Research Report
KTC-96-29

EVALUATION OF RED LIGHT RUNNING CAMPAIGN

by

Kenneth R. Agent
Research Engineer

and

Deborah Wagner
Officer, LFUCG Division of Police

Kentucky Transportation Center
College of Engineering
University of Kentucky
Lexington, Kentucky

in cooperation with

Lexington Fayette Urban County Government
Division of Police

December 1996

TABLE OF CONTENTS

LIST OF TABLES

EXECUTIVE SUMMARY

The purpose of this project was to use a public information and education campaign, along with increased enforcement, to reduce the problem of red light running (RLR) in Lexington, Kentucky. The objective of this portion of the project was to evaluate the effectiveness of the campaign.

The mail and telephone surveys, taken before and after the campaign, revealed that the RLR program had been successful in improving public awareness of the problems associated with disregarding traffic signals. About 60 percent of the respondents recalled seeing or hearing ads or information dealing with red light running. Approximately one-half of the respondents who recalled RLR information indicated they had changed their driving with the most common response that they now stop for yellow lights.

Compared to the before period, the number of RLR collisions decreased by 4.8 percent during the five-month campaign period while total accidents increased by 8.9 percent. The number of RLR citations increased by 45.9 percent during the campaign period while total citations decreased by 14.9 percent. The number of cycles in which at least one vehicle crossed the stop bar after the start of the red indication decreased from 7.2 before to 4.6 percent at the end of the campaign at intersections which had the highest number of RLR collisions. The depositions of RLR citations were similar before and during the program with only about two percent dismissed or found not guilty.

1.0 INTRODUCTION

A red light violation occurs when a motorist enters an intersection after the signal indication has turned red. The stop bar is typically used as a reference for the point where a vehicle enters the intersection. If a vehicle crosses the stop bar after the signal indication has changed to red, a red light violation has occurred.

Research conducted by the Institute for Highway Safety has shown that disregarding traffic controls such as traffic signals and stop and yield signs is the most frequent cause of urban collision (1). Disregarding traffic controls accounted for 22 percent of 13 collision types identified as occurring in four urban areas. *Running* the red light was involved in 24 percent of all collisions involving disregarding traffic controls. The severity of collisions involving disregarding traffic controls was also high with injuries reported in 39 percent of these collisions. The national economic impact of these accidents has been estimated as approximately $7 billion each year in medical costs, time off work, insurance increases, and property damage (2).

The Federal Highway Administration has developed a public information and education outreach campaign, which also incorporates increased enforcement, to address the "red light running" (RLR) problem. Several cities across the United States were selected as pilot locations for this program. Lexington, Kentucky was selected as one of these 31 cities.

The purpose of the project was to use a public information and education campaign, along with increased enforcement, to reduce the problem of red light running in Lexington. The objective of the portion of the project described in this report was to evaluate the effectiveness of the campaign.

2.0 DESCRIPTION OF PROGRAM

The project involved a public information and education campaign. Emphasis was also placed on enforcement of red light running violations by the Division of Police although no overtime was paid for this purpose.

A steering committee was established which was headed by a project director from the Division of Police. Committees were formed in the areas of event management, public information, graphic arts/printing, office management, evaluation, traffic engineering, law enforcement, and fundraising/coalition. Examples of types of public information and education used in the campaign included: a kick-off news conference, public service announcements on television and radio, newspaper and magazine articles, variable message signs using the

message "In the Bluegrass, Red Means Stop", posters, a banner, billboards, developing and distribution of educational material dealing with red light running, distribution of literature in businesses, and pledge boards where individuals pledged to stop red light running. The following promotional items with RLR messages were distributed (quantities given in parathesis): bumper stickers (7,000), mugs (553), labels (7,000), pencils (2,500), and buttons (3,000). A summary of various companies and organizations which supported the campaign, with a brief description of their support, is given in Appendix A.

3.0 EVALUATION RESULTS

The project extended for the five-month time period from June through October 1996. The evaluation consisted of five components. These included:

- mail and telephone surveys conducted before and after the campaign,
- a traffic accident analysis,
- an analysis of traffic citations,
- an analysis of the number of vehicles running the red light at selected locations, and
- an analysis of the percentage of drivers who were convicted when cited for running a red light.

Following is a discussion of each evaluation component.

3.1 Public Attitude

In order to determine if the campaign affected the public attitude toward red light running, both mailed and telephone surveys were conducted prior to the start of the campaign and after the end of the campaign (in April and November 1996). Data were obtained from two sources for the mail survey and one source for the telephone survey. The mailed survey was sent to random samples of employees from both the Lexington Fayette Urban County Government and the University of Kentucky. There were 375 surveys sent to each group for a total of 750 mail surveys. The response rate was very similar for both groups. The overall response rate was 55 percent for the before survey and 48 percent for the after survey. A random sample was selected from the Lexington telephone book for the phone survey. A sample of 200 telephone interviews was completed prior to the start of the campaign with 170 interviews completed after completion of the campaign.

A copy of the mail survey is given in Appendix B. The mail and telephone surveys were almost identical. One objective was to determine if the public information portion of the campaign was successful. Respondents were asked if

they recalled seeing or hearing ads or information concerning red light running and if this information had changed their driving habits. They were also asked several other related questions such as how they defined running a red light and the frequency that they observed others running a red light.

Summaries of the survey results are given in Tables 1 and 2 for the mail and telephone surveys, respectively. In both tables, the percentages of respondents giving specific answers are compared for the before and after periods.

Following is a summary of the results of the mail surveys (shown in Table 1).

- The most common traffic violations that the respondents observed were speeding and failing to signal a turn.
- The percentage indicating they observed other drivers not stopping for a red light increased in the after period. This could be related to increased awareness of this problem. In both the before and after periods, almost three of four indicated they observe drivers running a red light either every day or a few times a week.
- About 60 percent correctly defined running a red light as entering an intersection on red as opposed to entering on yellow with the signal turning red while the car is in the intersection.
- The percentage indicating they had seen the police ticket someone who had run a red light increased slightly from 27 to 31 percent. Only about 25 percent said they had never run a red light. The most common reason for running the red light was that they could not stop in time.
- The percentage giving the number of times someone will be given a ticket for running a red light increased slightly for the higher choices which indicates a knowledge of increased enforcement. This was also the case for the number of potential collisions. This shows an increased awareness of the potential result of running a red light.
- The percentage indicating they had seen advertising about safe driving increased from 50 to 93 percent. This would be related to the RLR campaign with about 25 to 30 percent indicating they remembered seeing or hearing one of the two public service announcements.
- The percentage indicating they saw or heard some type of ad or other information related to RLR was 58 percent with the changeable message traffic board and television listed most often, followed by radio ads and newspaper articles. Of those who had recalled seeing or hearing information relating to RLR, almost one-half had seen either the changeable message sign or an ad on television.
- Almost one-half of the respondents who indicated they had seen or heard RLR information indicated they had changed their driving as a result of the campaign with most stating they now stopped for yellow lights.

- The respondents stated that the most effective source of information used in the campaign was the changeable message board.
- The percentage of male and female respondents was the same in both periods with a slightly higher percentage of older drivers in the before period.

Following is a summary of the results of the telephone survey (shown in Table 2).

- The most common traffic violations that the respondents observed were not stopping for a red light and speeding.
- In both the before and after periods, about 80 percent indicated they observed drivers running a red light either every day or a few times a week.
- The percent correctly defining running a red light as entering an intersection on red increased substantially in the after period to 66 percent.
- The percentage indicating they had seen the police ticket someone who had run the red light decreased in the after period. Almost one-half (45 percent) of the respondents indicated they never disregard a red light. The most common reason for running a red light is not being able to stop in time.
- The percentage giving the highest estimate for the number of drivers who will be stopped and ticketed for running a red light increased in the after period.
- The percentage indicating they had seen advertising about safe driving increased from 23 to 84 percent. This would be related to the RLR campaign with 28 and 42 percent indicating they remembered seeing or hearing the two PSAs.
- The percentage indicating they saw or heard some type of ad or other information related to RLR was 65 percent with the changeable message traffic board and television listed most often. Of those who had recalled seeing or hearing information relating to RLR, almost one-half had seen either the changeable message sign or an ad on television.
- Approximately one-half of the respondents who indicated they had seen or heard RLR information indicated they had changed their driving as a result of the campaign with one-half of those stating they now stopped for yellow lights.
- While most indicated no one particular ad made them change their driving, the message given on the changeable message sign was listed as the most effective source of information.
- The age distribution was similar for the before and after respondents with a higher percentage of females in the after period.

The use of the changeable message sign with the message "In the Bluegrass, Red Means Stop" was found to be an effective public information device from both surveys. Three signs were used at eight different locations for a total of 386 days.

3.2 Accident Analysis

Accident data in Fayette County were reviewed to obtain the number of collisions coded as occurring at an intersection with a traffic signal and where "disregarding traffic controls" was listed as a contributing factor on the police report (RLR accident). These data were summarized, by month, from January 1993 through October 1996. The monthly total number of accidents in Fayette County, as well as the number of accidents at signalized intersections involving disregarding the traffic controls, are listed in Table 3. These data were compiled by the Division of Police and the total accident category includes accidents which occurred in a parking lot.

For the three-year period (1993 through 1995) prior to the start of the campaign, there were 1,015 accidents involving disregarding a traffic signal. This represents approximately 2.6 percent of all accidents in Fayette County. These accidents resulted in four fatalities and 697 injuries. Using the economic costs of traffic accidents, as reported by the National Safety Council, these accidents resulted in a cost of about $10 million per year.

The number of RLR collisions for the five-month period of the campaign (June 1996 through October 1996) was compared to the same five months for the previous three years. There was an average of 146 RLR accidents for these five months in the three-year before period compared to 139 during the five-month campaign period. This can be compared to the total number of accidents in Fayette County during these same time periods. There was an average of 5,604 total accidents in Fayette County during these five months in the three-year before period compared to 6,105 during the five-month campaign period. The data show that RLR accidents decreased by 4.8 percent during the campaign period while total accidents increased by 8.9 percent. Due to the relatively small number of RLR accidents, the decrease in RLR accidents, when compared to the increase in total accidents, was not statistically significant (3).

The numbers of RLR collisions at specific intersections were also determined. The intersections with the highest numbers were identified (Table 4) as locations with potential for increased enforcement. Specific approaches from these intersections were selected as the sites for violation data collection. The change in RLR collisions at these intersections was investigated. The number of collisions occurring in June through October is shown in Table 4 for 1993 through 1995 as well as during the 1996 campaign period. There were some large decreases in RLR collisions at some of the intersections which had the largest number of this type of collision. Considering the total at all of the intersections, the average number of RLR collisions occurring in the three years before the campaign (June through October) was almost identical to the number in 1996 during those months.

The time period in which the highest number of RLR collisions occurred at the high accident intersections is given in Table 5. The most common time interval was between noon and 3 pm. Most of the collisions occurred between 9 am and 6 pm. This information was used when determining the times to collect the violation data.

3.3 Citation Analysis

Citation data in Fayette County were reviewed to determine the number of citations written for a driver disregarding a traffic signal. The number of total citations and the number of RLR citations written in Fayette County, by month, are given in Table 6. There was an average of 1,330 RLR citations written from June through October for the three years of 1993 through 1995. This compares to 1,940 written in this five-month campaign period in 1996. The total number of citations for all types of violations written changed from an average of 24,890 during the five-month periods in 1993 through 1995 to 21,192 in 1996. This shows that the number of RLR citations increased by 45.9 percent during the campaign period while total citations decreased by 14.9 percent. This increase in RLR citations, when compared to total citations, was statistically significant (3).

The numbers of RLR citations written at specific intersections were also obtained. Intersections having the highest number of RLR citations are given in Table 7. These intersections could be compared to those having the highest number of RLR collisions (as shown in Table 4). Only five of the 18 intersections listed in Table 4, as having the highest number of RLR collisions, were identified as intersections with the highest number of RLR citations (Table 7).

The number of citations written at the high accident locations before and during the program is summarized in Table 8. The number of citations written from June through October is given since this was the time period for the program. The average of 1993 through 1995 was compared to the number in 1996. The number of citations written during the campaign period increased at 9 of the 18 intersections. The largest increase was at the intersection of Nicholasville Road and Lowry Lane.

3.4 Violation Analysis

As a method of estimating the change in RLR violations, violation data were collected at a sample of intersection approaches before and at the end of the five-month campaign. Accident data which identified the intersections with the highest numbers of accidents involving a driver disregarding the traffic signal were used to select the intersections and approaches. Data were taken for at least 100 cycles for each approach. The percentage of cycles in which at least one vehicle crossed the

stop bar after the start of the red indication was determined. Only vehicles proceeding straight through the intersection were counted since almost all of the RLR accidents involved a vehicle making this maneuver. Data were taken at 17 approaches at 16 intersections.

The violation data are presented in Table 9. In the before period the percent of cycles involving a RLR violation ranged from 1 to 24 percent with an average of 7.2 percent. This can be compared to data taken in a previous study involving an evaluation of change interval treatments for traffic signals at high-speed intersections (4). A violation rate of 5.5 percent was determined for intersections with no green extension system. Speed limits at the high-speed locations were typically 55 mph compared to 35 mph at most of the intersections included in this study. The data taken after the campaign showed a range of 0 to 10 percent with an average of 4.6 percent. This shows there was a substantial decrease in violation rates. This could be related to the publicity related to the campaign and the increased enforcement. The percent of cycles with a RLR violation decreased at 11 of the 17 approaches.

3.5 Conviction Rate

The conviction rate for drivers cited for disregarding a traffic signal was compared before and during the campaign. A comparison of conviction rates during the five-month program period with the same time period in 1995 is given in Table 10.

The dispositions of the citations were similar before and during the program. Approximately two-thirds of the citations were prepaid. Only about two percent were dismissed or found not guilty.

4.0 CONCLUSIONS

The mail and telephone surveys revealed that the red light running (RLR) program had been successful in improving public awareness of the problems associated with disregarding traffic signals. Most of the respondents (58 percent of the mail survey and 65 percent of the telephone survey) indicated they recalled seeing or hearing ads or information on red light running during the campaign period. The changeable message board and television ads were recalled most often. For the drivers who indicated they had seen RLR information, a substantial percentage (44 percent of the mail survey and 49 percent of the telephone survey) indicated they had changed their driving as a result of the information.

Compared to the average of the previous three years, the number of RLR collisions decreased by 4.8 percent during the five-month campaign period (from 146 to 139) while total accidents increased by 8.9 percent. The number of collisions at the intersections with the largest number of RLR collisions was almost identical during the before period as compared to during the campaign.

Compared to the same time period during the previous three years, the number of RLR citations increased by 45.9 percent during the campaign period while total citations decreased by 14.9 percent. The number of citations increased at 9 of the 18 intersections having the largest number of RLR collisions.

The percent of cycles in which at least one vehicle crossed the stop bar after the start of the red indication decreased after the campaign from 7.2 to 4.6 percent at intersections having the highest number of RLR collisions. The percent of cycles with a RLR violation decreased at 11 of the 17 approaches studied.

The disposition of RLR citations were similar before and during the program. Only about two percent were dismissed or found not guilty.

REFERENCES

1. Retting, R.A.; Williams, A.F.; Preusser, D.F.; and Weinstein, H.B.; "Classifying Urban Crashes for Countermeasure Development," Accident Analysis and Prevention, Vol. 27, No. 3, 1995.

2. Research and Technology Transporter, U.S. Department of Transportation, Federal Highway Administration, April 1995.

3. Natrella, M.G.; Experimental Statistics, National Bureau of Standards, Handbook 91, August 1963.

4. Agent, K.R. and Pigman, J.P.; "Evaluation of Change Interval Treatments for Traffic Signals at High-Speed Intersections," University of Kentucky Transportation Center, Report KTC-94-26, December 1994.

TABLE 1. SUMMARY OF MAIL SURVEYS

QUESTION	PERCENT RESPONDING BEFORE*	AFTER*
When you are driving, what traffic violations do you see other drivers committing?		
Drunk or drugged driving	20	26
Speeding	86	91
Not stopping completely at stop signs	73	80
Illegal turns	65	55
Tailgating/following too closely	73	75
Failure to signal a turn	84	84
Reckless driving	41	53
Not stopping for a red light	62	76
Failure to yield right-of-way	48	57
Failure to stop at light when making a turn on red	52	60
Passing illegally	29	41
Driving too slow	40	45
How do you define running a red light?		
Entering an intersection on yellow but the light turns red while the car is still in the intersection	40	36
Entering an intersection on red	58	61
Other	2	3
How often do you see others run red lights?		
Every day	40	42
A few times a week	32	32
A few times a month	14	20
Less than once a month	14	7
Have you ever seen the police ticket someone who has run a red light?		
Yes	27	31
No	42	37
Not sure -seen someone ticketed near an intersection but not sure why	32	32
Have you ever run a red light as you described it?		
Yes, once	25	28
Yes, more than once	50	48
No	25	24
If yes, how did it happen?		
Couldn't stop in time	30	29
Afraid car behind would hit me	17	16
In a hurry	13	9
No other cars around	5	4
Not paying close enough attention	18	19
Unfamiliar with area, did not see light	8	10
Distracted by someone in car	4	6
Other	6	8

* The before survey was conducted in April 1996 with the after survey in November 1996.

TABLE 1. SUMMARY OF MAIL SURVEYS (continued)

QUESTION	PERCENT RESPONDING BEFORE	AFTER
Out of 100 drivers who run a red light in Lexington, how many do you think will actually be stopped and ticketed by police?		
None	8	7
1 to 2	39	37
3 to 5	29	32
6 to 10	13	16
11 - 20	7	5
More	3	3
Out of 100 instances where someone runs a red light in Lexington, how many do you think will result in a car crash, hitting a pedestrian or a cyclist?		
None	2	1
1 to 2	34	28
3 to 5	26	31
6 to 10	22	24
11 to 20	12	10
More	4	5
In how many of these cases do you think someone will be hurt?		
None	2	1
1 to 2	41	41
3 to 5	26	28
6 to 10	14	16
11 to 20	11	7
More	6	6
Do you recall seeing or hearing any advertising about safe driving in the last five months?		
Yes	50	93
No	33	4
Not sure	17	3
Two ads or public service announcements are described briefly below. Please indicate whether you recall seeing or hearing any of them.		
"He took a chance"		
Yes	2	30
No	91	55
Not sure	7	14
"We're putting a stop to red light runners for good - your good		
Yes	3	26
No	90	56
Not sure	7	17

TABLE 1. SUMMARY OF MAIL SURVEYS (continued)

QUESTION	PERCENT RESPONDING* AFTER
Do you recall seeing or hearing ads or information on red light running anywhere else in the last five months?	
Yes	58
No	29
Not sure	13
If yes, indicate where the ads or information appeared.	
Television	25 (46)**
Magazine ad	2 (3)
Radio ad	16 (30)
Changeable Message Traffic Board	26 (48)
Newspaper article	15 (28)
Magazine article	2 (3)
Newspaper ad	7 (14)
Flier or direct mail insert	7 (14)
If yes, have you changed your driving in any way as a result of seeing or hearing any of these ads?	
Yes,definitely	51
Probably	19
Probably Not	12
No	19
If yes, in what particular way have you changed something about your driving?	
Stop for red lights now	21
Stop for yellow lights now	48
Other	31
If yes, which ad, if any, made you change your driving?	
"He took a chance" (public service announcement)	11
"We're putting a stop to red light runners" (public service announcement)	8
"In the Bluegrass Red Means Stop" (changeable message board)	46
Other ads	3
None in particular	33

* Only the very few responding that thought they had seen a PSA answered these questions in the before survey so only the after survey data are given.

** Number in parenthesis is the percentage of all respondents who indicated they had seen information concerning red light running in the specific area.

TABLE 1. SUMMARY OF MAIL SURVEYS (continued)

	PERCENT RESPONDING BEFORE	AFTER
Age Group		
16 to 25	6	3
26 to 45	56	64
46 to 60	33	28
Over 60	5	5
Sex		
Male	54	54
Female	46	46
Last Grade Completed in School		
Less than high school	0	1
Some high school	1	2
High school graduate	13	16
Some college	29	28
College degree	27	25
Post-graduate	30	28
How often do you wear a seat belt when you drive?		
Always	81	79
Most of the time	12	14
Less than half the time	6	6
Never	1	1
About how many miles do you drive per year?		
Less than 10,000	23	20
10,000 to 15,000	39	43
15,000 to 20,000	23	22
More than 20,000	15	15
Have you ever gotten a ticket for a moving violation?		
No	28	29
Yes, once	40	40
A few times	31	30
Many times	1	1
Have you ever taken a driver education course?		
No	45	38
Yes	55	62

TABLE 2. SUMMARY OF TELEPHONE SURVEYS

QUESTION	PERCENT RESPONDING BEFORE*	AFTER*
When you are driving, what traffic violations do you see other drivers committing?		
Drunk or drugged driving	4	2
Speeding	52	45
Not stopping completely at stop signs	40	21
Illegal turns	13	6
Tailgating/following too closely	22	9
Failure to signal a turn	35	29
Reckless driving	18	5
Not stopping for a red light	72	72
How do you define running a red light?		
Entering an intersection on yellow by the light turns red while the car is still in the intersection	53	29
Entering an intersection on red	46	66
Other	1	6
How often do you see others run red lights?		
Every day	42	49
A few times a week	37	31
A few times a month	15	10
Less than once a month	6	10
Have you ever seen the police ticket someone who has run a red light?		
Yes	31	19
No	57	73
Not sure -seen someone ticketed near an intersection but not sure why	12	8
Have you ever run a red light as you described it?		
Yes, once	33	40
Yes, more than once	35	15
No	32	45
If yes, how did it happen?		
Couldn't stop in time	41	29
Afraid car behind would hit me	14	22
In a hurry	27	24
No other cars around	2	3
Other	15	22

* The before survey was conducted in April 1996 with the after survey in November 1996.

TABLE 2. SUMMARY OF TELEPHONE SURVEYS (continued)

QUESTION	PERCENT RESPONDING BEFORE	AFTER
Out of 100 drivers who run a red light in Lexington, how many do you think will actually be stopped and ticketed by police?		
None	10	10
1 to 2	31	24
3 to 5	27	28
6 to 10	18	18
11 - 20	10	8
More	4	12
Out of 100 instances where someone runs a red light in Lexington, how many do you think will result in a car crash, hitting a pedestrian or a cyclist?		
None	2	4
1 to 2	36	28
3 to 5	25	25
6 to 10	21	17
11 to 20	12	9
More	4	17
In how many of these cases do you think someone will be hurt?		
None	2	0
1 to 2	33	30
3 to 5	26	23
6 to 10	21	19
11 to 20	13	14
More	4	15
Do you recall seeing or hearing any advertising about safe driving in the last three months?		
Yes	23	84
No	76	14
Not sure	1	2
Two ads or public service announcements are described briefly below. Please indicate whether you recall seeing or hearing any of them.		
"He took a chance"		
Yes	1	42
No	99	53
Not sure	0	5
"We're putting a stop to red light runners for good - your good		
Yes	1	28
No	98	61
Not sure	1	11

TABLE 2. SUMMARY OF TELEPHONE SURVEYS (continued)

QUESTION	PERCENT RESPONDING* AFTER
Do you recall seeing or hearing ads on red light running anywhere else in the last five months?	
Yes	65
No	35
If yes, indicate where the ads or information appeared.	
Television	31 (42)**
Magazine ad	4 (5)
Radio ad	14 (19)
Changeable Message Traffic Board	33 (45)
Newspaper article	17 (23)
If yes, have you changed your driving in any way as a result of seeing or hearing any of these ads?	
Yes	49
No	51
If yes, in what particular way have you changed something about your driving?	
Stop for red lights now	27
Stop for yellow lights now	50
Other	23
If yes, which ad made you change your driving?	
"He took a chance"	12
"We're putting a stop to red light runners"	14
"In the Bluegrass, Red Means Stop"	26
None in particular	47

* Only the very few responding that thought they had seen a PSA answered these questions in the before survey so only the after survey data are given.

** Number in parenthesis is the percentage of all respondents who indicated they had seen information concerning red light running in the specific area.

TABLE 2. SUMMARY OF TELEPHONE SURVEY (continued)

QUESTION	PERCENT RESPONDING BEFORE	AFTER
Age Group		
16 to 25	18	12
26 to 45	40	42
46 to 60	22	25
Over 60	21	22
Sex		
Male	49	40
Female	51	60
Last Grade Completed in School		
Some high school	3	7
High school graduate	24	22
Some college	39	24
College degree	24	33
Post-graduate	10	15
How often do you wear a seat belt when you drive?		
Always	69	80
Most of the time	18	9
Less than half the time	11	8
Never	2	2
About how many miles do you drive per year?		
Less than 10,000	32	35
10,000 to 15,000	38	35
15,000 to 20,000	22	16
More than 20,000	8	14
Have you ever gotten a ticket for a moving violation?		
No	39	42
Yes, once	41	45
A few times	20	12
Many times	1	1
Have you ever taken a driver education course?		
No	52	48
Yes	48	52

TABLE 3. SUMMARY OF ACCIDENT DATA (FAYETTE COUNTY) (January 1993-October 1996)

TIME PERIOD	NUMBER OF ACCIDENTS	
	TOTAL	SIGNAL - DISREGARD TRAFFIC CONTROL
January 1993	845	30
February	963	20
March	942	26
April	1,064	34
May	952	22
June	971	20
July	972	28
August	1,107	16
September	1,092	31
October	1,369	28
November	1,115	30
December	1,451	24
January 1994	1,163	19
February	959	14
March	1,104	33
April	1,078	43
May	1,103	24
June	1,037	31
July	1,127	35
August	1,028	28
September	1,109	32
October	1,183	40
November	1,156	41
December	1,173	35
January 1995	1,062	21
February	910	32
March	1,005	30
April	1,054	29
May	1,179	22
June	1,103	29
July	1,062	27
August	1,178	30
September	1,133	28
October	1,342	35
November	1,199	17
December	1,387	31
January 1996	1,260	29
February	1,118	21
March	1.157	26
April	1,142	34
May	1,190	31
June	1,221	24
July	1,121	28
August	1,207	21
September	1,203	27
October	1,353	39

TABLE 4. INTERSECTIONS WITH THE HIGHEST NUMBER OF ACCIDENTS INVOLVING DRIVER DISREGARDING TRAFFIC SIGNAL (1993-1995) AND COMPARISON BEFORE AND DURING CAMPAIGN

INTERSECTION	TOTAL ACC. (1993-1995)	APPROACH	MANEUVER	ACCIDENTS BY APPR. AND MANEUVER 1993-1995	JUNE - OCT. 93-95	JUNE - OCT. 96
Nicholasville - New Circle (two intersections)	25	South	Straight	17	8	0
		North	Straight	4	0	1
		South	Left	2	1	0
		East	Left	2	1	0
Nicholasville - Lowry	20	South	Straight	12	5	1
		North	Straight	8	4	1
Third - Limestone	20	North	Straight	19	9	0
		East	Straight	1	1	0
Broadway - Vine	19	South	Straight	13	4	1
		North	Straight	4	0	0
		East	Straight	2	2	0
Broadway - Sixth	16	North	Straight	10	3	0
		South	Straight	3	1	1
		North	Right	1	0	0
		East	Straight	1	1	0
		West	Straight	1	1	0
Nicholasville - Reynolds	14	South	Straight	10	3	2
		West	Straight	2	0	0
		East	Straight	1	0	0
		South	Left	1	1	0
Short - Jefferson	12	South	Straight	10	6	1
		North	Straight	1	1	0
		East	Straight	1	0	1
Fourth - Upper	11	West	Straight	9	6	2
		South	Straight	2	0	2
Richmond - New Circle (two intersections)	11	West	Straight	6	1	2
		East	Straight	2	1	0
		North	Left	1	1	0
		East	Left	1	0	0
		West	Left	1	1	0
High - Mill	11	West	Straight	9	0	2
		North	Straight	1	0	0
		West	Left	1	1	0

TABLE 4. INTERSECTIONS WITH THE HIGHEST NUMBER OF ACCIDENTS INVOLVING DRIVER DISREGARDING TRAFFIC SIGNAL (1993-1995) AND COMPARISON BEFORE AND DURING CAMPAIGN (continued)

INTERSECTION	TOTAL ACC (1993-1995)	APPROACH	MANEUVER	ACCIDENTS BY APPR. AND MANEUVER 1993-1995	JUNE - OCT. 93-95	JUNE - OCT. 96
Martin Luther King - Short	10	South	Straight	7	1	1
		North	Straight	2	2	1
		East	Straight	1	0	0
High - Limestone	10	West	Straight	9	6	1
		North	Straight	1	0	2
Rose - High	10	West	Straight	4	3	1
		East	Straight	1	0	0
		North	Straight	4	1	3
		South	Straight	1	1	0
Euclid - Ashland	9	East	Straight	6	4	2
		West	Straight	1	1	0
		South	Straight	1	0	0
		North	Left	1	0	0
Martin Luther King - High	9	West	Straight	5	0	1
		North	Straight	3	0	0
		South	Straight	1	0	1
Nicholasville - Wilson Downing	9	South	Straight	7	0	0
		West	Straight	1	0	0
		West	Left	1	0	0
		North	Straight	0	0	1
Rose - Maxwell	9	South	Straight	8	4	1
		North	Straight	1	0	1
Nicholasville - Moore	8	North	Straight	6	4	1
		South	Straight	2	2	0

TABLE 5. TIME PERIOD WITH HIGHEST NUMBER OF ACCIDENTS INVOLVING DRIVER DISREGARDING TRAFFIC SIGNAL (1993-1995)

INTERSECTION	TIME PERIOD
Nicholasville - New Circle	3 pm - 6 pm
Nicholasville - Lowry	noon - 3 pm
Broadway - Sixth	noon - 3 pm
Third - Limestone	3 pm - 6 pm
Nicholasville - Reynolds	9 pm - 12 am
Fourth - Upper	9 am - 12 pm
Richmond - New Circle	noon - 6 pm
Short - Jefferson	9 am - noon
Broadway - Vine	noon - 3 pm
Martin Luther King - Short	noon - 3 pm
High - Limestone	noon - 3 pm
High - Mill	noon - 3 pm
Nicholasville - Wilson Downing	3 pm - 6 pm
Rose - Maxwell	noon - 3 pm
Nicholasville - Moore	3 pm - 6 pm

TABLE 6. SUMMARY OF CITATION DATA (FAYETTE COUNTY) (January 1993-October 1995)

TIME PERIOD	NUMBER OF CITATIONS	
	TOTAL	SIGNAL - DISREGARD TRAFFIC CONTROL
January 1993	5,784	377
February	4,561	309
March	4,023	247
April	4,877	301
May	6,150	365
June	4,666	270
July	4,931	288
August	5,107	354
September	5,712	333
October	5,337	299
November	4,392	255
December	4,508	305
January 1994	3,350	303
February	3,951	281
March	4,704	299
April	4,338	312
May	6,356	405
June	4,161	189
July	4,391	245
August	5,140	248
September	4,948	270
October	4,499	244
November	4,723	348
December	5,968	225
January 1995	5,359	197
February	4,978	230
March	5,123	278
April	5,421	264
May	5,311	247
June	4,849	225
July	4,301	214
August	5,724	242
September	5,828	280
October	5,076	288
November	6,048	382
December	5,603	382
January 1996	5,411	364
February	6,892	343
March	6,140	326
April	5,337	220
May	5,268	309
June	4,193	484
July	4,348	454
August	4,367	361
September	3,945	314
October	4,339	327

TABLE 7. INTERSECTIONS WITH HIGHEST NUMBER OF RLR CITATIONS (1993-1995)

INTERSECTION	STREET	NUMBER OF CITATIONS
Nicholasville - Reynolds	Nicholasville	802
	Reynolds	52
Broadway - Main	Main	258
	Broadway	164
Limestone - Rose	Limestone	287
	Rose	20
Man O War - Alumni	Man O War	150
	Alumni	83
Euclid - Woodland	Woodland	136
	Euclid	72
New Circle - Russell Cave	Russell Cave	163
	New Circle	35
Broadway - Vine	Broadway	153
	Vine	41
New Circle - Liberty	New Circle	149
		39
Rose -Vine	Rose	89
	Vine	83
Man O War - Versailles	Versailles	138
	Man O War	19
Man O War - Richmond	Richmond	103
	Man O War	46
Newtown - Stanton	Newtown	131
	Stanton	17
New Circle - Broadway	Broadway	123
	New Circle	11
Broadway - High	Broadway	88
	High	37
New Circle - Richmond	Richmond	114
	New Circle	5
New Circle - Nicholasville	Nicholasville	112
	New Circle	3

TABLE 7. INTERSECTIONS WITH HIGHEST NUMBER OF RLR CITATIONS (1993-1995) (continued)

INTERSECTION	STREET	NUMBER OF CITATIONS
New Circle - Woodhill	Woodhill	99
	New Circle	14
Man O War - Tates Creek	Man O War	74
	Tates Creek	32
Euclid - Limestone	Limestone	58
	Euclid	42
Man O War - Nicholasville	Nicholasville	67
	Man O War	30
New Circle - Bryan Station	Bryan Station	71
	New Circle	18
Nicholasville - Moore	Nicholasville	84
	Moore	3
New Circle - Palumbo	Palumbo	59
	New Circle	26

TABLE 8. CITATIONS AT INTERSECTIONS WITH HIGHEST NUMBER OF RLR ACCIDENTS (Before and During Campaign)

INTERSECTION	NUMBER OF CITATIONS	
	AVERAGE PER YEAR JUNE - OCTOBER (1993-1995)	JUNE - OCTOBER 1996
Nicholasville - New Circle	13.7	12
Nicholasville - Lowry	2.3	17
Broadway - Sixth	4.0	12
Third - Limestone	3.3	2
Nicholasville - Reynolds	115.3	100
Fourth - Upper	0.3	0
Richmond - New Circle	16.0	13
Short - Jefferson	1.0	0
Broadway - Vine	20.0	19
Martin Luther King - Short	2.0	4
Euclid - Ashland	1.7	1
High - Limestone	2.7	3
High - Mill	0.3	1
Martin Luther King - High	1.0	4
Nicholasville - Wilson Downing	5.3	8
Rose - Maxwell	2.3	3
Nicholasville - Moore	13.0	6
Rose - High	3.7	6

TABLE 9. RED LIGHT VIOLATION RATES (Before and After Campaign)

INTERSECTION	APPROACH	PERCENT CYCLES WITH RLR VIOLATIONS* BEFORE	AFTER
Nicholasville - New Circle (Inner Loop)	Southbound	8	8
Nicholasville - Lowery	Northbound	14	8
	Southbound	7	7
Broadway - Sixth	Northbound	3	3
Third - Limestone	Northbound	5	2
Nicholasville - Reynolds	Southbound	8	10
Fourth - Upper	Westbound	2	0
Richmond - New Circle (Inner Loop)	Westbound	24	10
Short - Jefferson	Southbound	4	1
Broadway - Vine	Southbound	10	6
Martin Luther King - Short	Southbound	2	3
High - Limestone	Westbound	8	4
High - Mill	Westbound	1	0
Nicholasville - Wilson Downing	Southbound	7	5
Rose - Maxwell	Southbound	2	1
Nicholasville - Moore	Northbound	6	7
New Circle - Russell Cave	Westbound	12	4

* The percentage of 100 cycles in which at least one vehicle proceeding straight through the intersection on the subject approach crossed the stop bar after the start of the red indication.

TABLE 10. COMPARISON OF CONVICTION RATES (Before and During Campaign)

	TIME PERIOD			
	JUNE-OCTOBER 1995		JUNE-OCTOBER 1996	
DISPOSITION	NUMBER	PERCENT	NUMBER	PERCENT
Prepaid	946	69.66	1,379	65.70
Guilty	238	17.52	322	15.34
Merged	69	5.08	70	3.33
Failed to Appear	33	2.43	100	4.76
Amended Down	28	2.06	24	1.14
Pending	11	0.81	162	7.72
Grand Jury	3	0.22	2	0.10
Dismissed	28	2.06	32	1.52
Not Guilty	2	0.15	7	0.33

APPENDIX A

SUPPORTERS OF CAMPAIGN

COMPANY OR ORGANIZATION	DESCRIPTION OF SUPPORT*
Ace Magazine	Full page article in July issue ($800*).
Applebee's Restaurant	Advertised RLR stickers at Dine Around Downtown.
Ashland Park Neighborhood	Discussed program at neighborhood meeting and distributed bumper stickers.
BFI	Designed stands for signs ($200*); discussed program at driving rodeo.
Bryant's Rent All	Advertised campaign message for 30 days.
Bluegrass Council 89 United Commercial Travelers	Donated $1,000.
Bluegrass Towing	Donated vehicle for kick-off ($200*); bumper stickers on all vehicles
Central Parking Garage	Displayed campaign signs for patrons at five garages.
Central Rock	Bumper stickers on vehicles; safety talk and video for employees.
Coca-Coca Bottling	Designed a campaign bumper sticker ($800*).
Columbia Gas	Bumper stickers on vehicles; safety talk and video for employees.
Darryl's 1891	Displayed campaign message on changeable message board; employees wore campaign button.
Dine-Around-Downtown	Distributed stickers and bumper stickers.
Division of Fire	Safety talk to employees; provided demonstration of use of "jaws of life" at kick off.

COMPANY OF ORGANIZATION	DESCRIPTION OF SUPPORT*
Division of Parks and Recreation.	Displayed campaign slogan at parks.
Division of Police	Roll call training for all police; display in main lobby.
Division of Public Information	Designed video; press releases; media relations ($4,000*).
Division of Traffic Engineering	Designed slogan signs; provided data collection; media relations ($400).
Downtown Lexington Corporation	Article in newsletter; distributed campaign material to downtown businesses.
Dr. William Charash	Speaker at kick off; participated in PSA video.
Eastern State Hospital	Safety Fair at hospital for employees and patients.
Fast Signs	Designed banner; donation ($60).
Fayette County Schools	Broadcasted RLR education video during summer (1,080 minutes of air time).
Fayette Mall	Provided area for two Safety Fairs; media relations.
Federal Express	Safety meeting and talk to all employees.
Federal Highway Administration	Provided grant funding, PSA's, and technical support.
Foam Design	Donated foam core boards ($150*).
Great Harvest Bakery	Donated food for media PSA kick off ($300).
GTE	Bumper stickers on vehicles; safety talk to all employees.

COMPANY OR ORGANIZATION	DESCRIPTION OF SUPPORT*
Hands-On Originals	Assistance with advertisements.
Harp Enterprises	Donated labels ($200).
Henry Clay High School students	Discussion about project idea.
Kentucky American Water Company	Bumper stickers on vehicles; safety talk and video to all employees; employees wore slogan button ($25*).
UK Transportation Center	Assisted with pre- and post-survey management.
Kentucky Utilities	First business to assist in campaign; bumper stickers on vehicles; safety talk to employees.
KET-TV	Ten minute PSA segment ($800*); news coverage.
Kids Mania at Heritage Hall	7,000 people through exhibit; distributed 1,000 stickers.
KISS - 96.9 FM	Air time for PSAs.
Kroger	Safety fair at four stores; employees wore button ($160*).
Lamar Advertising Co.	Assistance with advertisements.
Leestown Middle School	Safety fair at school.
LexMark	Advertisement of slogan sign at plant.
Lexington Chamber of Commerce	Article in newsletter ($165*).
Lexington Herald-Leader	Articles in newspapers ($17,960*).

COMPANY OR ORGANIZATION	DESCRIPTION OF SUPPORT*
Lexington Lions Club	Safety meeting for all members.
Lynn Blue Print and Supply Company	Donation and design of boards ($100*).
Mary Todd Elementary	Distributed RLR posters.
M&M Sanitation	Safety talk and video to employees.
Margaret Kannensohn, County Attorney	Support of campaign.
Magee's Bakery	Designed traffic signal cookies.
Mayor's Office	Kick off preparation.
Mary Queen Church	RLR information placed in bulletin.
Messer Construction Co.	Safety talk and video to employees.
Neighborhood Assoc.	Distribution of educational materials.
OneAlliance Advertising Company	Assistance with advertisements.
Papa John's Pizza	Advertisement on pizza boxes.
PAX Christian Church	RLR information placed in bulletin.
Plumbers Supply Co.	Placed slogan sign at business.
Purdon Rental	Donation of balloons for kick off ($25*).
Republic Parking Garage	Placed slogan sign at business.
Safety Kleen Corp.	Safety talk and video to employees.

COMPANY OR ORGANIZATION	DESCRIPTION OF SUPPORT*
Sayre School	Kick off presentation.
Spencer Gifts	Traffic signal ($40*).
SuperAmerica	Safety fair; donated and designed bumper stickers ($1,000*).
Target	Safety fair; safety talk for employees; employees wore campaign button ($60*).
TCI	Air time for PSAs on 52 channels ($16,875*).
The Wagner Co.	Made parade banner pole ($50*); donation ($100).
West Hickman Sewage Plant	Safety talk to employees.
United States Postal Service	Safety talk and video for employees.
University of Kentucky Police Department	Assisted with changeable message boards; safety talk to sororities; assisted with survey; assisted with PSA.
University of Kentucky	Presentation to fraternities and sororities.
Women's Electric Assoc.	Safety talk and luncheon.
Video Editing Services	Copied video for campaign ($500*).
Wal-Mart	Safety fair; employees wore campaign button.
WCBR Radio	Air time for PSAs.
WDKY-TV Fox 56	Designed three PSAs; air time for PSAs ($3,000*).
WEKH Radio	Air time for PSAs.

COMPANY OR ORGANIZATION	DESCRIPTION OF SUPPORT*
WEKU Radio	Air time for PSAs.
WJMM Radio	Air time for PSAs.
WKQQ Radio	Air time for PSAs.
WKYT-TV Channel 27	Air time for PSAs.
WLAP Radio	Air time for PSAs.
WLEX-TV Channel 18	Air time for PSAs.
WLRQ Radio	Air time for PSAs.
WMCO Radio	Air time for PSAs.
WMXL Radio	Air time for PSAs.
WTVQ-TV Channel 36	Air time for PSAs.
WUKY Radio	Air time for PSAs.
WVLK Radio	Air time for PSAs.
WWXC Radio	Air time for PSAs.
WXZZ Radio	Air time for PSAs.
Three radio talk shows	Air time ($3,000*)

* The estimated value of the support.

APPENDIX B

MAIL SURVEY

UNIVERSITY OF KENTUCKY TRANSPORTATION CENTER
in cooperation with
LEXINGTON DIVISION OF POLICE
BUREAU OF TRAFFIC

TRAFFIC SAFETY
QUESTIONNAIRE

This survey of licensed drivers is being conducted for Lexington and will take only a few minutes of your time. Since a good response rate is essential for trustworthy results, we would very much appreciate your completing the questionnaire and returning it to the Kentucky Transportation Center. To insure anonymity, do NOT put your name on the form.

1. When you are driving, what traffic violations do you see other drivers committing? Check as many as you recall.

- ☐ Drunk or drugged driving
- ☐ Speeding
- ☐ Not stopping completely at stop signs
- ☐ Illegal turns
- ☐ Tailgating/following too closely
- ☐ Failure to signal a turn
- ☐ Reckless (careless) driving
- ☐ Not stopping for a red light
- ☐ Failure to yield right-of-way
- ☐ Failure to stop at light when making right turn on red
- ☐ Passing illegally (on hill or curve, across double yellow line, etc.)
- ☐ Driving too slow
- ☐ Other: _____

2. How do YOU define running a red light?

- ☐ Entering an intersection on yellow but the light turns red while the car is still in the intersection
- ☐ Entering an intersection on red
- ☐ Other (specify): _____

3. How often do you see others run red lights?

- ☐ Every day
- ☐ A few times a week
- ☐ A few times a month
- ☐ Less than once a month

4. Have you ever seen the police ticket someone who has run a red light?

- ☐ Yes
- ☐ No
- ☐ Not sure -- I have seen someone ticketed near an intersection but I'm not sure why they were stopped

5. Have you ever run a red light as you described it?

- ☐ Yes, once
- ☐ Yes, more than once
- ☐ No (skip to Question 7)

6. How did it happen? (check any factors involved in your running a red light)

- ☐ Couldn't stop in time
- ☐ Afraid car behind would hit me
- ☐ In a hurry
- ☐ No other cars around
- ☐ Not paying close enough attention
- ☐ Unfamiliar with area, didn't see light
- ☐ Distracted by someone in the car
- ☐ Other (specify): _____

7. Out of 100 drivers who run a red light in Lexington, how many do you think will actually be stopped and ticketed by the police?

- ☐ None
- ☐ 1-2
- ☐ 3-5
- ☐ 6-10
- ☐ 11-20
- ☐ More (specify):_____

8. Out of 100 instances where someone runs a red light in Lexington, how many do you think will result in a collision, with the car hitting another car, a pedestrian, or a cyclist?

- ☐ None
- ☐ 1-2
- ☐ 3-5
- ☐ 6-10
- ☐ 11-20
- ☐ More (specify):_____

9. In how many of these cases do you think someone will be hurt?

- ☐ None
- ☐ 1-2
- ☐ 3-5
- ☐ 6-10
- ☐ 11-20
- ☐ More (specify):_____

10. Do you recall seeing or hearing any advertising about safe driving in the last five months? The advertising might have been on the radio, on television, in a newspaper, on a changeable message traffic board, or somewhere else.

- ☐ Yes
- ☐ No
- ☐ Not sure

11. (If Yes) Please describe what you saw or heard._____

_____

12. Two ads or public service announcements are described briefly below. Please indicate whether you recall seeing or hearing any of them.

a. "**He Took a Chance**"--This ad shows an ordinary, responsible man who took a chance that he shouldn't have at an intersection and got in a crash because someone else was taking a chance, too. The slogan is "**The light is red for a reason. So Stop.**"

- ☐ Yes, I remember
- ☐ No, I don't
- ☐ I'm not sure

b. "**We're Putting a Stop to Red Light Runners for Good -- <u>Your</u> Good**" -- This ad shows a police officer talking about the crashes he has seen. He says they are going to be watching out for red light runners.

- ☐ Yes, I remember this
- ☐ No, I don't
- ☐ I'm not sure

13. Do you recall seeing or hearing ads or information on red light running anywhere else in the last five months?

- ☐ Yes
- ☐ No
- ☐ Not sure

14. (If Yes) Please indicate where the ads or information appeared. Check all that apply.

- ☐ Television
- ☐ Magazine ad
- ☐ Radio ad
- ☐ Changeable Message Traffic Board
- ☐ Newspaper article
- ☐ Magazine article
- ☐ Newspaper ad
- ☐ Flier or direct mail insert
- ☐ Other (specify): _____

15. Please note anything you happen to remember about any of these ads or information:

_____

_____

16. Have you changed your driving in any way as a result of seeing or hearing any of these ads?

- ☐ Yes, definitely
- ☐ Probably (skip to Question 19)
- ☐ Probably not (skip to Question 19)
- ☐ No (skip to Question 19)

17. (If Yes) In what particular way have you changed something about your driving?

- ☐ I stop for red lights now
- ☐ I stop for yellow lights now
- ☐ Other (specify): _____

18. Which ad, if any, made you change your driving?

- ☐ "We're Putting a Stop to Red Light Runners"
- ☐ "He Took a Chance/ "The Light is Red for a Reason. So Stop"
- ☐ "In the Bluegrass, Red Means Stop"
- ☐ Other ads
- ☐ None in particular

Finally, we need some background information for analysis purposes. A reminder: since your name does not appear on the questionnaire, the answers cannot be identified as yours.

19. Your age group:

☐ 16-25
☐ 26-45
☐ 46-60
☐ over 60

20. Your sex:

☐ Male
☐ Female

21. Your occupation: _____

22. Last grade you completed in school:

☐ Less than high school
☐ Some high school
☐ High school graduate
☐ Some college
☐ College degree
☐ Post-graduate

23. How often do you wear a seat belt when you drive?

☐ Always
☐ Most of the time
☐ Less than half the time
☐ Never

24. About how many miles per year do you drive?

☐ Less than 10,000
☐ 10,000 to 15,000
☐ 15,000 to 20,000
☐ More than 20,000

25. Have you ever gotten a ticket for a moving violation?

☐ No
☐ Yes, once
☐ A few times
☐ Many times

26. Have you ever taken a driver education course?

☐ No
☐ Yes

THANK YOU VERY MUCH!
PLEASE FOLD THE COMPLETED QUESTIONNAIRE IN HALF AND STAPLE. RETURN THROUGH INTER-DEPARTMENTAL MAIL, RETURN LABEL IS ON THE BACK OF QUESTIONNAIRE.
PLEASE SEND BACK AS SOON AS POSSIBLE.