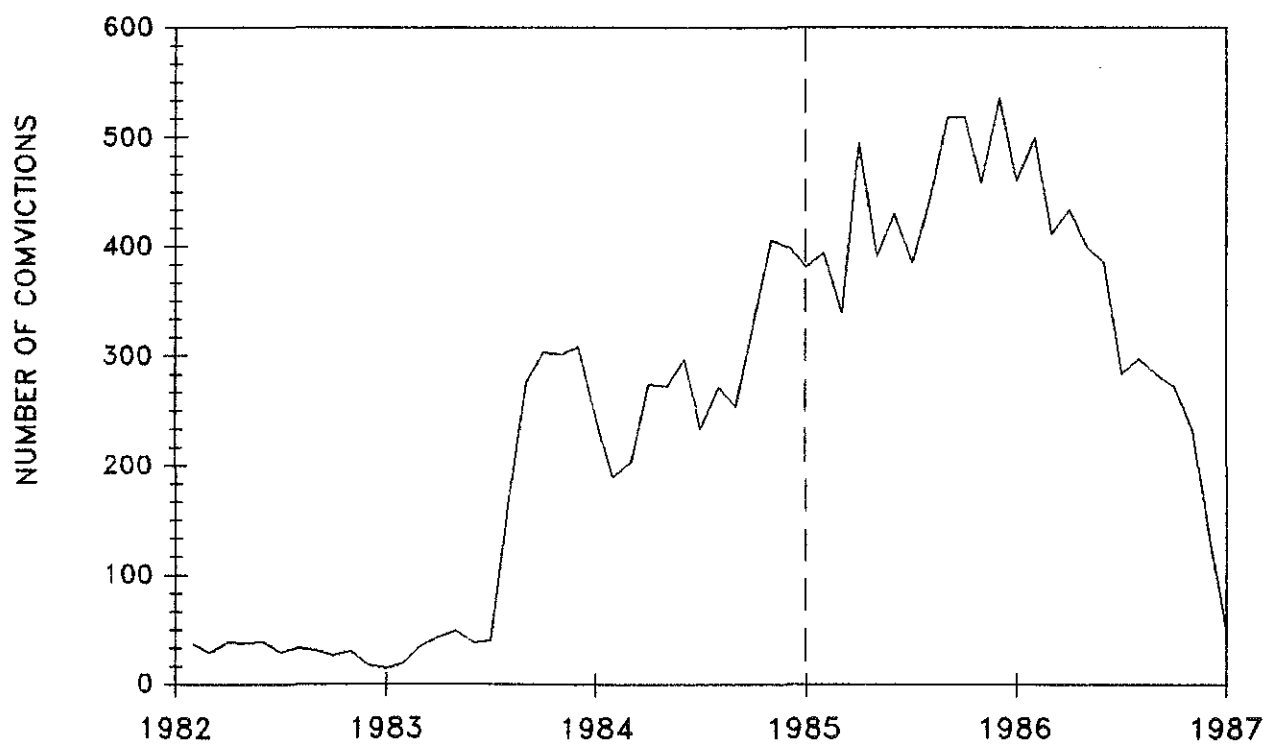


Figure 12. Trend in DUI Convictions
(Combined Jurisdictions)

--- Implementation of Tap (October 1985)

APPENDIX A

Changes in DUI Statutes
1984 GENERAL ASSEMBLY
(SENATE BILL 20)

I. SENTENCING SANCTIONS

A. First Offense

Existing Law

Fine & Jail Time: \$200-\$500 or 48 hrs - 30 days (or both)

Community Service: 2 - 30 days (defendant may apply to the judge following sentencing to jail or a fine to do community labor in lieu of fine or jail, provided his offense did not involve personal injury to another)

Loss of License: 30 days with education/treatment (or)
6 months without education/treatment

Services Cost: \$150 service fee

Other Comments: At least one penalty cannot be suspended or probated;

At least 48 hours mandatory jail time if person other than driver suffered physical injury as result of the offense.

\$100-\$500 (probable)
No Jail Time Required

None

6 months, may be waived
if attend ADE

Pay \$25 if go to ADE

B. Second Offense

Fine: \$350 - \$500
Jail Time: 7 days - 6 months (7 days not suspendable)
Community Service: 10 days - 6 months (may be assessed in addition to fine and jail)
Loss of License: 12 months
Services Cost: \$150 service fee
Other Comments: Court can establish terms of probation

Existing Law

\$100-\$500 (probable)
3 days-6 months (probable)
May be given as part of probation
1 year
None
Court can establish terms of probation

C. Third Offense

Fine: \$500 - \$1,000
Jail Time: 30 days - 1 year (30 days not suspendable)
Community Service: 10 days - 1 year (May be assessed in addition to fine and jail)
Loss of License: 2 years
Services Cost: \$150 service fee

\$100-\$500 (probable)
30 days - 1 year (probable)
May be given as condition of probation
At least 2 years
None

D. Other Sentencing Recommendations

First and second offenders may serve terms of imprisonment on non-working days in 24 hour periods.

Juveniles convicted have licenses revoked until age 18, or as otherwise provided, whichever period is longer.

Juveniles detained for traffic offenses must be detained in a ward separate from adult prisoners.

Existing Law

No reference as to when sentence may be served.

Juveniles treated same as adults.

Juveniles can be held in jail for traffic offenses.

II. TREATMENT

A. First Offense

Length: Optional 90 day education program to reduce license suspension period from 6 months to 30 days.

Cost: Offender pays cost

Penalty for Non-Completion: License suspension is 6 months rather than 30 days.

Existing Law

Optional education program

Offender pays cost

Court may revoke license for 6 months

B. Second Offense

Existing Law

Length:	1 year (early release possible)	None
Cost:	Offender pays cost	None
Penalty for Non-Completion:	Failure to complete constitutes contempt of court and court may impose any suspended penalty	None

C. Third Offense

Existing Law

Length:	1 year (in-patient treatment required -- (person may be released early from in-patient treatment, but not from program)	None
Cost:	Offender pays cost	None
Penalty for Non-Completion:	Failure to complete constitutes contempt of court and court may impose any suspended penalty	None

III. PENALTIES FOR DRIVING ON REVOKED LICENSE

A. First Offense

Existing Law

Class B Misdemeanor: \$250 fine, 90 days jail, or both
License revocation time doubled

**\$12 - \$500 fine (probatable) and/or
6 months in jail (probatable)**

B. Second Offense

Class A Misdemeanor: \$500 fine, 1 year jail, or both
License revocation time doubled

Same as penalty for first offense

C. Third Offense or More

Class D Felony: \$10,000 fine, 1-5 years prison, or both
License revocation time doubled

Same as penalty for first offense

IV. DEFINITION

**Refers to alcohol or any other substance which may impair
one's driving ability.**

Refers to alcohol and any drug

V. DETECTION AND ARREST

Permits use of PBT in addition to other testing procedures

Permits use of multiple testing for detection

Allows probable cause arrest

Allows video taping of sobriety tests under certain conditions

VI. AMENDMENT OF CHARGE

When blood alcohol reading is .10% or above, if prosecution moves to amend the charge, it must give reasons for such motion and court must record its reasons for granting amendment of the charge.

When blood alcohol reading is .15% or above, prosecutor must oppose the amendment of DUI charge, unless all prosecution witnesses will be unavailable for trial.

Existing Law

Use of PBT counts as the one test given

Only one chemical test can be given

No probable cause arrest

No similar provision

No provision restricting dismissal or amendment of charge

VII. PRE-TRIAL LICENSE REVOCATION

Authorized on court order upon motion of prosecution in certain cases

No pre-trial license revocation

OTHER CHANGES:

Allows DUI victims to be eligible for victim compensation funds

DUI victims not eligible for victim compensation funds

Includes DUI deaths in murder and second degree manslaughter statutes

DUI included in involuntary manslaughter by inference

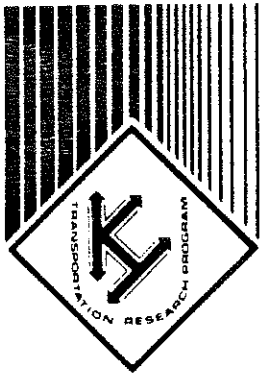
Permits new applicants for a learner's permit to attend Transportation Cabinet's driver improvement program

No information on drug, and/or alcohol use and driving included in booklet or in the examination

Provides that a person arrested for DUI who shows a blood alcohol reading of .15% or more be detained in custody for at least 4 hours following his arrest

No such provision

APPENDIX B



KENTUCKY TRANSPORTATION RESEARCH PROGRAM

UNIVERSITY OF KENTUCKY

College of Engineering
Transportation Research Building
533 South Limestone
Lexington, Kentucky 40506-0043
Telephone: 606-257-4513

Dear Driver:

The Transportation Research Program at the University of Kentucky and the Urban Studies Center at the University of Louisville are jointly performing an evaluation of the Traffic Alcohol Programs (TAP) presently being conducted by Jefferson County, Louisville, and Shively police agencies. The Traffic Alcohol Program is a program of increased enforcement and public information with the objective of reducing drunk driving and alcohol-related accidents. Both the program and the evaluation are funded by the National Highway Traffic Safety Administration through the Kentucky State Police.

In order to determine the public's awareness of the program, this questionnaire is being sent to 1,000 randomly selected licensed drivers in Jefferson County. Your participation in the survey will be an important factor in the overall evaluation. The results of this survey and an analysis of alcohol-related accident trends will be considered when attempting to determine whether this program or other similar programs should be continued.

As indicated, your selection for participation in the survey was completely random. The answers you wish to provide will be confidential and will be seen only by the University study team. Your response will be combined with others so that no response can be identified by name. A postage-paid envelope is enclosed for returning the questionnaire.

A final report on the evaluation will be prepared at the end of the study and results of the survey will be included in summary form. If you have any questions concerning any aspect of the survey or the overall study, you may contact Jerry Pigman or Ken Agent, the co-principal investigators, at the telephone number listed at the top of the page.

Thank you for your participation in this survey.

Sincerely,

Research Engineer

JGP:cdc
Enclosures

TRAFFIC ALCOHOL PROGRAM

QUESTIONNAIRE

1. Are you aware that several police agencies in Jefferson County are conducting a Traffic Alcohol Program (TAP -- increased enforcement as an attempt to reduce alcohol-related accidents)? Yes No

2. What is your overall opinion of this program?
 Strongly in Favor
 In Favor
 Against
 Strongly Against
 No Opinion

3. Do you feel that the chances of arrest of individuals who do drink and drive are greater now than before the Traffic Alcohol Program?
 Yes No

4. Do you feel that this program has reduced the chances of your involvement in a traffic accident involving a driver under the influence of alcohol?
 Yes No

5. Have you ever driven when you felt your ability to drive was impaired due to alcohol? Yes No

If your answer to Question 5 is Yes:

- a) Do you feel that your chances of being arrested for drinking and driving are greater now than before the Traffic Alcohol Program?
 Yes No

- b) Has the existence of this program affected your driving habits, specifically drinking and driving? Yes No

- c) Do you feel that the Traffic Alcohol Program has reduced the chances of your involvement in a traffic accident while driving under the influence of alcohol? Yes No

6. Do you feel that the level of alcohol-related enforcement in this program is violating the rights of drivers in Jefferson County? Yes No

7. Do you feel that increased police enforcement is an effective means of reducing the number of drunk drivers? Yes No

8. Are you willing, as a taxpayer, to support increased police enforcement after federal funding for the current Traffic Alcohol Program is discontinued? Yes No