



Evaluation of the Effects of SFST Training on Impaired Driving Enforcement

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Introduction

In 2008, 11,773 people died in alcohol-impaired-driving vehicle crashes, accounting for nearly 32% of the total traffic fatalities (NHTSA, 2008). Fatalities resulting due to a driver with a blood alcohol concentration (BAC) of .08 grams per deciliter (g/dL) or higher are considered alcohol-impaired-driving fatalities. To decrease the number of alcohol-related motor vehicle fatalities and injuries, the National Highway Traffic Safety Administration has contributed to the improvement of highway safety by giving law enforcement officers tools to assist in the identification of impaired drivers for the purpose of more effectively and consistently enforcing impaired driving laws. Beginning in 1975, NHTSA sponsored research that led to the development of the Standardized Field Sobriety Tests (SFST) for law enforcement officers to use to evaluate motorists who are suspected of driving while impaired (DWI). SFST is a battery comprised of three different tests: the horizontal gaze nystagmus (HGN) test, the walk-and-turn test, and the one-leg-stand test (see Stuster, 2001). The purpose of SFST training is to give a law enforcement officer the knowledge and tools to identify an impaired driver, make effective roadside evaluation of the driver on initial contact, and evaluate a suspected impaired driver using scientifically validated tests. Additionally, the training shows law enforcement officers how to effectively record and describe observed behaviors of

impaired driving suspects and present effective testimony in court.

Officers have used SFSTs since 1981 to help identify impaired drivers with BACs equal or greater than .10 g/dL and since 1998 to discriminate at the .08 g/dL BAC level. Many studies have found NHTSA's SFSTs to provide accurate and reliable support for officers when making roadside arrest decisions for DWI (Burns & Moskowitz, 1977; Tharp, Burns, & Moskowitz, 1981; Burns & Anderson, 1995; Anderson & Burns, 1997; Burns & Dioquino, 1997; and Stuster & Burns, 1998). Overall, when the three components of SFST are combined, officers are accurate in detecting drivers with BACs higher than the limit of .08 g/dL in 91% of cases (Stuster & Burns, 1998). Furthermore, officers have found the SFST to be appropriate for field use. In 1986, the Advisory Committee on Highway Safety of the International Association of Chiefs of Police (IACP) recommended that law enforcement agencies adopt and implement SFSTs and the associated training program.

Since the SFST battery was developed in 1981, it has largely replaced the non-validated sobriety tests used by patrol officers to make DWI arrest decisions. Currently, the SFST is used in all 50 States and has become the standard pre-arrest procedures for evaluating DWI in many law enforcement agencies. In addition to the scientific evidence in support of the SFST, extensive operational experience with SFSTs has convinced many law enforcement officers and courts of SFST's diagnostic utility. However, despite NHTSA's support for SFST training, some police agencies do not require their officers to receive SFST training. The purpose of this study was to evaluate the benefits of SFST training on officers in performing DWI-related tasks.

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Methods

Anacapa Sciences, Inc.,¹ was selected by NHTSA to conduct an evaluation, including selecting a study site, devising and conducting data collection, and analyzing the data. Following the selection of the New York City Police Department's (NYCPD) Highway District as the study site, the New York Governor's Traffic Safety Committee gave SFST training to study participants free of charge.

Study Site

The NYCPD Highway District was well suited for the project because many officers had traffic enforcement as a primary responsibility, and very few officers had been previously trained in administration of the SFST battery.

The NYCPD Highway District is responsible for all law enforcement on the 418 miles of highway in the five boroughs of New York City. The Highway District officers also provide traffic enforcement support to other commands when requested by the borough chiefs and they conduct special enforcement programs. One unit of the Highway District focuses exclusively on the surface streets of Manhattan. At the time of the study, the Highway District—known traditionally as the Highway Patrol—was composed of 280 officers, whose primary responsibility and mission was traffic enforcement.

Despite the focus on traffic enforcement, at the time of the study only 20 officers of the Highway District had received SFST training and only 2 officers were certified SFST instructors. No other officers of the Highway Patrol had received any formal training concerning DWI detection or sobriety evaluation, either at the police academy or in service. Instead, the officers relied exclusively on observation and portable breath testing (PBT) devices to assess impairment during enforcement stops.

Training

A central part of this study was the administration of SFST training to a group of officers at the study site. Training was sponsored by the Governor's Traffic Safety Committee. From April to December 2004, 102 NYCPD officers received a standard SFST training course administered during six 3-day sessions, amounting to some 22 hours of instruction. The officers receiving the training were grouped into 6 classes. The goals were to make officers more skillful at detection and description,

increase DWI arrests, and present stronger cases for prosecution of DWI offenses. The principal activity of this training was hands-on practice by the participants.

During standard SFST training, officers spend most of the time on various elements of DWI detection and description tasks such as video-taped presentations, brief "testimony" sessions, controlled drinking practices, and practice administering the SFSTs as well as recording and interpreting test results. Training on report writing and participation in moot courts, a written test, and a field proficiency examinations are considered part of standard SFST training (NHTSA, n.d.).

Data Collection and Analyses

In order to evaluate the impact of SFST training on officers' DWI-related activities, data on patrol hours, number of DWI arrests, and self-reported data on DWI arrest skills were gathered. For comparison purposes, such data were also gathered from a "control" group of officers who did not receive SFST training.

The 102 officers were trained as part of this study and two types of comparisons were conducted. For officers selected for training, DWI-related activities data prior to their SFST training was compared with their data following SFST training. This type of within-group comparison was intended to show the effect of SFST training on the various DWI-related activities on officers receiving SFST training using their own pre-training experiences for comparison. For within-group analysis 54 officers with no DWI arrest data were excluded. Within-group analyses compared the same officers before and after they received SFST training to determine whether the training made a difference in their DWI enforcement.

In the second type of analysis, self-reported measures on DWI-task-related activities of 80 SFST-trained officers were compared to those of 84 officers who did not receive SFST training. This type of between-group analysis was intended to show the effect of SFST training on officer's DWI-related activities using non-SFST training officers as a comparison group.

Results

Within-Group Comparisons

Of the 102 officers who received SFST training, 80 completed questionnaires on various aspects of SFST administration prior to and after receiving SFST training. New

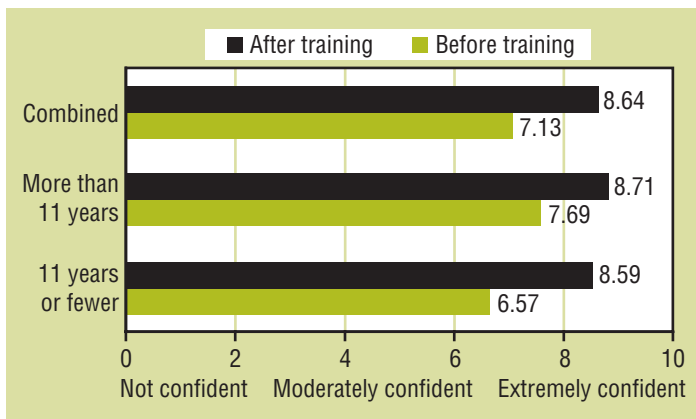
¹ Under NHTSA Contract # DTNH22-98-D5-0798

officer recruits, who did not complete pre-training questionnaire, were excluded from these comparisons. The group of trained officers included in the comparisons averaged 11 years of law enforcement experience.

Using a questionnaire, officers were asked how confident they felt in determining whether to arrest a driver for DWI.² Following SFST training, all officers reported feeling more confident in their ability to accurately determine whether to arrest a driver for DWI when compared to their reported levels before receiving the SFST training. Following SFST training, on average, officers reported feeling highly to extremely confident in accurately determining whether to arrest a driver for DWI.

When examining officers' confidence in determining whether to carry out a DWI-related arrest responses varied according to the officer's years of experience. Those with 11 or fewer years of experience, on average, reported a greater improvement in their confidence level compared to officers with more than 11 years of experience after receiving the training (Figure 1). This difference in improvement may be due to the lower confidence level reported by officers with 11 or fewer years of experience prior to receiving SFST training than officers with more than 11 years of experience.

Figure 1
How confident were you in your ability to accurately determine whether to arrest a driver for DWI before and after SFST training, by officers' years of experience (mean responses)



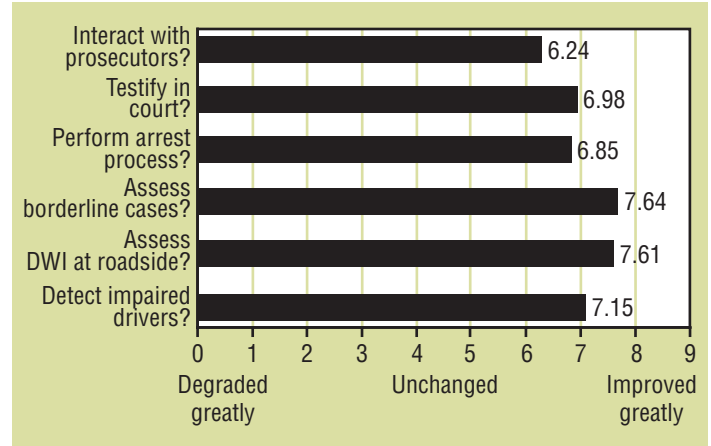
When asked to rate the effect of SFST training on their ability³ to conduct DWI related tasks following training, officers report that SFST training slightly improved

² Questions used a 10-point Likert scale ranging from a low of 1="Not Confident" to 10="Extremely Confident."

³ Questions used a 10-point Likert scale with anchors ranging from 1="Degraded Greatly" to 10="Improved Greatly."

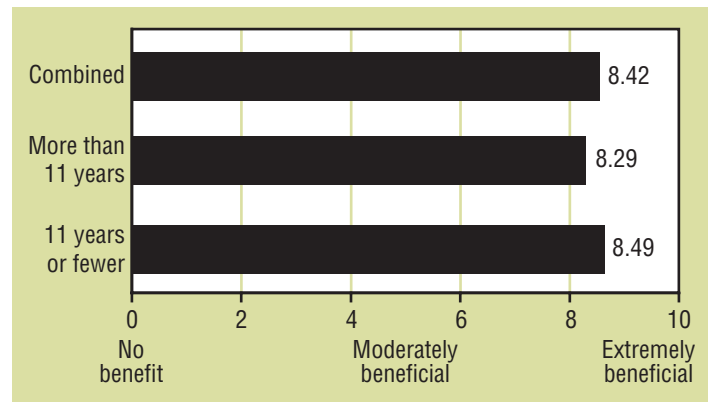
their ability to interact with prosecutors. Officers also reported that SFST training moderately improved their ability to detect impaired drivers, assess DWI at roadside, assess borderline cases, and perform the arrest process including testifying in court (Figure 2).

Figure 2
Has SFST training affected your ability to: (mean responses)



Overall, officers who received SFST training found it to be highly beneficial in conducting their assigned DWI-related duties. Officers with 11 or fewer years of experience found SFST training slightly more beneficial than those with more than 11 years of training (Figure 3).

Figure 3
Overall, how would you rate the SFST training you received? (by officers' years of experience)



The participating officer's number of DWI arrests was used as an indicator of DWI arrest performance. The number of arrests prior to SFST training was compared to the officer's arrests after training. Of the 102 officers trained in SFST, the DWI arrest performance of 48 officers was analyzed before and after receiving SFST training. Of the 54 officers excluded from DWI arrest data analysis, 21 were new officer recruits without pre-training DWI arrest data, and 29 officers made no DWI arrest before or after SFST training. An additional four

officers who didn't have any patrol hours were also excluded from analyses.

Individual DWI arrest performance for the 48 officers during the study period ranged from 1 DWI arrest to 43 arrests. Six officers made their only arrest during their pre-training period and 14 officers made their only arrest after receiving SFST training. On average, the 48 officers made 3 DWI arrests during their pre-training periods and 3.5 arrests during their post-training periods.

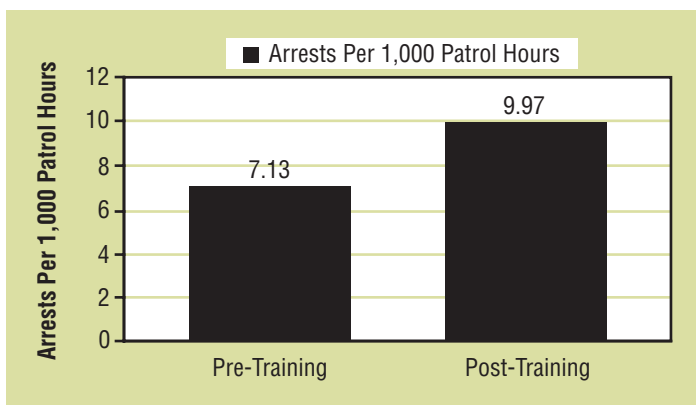
When comparing the number of pre-training DWI arrests to post-training DWI arrests on a per-1,000-patrol-hour basis, officers made an average of 10 arrests per 1,000 patrol hours after SFST training, compared to 7 arrests before training. This difference is significant with a 95% confidence level ($p=0.04$). DWI arrest summaries and patrol hours for the 48 officers included in the analyses are shown in Table 1.

Table 1
Summary of Pre- and Post-Training DWI Arrest Data

	Pre-Training	Post-Training
DWI Arrests	140	168
Patrol Hours	19,631	16,859
Arrests Per 1,000 Patrol Hours	7.13	9.97
Average BAC (g/dL)	.12	.12

SFST training was administered to officers separated into six classes. When examining the number of DWI arrests pre-SFST training to post-SFST training by SFST training class, all classes showed higher rate of arrests after receiving SFST training compared to pre-SFST training performance. Across all classes, on average, officers made 10 arrests following training compared to 7 arrests before training (Figure 4).

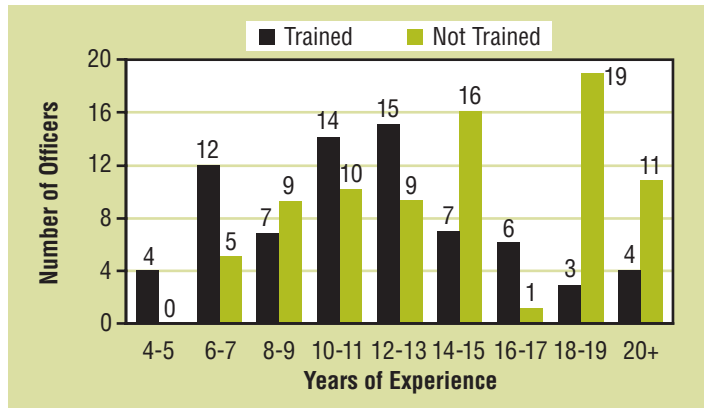
Figure 4
Arrests per 1,000 patrol hours



Comparisons Between Groups

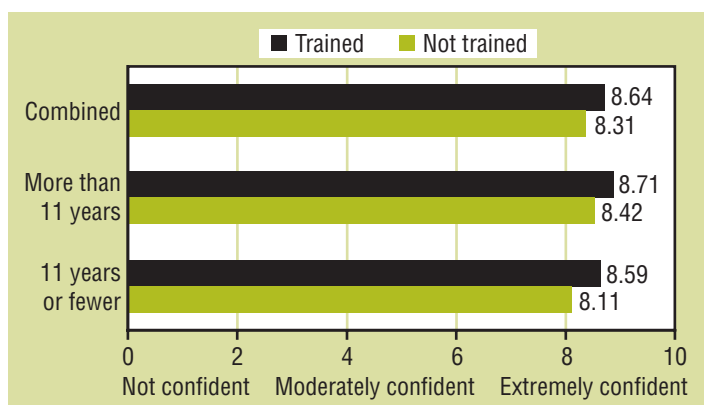
The second type of analysis conducted included comparisons between various DWI-related outcomes for SFST-trained officers and a group of non-SFST-trained officers. For these comparisons, the survey administered to the 80 officers who had received SFST training was also administered to 84 officers who had not received the training. The group of trained officers averaged 11 years of law enforcement experience compared to 14 years for non-trained officers (Figure 5).

Figure 5
Years of experience distribution of SFST trained and non-trained officers



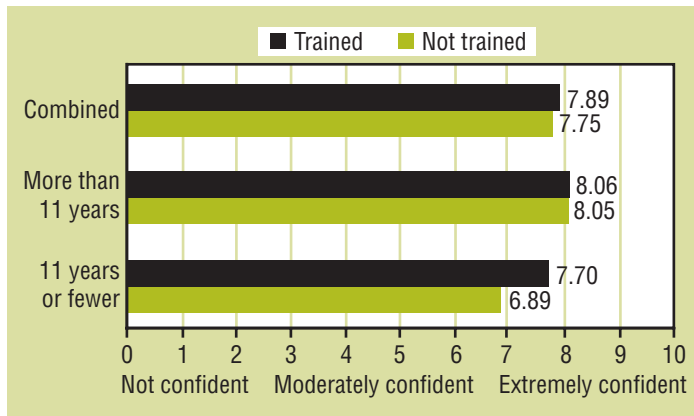
Officers who received SFST training and those who did not receive training were asked to report their levels of confidence in making DWI arrest decisions. SFST-trained officers, on average, reported slightly higher confidence in their ability to accurately determine whether to arrest a driver for DWI than non-SFST-trained officers. Trained officers in both experience categories, on average, reported slightly greater confidence in performing this task than non-trained officers (Figure 6).

Figure 6
How confident are you in your ability to accurately determine whether to arrest a driver for DWI?



Officers were also asked to report their confidence levels in testifying in court in support of a DWI arrest.⁴ The confidence level of SFST-trained officers to testify in court in support of a DWI arrest did not differ from the confidence level of non-SFST-trained officers. However, since non-SFST-trained officers have more years of experience, the level of experience may be a confounder. When examining the level of confidence according to officers' years of experience, those with 11 or fewer years of experience who received SFST training reported being more confident in testifying in court compared to non-SFST-trained officers with similar years of experience (Figure 7).

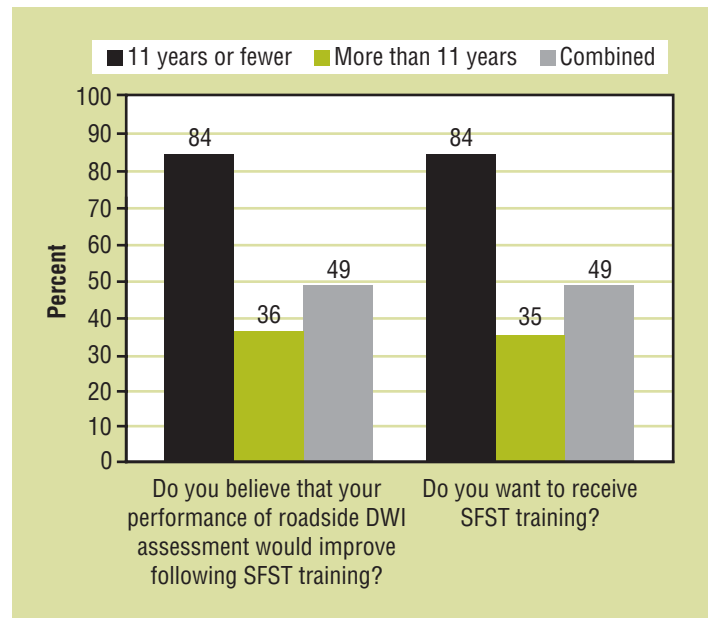
Figure 7
How confident are you in your ability to testify in court in support of a DWI arrest?



Non-SFST-trained officers were also asked if they considered their DWI roadside assessment skills would improve if they received SFST training and whether they wanted to be trained. Approximately 49% of officers who did not receive SFST training said their performance in roadside DWI assessments might improve following SFST training, and a similar proportion of non-SFST-trained officers were interested in receiving SFST training. However, when separated by years of experience, non-SFST-trained officers with 11 or fewer years of experience were much more likely to believe their DWI performance would improve following SFST training. Some 84% of officers from this group indicated interest in receiving SFST training compared to 35% for those with more than 11 years of experience (Figure 8).

⁴ Questions used a 10-point Likert scale ranging from a low of 1="Not Confident" to 10="Extremely Confident."

Figure 8
Percent of non-SFST-trained officers responding "Yes" according to years of experience



Conclusions and Discussion

As a result of SFST training, officers reported increased confidence in performing DWI-related activities compared to pre-SFST training levels. For example, regardless of their number of years in service, officers reported increases in their confidence levels in DWI detection skills after SFST training. Additionally, following SFST training, the number of DWI arrests per officer patrol hour increased significantly, compared to pre-SFST-training levels. The majority of officers who received SFST training as part of the study consider SFST training to be highly beneficial, and the majority of non-SFST-trained officers with 11 or fewer years of experience reported interest in receiving such training and thought it would improve their DWI roadside assessment skills.

When compared to officers with more than 11 years of experience, those with less work experience showed a greater increase in their reported confidence levels to conduct DWI assessments. The results indicate SFST training may benefit most officers early in their careers.

Among SFST-trained officers, those with less experience showed a greater improvement in confidence in DWI detection and abilities to testify in court when compared to non-SFST-trained officers with comparable years of experience. In general, officers with less than 11 years of experience reported greater confidence in their abilities to make accurate arrest decisions. They also reported higher levels of confidence in testifying in court in sup-

port of their DWI arrest decisions compared to officers who did not receive the training.

SFST training provides an essential background on DWI problems and issues, and aims to increase the skills of officers involved in alcohol-impaired-driving enforcement. Based on the results of this study, SFST training may contribute to increasing officer's confidence in performing DWI roadside assessments. Specifically, officers reported that SFST training improved their skills in detecting impaired drivers, assessing DWI at roadside, and assessing borderline cases.

Limitations

A number of limitations existed in this study. First, officers selected for the SFST training were in their early years of their Highway Patrol careers, which reflects the reasonable intentions of the Highway Patrol to provide training primarily to those officers who might benefit from the knowledge of SFST for a longer period. Many of the officers who were not selected to receive SFST training were in their final years at the department; therefore comparisons between these two groups should be made with caution, as officers' years of experience may be related to their DWI-related activities.

Second, data collection goals were not fully achieved. Due to study constraints, the post-DWI data collection period was shortened and as indicated previously, officers who had no pre-SFST-training records were excluded from analyses.

Finally, during the course of the study it was learned that the department's procedures and customs inhibited officers from a significant increase in the number of DWI arrests. For example, while the department's overtime policy created an incentive to make DWI arrests, the amount of paperwork required, constraints imposed by the prosecutors and the courts, and other customary practices, acted as a powerful barrier to making more than one arrest per patrol shift. Although on a per-patrol-hour basis, officers conducted significantly more DWI arrests post-SFST-training compared to pre-SFST-training, these barriers may have limited the full benefit of SFST training on DWI arrests.



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Citation

- Anderson, E. W., & Burns, M. (1997). Standardized Field Sobriety Tests: A Field Study. *Proceedings of the 14th International Conference on Alcohol, Drugs and Traffic Safety, 2*, 635-639.
- Burns, M., & Anderson, E. W. (1995). A Colorado Validation Study of the Standardized Field Sobriety Test (SFST) Battery. Denver, CO: Colorado Department of Transportation.
- Burns, M., & Dioquino, T. (1997). A Florida Validation Study of the Standardized Field Sobriety Test (S.F.S.T.) Battery. Tallahassee, FL: State Safety Office,
- Burns, M., & Moskowitz, H. (1977, June). Psychophysical Tests for DWI Arrest. (DOT HS 802 424). Washington, DC: National Highway Traffic Safety Administration.
- NHTSA. (n.d). DWI Detection and Standardized Field Sobriety Testing: Administrator's Guide. Washington, DC: National Highway Traffic Safety Administration.
- NHTSA. (2008). Traffic Safety Facts: Alcohol-Impaired Driving, 2008 Data. DOT HS 811 155. Washington, DC: National Highway Traffic Safety Administration.
- Stuster, J. (2001, November). Development of a Standardized Field Sobriety Test (SFST) Training Management System. (DOT HS 809 400). Washington, DC: National Highway Traffic Safety Administration.
- Stuster, J. W. (2006). Validation of the Standardized Field Sobriety Test (SFST) Battery at 0.08 Percent BAC. *Journal of the Human Factors and Ergonomics Society, 48* (3), 608-614.
- Stuster, J., & Burns, M. (1998). Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent. (DOT HS 808 839). Washington, DC: National Highway Traffic Safety Administration.
- Tharp, V., Burns, M., & Moskowitz, H. (1981). Development and Field Test of Psychophysical Tests for DWI Arrest. (DOT HS 805 864). Washington, DC: National Highway Traffic Safety Administration.

This research note and other general information on highway traffic safety may be accessed by Internet users at: www-nrd.nhtsa.dot.gov/CATS/index.aspx