SCHOOL BUS STOP-ARM VIOLATIONS IN FLORIDA: A FOLLOW-UP STUDY

FINAL REPORT

Prepared for

SCHOOL TRANSPORTATION MANAGEMENT SECTION
Department of Education
State of Florida

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EXECUTIVE SUMMARY

Introduction and Background

Since the original stop-arm violation study completed in February 1996, the Florida Department of Education (DOE) and Florida's 67 school districts have been involved in various efforts to educate the motoring public about Florida's school bus stop law (*F.S. 316.172*) and the dangers that committing stop-arm violations presents to students. Many of these efforts were the result of recommendations contained in the February 1996 final report. Some of the methods used for education and awareness included the use of public service announcements (PSAs), brochures and pamphlets, targeted law enforcement, and a toll free WATS line (1-888-STOP-4-Kids) for motorists and others including school district staff such as school bus drivers to report motorists whom they witness committing stop-arm violations.

At the request of the DOE, the Center for Urban Transportation Research (CUTR) performed a follow-up study to the study completed in February 1996 to once again measure the extent of the current statewide stop-arm violation problem. In addition, the follow-up study was carried out in an attempt to determine the effect of the various strategies employed by the DOE and school districts to reduce this problem. Unlike the previous study, the aim of this current study was to quantify the extent of the stop-arm violation problem in comparison to the data recorded in May 1995 and not necessarily to develop a host of countermeasures, additional educational and awareness measures, and/or future research as was done as part of the February 1996 study. However, a set of general recommendations are included as part of this final report.

The importance of continuing to reduce and ultimately eliminate the fatal and non-fatal injuries that needlessly occur to students at school bus stops during the loading and unloading process is of primary importance in Florida, and elsewhere. With the exception of the previous study conducted in 1995/1996, it has been difficult to accurately define the extent of the statewide stop-arm violation problem due to a lack of empirical data. For this reason, a follow-up study was undertaken to gather additional data about the magnitude of the stop-arm violations that are occurring statewide during a typical school day. This follow-up study required that two major tasks be completed.

The first task involved a field study to record the number of stop-arm violations that occur statewide during a typical school day. The second task involved comparing the number of stop-arm violations by school district between the first and second studies and to determine what effect, if any, the various education, awareness, and enforcement efforts employed by each school district and the DOE might have had on the incidence of stop-arm violations between the two studies.

The data that was collected assisted the research team in defining the current stop-arm violation problem as well as gaining a greater understanding of the usefulness of the various strategies employed by the DOE and school districts during the past five years to combat the problem. The methodology and findings from each of these tasks as well as the conclusions drawn from each are detailed in the body of this report.

Methodology

In order to preserve methodological and temporal consistency between the two studies, school bus drivers were again requested to collect stop-arm violations on Thursday, May 18, 2000. In the previous study, Thursday, May 18, 1995, was also chosen to represent a typical school day in Florida. As was the case in the two studies, the majority of school districts participated in the two field studies. However, due to scheduling conflicts and other internal problems, it was necessary for a few school districts to collect data on the following Thursday, May 25, 2000. Compared to the study completed in February 1996 in which 58 school districts returned stop-arm violation data, a total of 55 of the 67 school districts returned data for this current study. For various reasons, the following twelve school districts did not return data collection forms from the May 2000 field study: Baker, Flagler, Hillsborough, Holmes, Leon, Madison, Polk, Taylor, Union, Wakulla, Walton, and Washington. Similar to the previous study, participation in the May 2000 field study by a school district was voluntary and determined only if that school district returned its *used* data collection forms to the research team for analysis (whether blank or not).

In the second field study conducted in May 2000, each of the 67 school districts were mailed data collection forms. They were requested to distribute them to school bus drivers so that they could record the number of stop-arm violations while driving regular morning, midday, and afternoon trips/routes. As was the case for the May 1995 field study, each school district was again given approximately ten percent more forms than they currently have school bus drivers. This was done to ensure complete coverage of each route should one form not be sufficient for recording the number of stop-arm violations. This resulted in the distribution of nearly 15,000 data collection forms. By comparison, just over a total of 14,200 were distributed as part of the previous study. The recording of stop-arm violations took place over an entire school day encompassing all morning, midday, and afternoon trips. The identical data collection procedure was utilized in the previous field study conducted in May 1995.

As was the case in the May 1995 field study, school bus drivers were again asked to be responsible for the recording of stop-arm violations. They were instructed to record the number of stop-arm violations while attending to the primary requirements of driving their regular trips/routes. Consequently, the recorded data may be subject to some reporting and recording inaccuracies. For example, a driver may have failed to report several vehicles that committed stop-arm violations or a driver may have inadvertently indicated an inaccurate response such as an incorrect number of children loading or unloading at a particular school bus stop at which the violation occurred. Each school bus driver was instructed that their main concern was for the safety of the children entrusted in their care and not the recording of stop-arm violations. If time did not permit, school bus drivers were instructed to make mental notes of the stop-arm violations and record them on the form following the completion of the route or when time permitted.

Once again, the stop-arm violation data collection form used by school bus drivers (see Appendix A) was designed in such a manner as to facilitate the ease of recording violations while at the same time permitting each driver to regard student safety foremost. With one minor exception in which the information about roadway and school bus types was modified or added,

the form used in the May 2000 field study was identical to the one used in the May 1995 field study. Specifically, drivers were responsible for collecting the following information about each individual stop-arm violation:

- time of occurrence (morning, midday, afternoon)
- number of students at the school bus stop
- whether the vehicle was traveling in the same or opposite direction as the school bus
- whether the vehicle was traveling on the left or right of the school bus
- type of vehicle
- type of roadway
- whether the violation occurred in an urban or rural area
- whether the violation occurred on a paved or unpaved roadway surface

Findings from the May 2000 Field Study

Analysis of stop-arm violations recorded during the May 2000 field study indicates that a serious problem still exists in Florida regarding stop-arm violations. The recorded data also indicate that the problem is potentially getting worse since more stop-arm violations were recorded during May 2000 than in May 1995. During the May 2000 field study, a total of 10,719 vehicles were recorded statewide committing stop-arm violations during a typical school day. By comparison, a total of 10,590 vehicles were recorded committing stop-arm violations in May 1995, or 129 fewer than in May 2000. As mentioned prior, 12 school districts did not participate in the May 2000 field study (nine did not participate in May 1995). These 12 non-participating school districts accounted for approximately 2,135 of the 14,108 school buses in operation during the May 2000 field study. Applying the statewide average of 0.76 stop-arm violations per school bus in operation (compared to 0.95 from May 1995) (see Table 11) to the number of school bus operated by these 12 school districts, 1,623 additional stop-arm violations might have been recorded by school bus drivers statewide had these particular school districts participated in the May 2000 field study. This could have potentially increased the total to about 12,350 stop-arm violations statewide during the May 2000 field study.

Table ES-1 shows a comparison of the school districts with the greatest change in the number of recorded stop-arm violations between the May 2000 and May 1995 field studies. As the table shows, Lee District Schools experienced the largest decrease in stop-arm violations with 670 fewer and Broward District Schools experienced the largest increase with 289 additional stop-arm violations.

TABLE ES-1: Comparison of Stop-Arm Violations Between May 1995 and May 2000

District	Field Study		Change In Stop-Arm Violations
	May-95	May-00	
A	B	C	D
Alachua	233	223	-10
Baker	11	No Data	NA
Bay	No Data	164	NA

District	Field Study		Change In Stop-Arm Violations
	May-95	May-00	
A	B	C	D
Bradford	11	16	5
Brevard	362	390	28
Broward	851	1,140	289
Calhoun	5	2	-3
Charlotte	51	57	6
Citrus	50	49	-1
Clay	57	147	90
Collier	168	233	65
Columbia	No Data	32	NA
Dade	1,697	1,749	52
Desoto	2	9	7
Dixie	2	4	2
Duval	No Data	869	NA
Escambia	335	402	67
Flagler	20	No Data	NA
Franklin	0	1	1
Gadsden	No Data	13	NA
Gilchrist	4	1	-3
Glades	0	1	1
Gulf	2	1	-1
Hamilton	0	6	6
Hardee	7	7	0
Hendry	11	33	22
Hernando	34	54	20
Highlands	26	20	-6
Hillsborough	482	No Data	NA
Holmes	No Data	No Data	NA
Indian River	53	32	-21
Jackson	22	12	-10
Jefferson	4	20	16
Lafayette	0	0	0
Lake	105	123	18
Lee	1,068	398	-670
Leon	131	No Data	NA
Levy	No Data	22	NA
Liberty	No Data	0	NA
Madison	No Data	No Data	NA
Manatee	263	285	22
Marion	361	98	-263

District	Field Study		Change In Stop-Arm Violations
	May-95	May-00	
A	B	C	D
Martin	51	26	-25
Monroe	No Data	130	NA
Nassau	53	35	-18
Okaloosa	98	90	-8
Okeechobee	28	15	-13
Orange	480	729	249
Osceola	69	205	136
Palm Beach	909	271	-638
Pasco	263	183	-80
Pinellas	919	1,129	210
Polk	65	No Data	NA
Putnam	27	52	25
Santa Rosa	69	84	15
Sarasota	294	354	60
Seminole	259	310	51
St. Johns	75	37	-38
St. Lucie	194	159	-35
Sumter	35	21	-14
Suwannee	16	11	-5
Taylor	26	No Data	NA
Union	1	No Data	NA
Volusia	197	265	68
Wakulla	8	No Data	NA
Walton	21	No Data	NA
Washington	5	No Data	NA
Totals	**10,590**	**10,719**	**129**

Summary and Conclusions

Based on the findings from the field study conducted in May 2000 in which a total of 10,719 stop-arm violations were recorded, the problem of motorist's disregarding the law pertaining to stopping for school buses has gotten slightly worse. Compared to the 10,590 stop-arm violations recorded in May 1995, 129 more violations were recorded in May 2000. Among other reasons, this increase is partially explained by the growing problem of aggressive driving not only in Florida, but nationwide, as well as an increase in the number of registered vehicles as well as school buses on the road in Florida during May 2000 compared to May 1995. As a result of the findings from the May 2000 field study, the following set of general recommendations are put forth in attempt to reduce the statewide problem of stop-arm violations. Once again, the following recommendations focus primarily on enforcement and education countermeasures at both the local and state levels.

Local Level

Once again, on the local level, every attempt should be made to encourage the formation of and participation in existing Community Traffic Safety Team (CTST) committees. Those persons involved with these committees should include school district transportation staff and other school board representatives, local law enforcement, city and county traffic engineers, local planners, and representatives from the American Automobile Association (AAA) and local Parent-Teacher Association (PTAs). These groups should work cooperatively to develop and implement practical and effective countermeasures to this problem at the local level. Enforcement and education should be the primary focus.

1. Continue school bus stop "enforcement blitzes." For example, an effort of this type could include one officer riding on a school bus identifying violators on a route that has been identified as having a high incidence of stop-arm violations and another officer in a marked vehicle to pull over the violators and issue citations. While law enforcement has been responsive to this problem, a paradigm shift is needed to combat this serious problem. The shift that law enforcement needs to embrace is to make school bus safety the business of every law enforcement officer. Law enforcement needs to take a decentralized approach that makes every officer responsible for school bus safety. It must become a community priority. Substantial effort will need to be devoted to such enforcement efforts to maximize the probability of achieving measurable results.

   Based on the results from the May 2000 field study, there is an urgent need to place specific emphasis on specific areas within school districts. Specific techniques to combat stop-arm violations can include unmarked cars, motorcycles, unmarked decoy vehicles, non-traditional vehicles, and automated enforcement. Use of unmarked, non-traditional vehicles for example will contribute to public awareness by increasing motorist uncertainty about which vehicles are used for enforcement. It will also generate free publicity about the enforcement program. Marked patrol cars create a deterrent effect when present, but this deterrence is lost when they leave the area. When motorists see a marked patrol car, they are usually on their best behavior and stay that way until it is out of sight.

   Several enforcement zones should be selected within the school district that are known to have chronic stop-arm violators. Each enforcement zone should be several blocks to, perhaps, a half mile in length. These zones could be selected by using information from school bus drivers or other methods such as citations issued to identify road segments and intersections that have been sites of violations. Enforcement zones may also be selected within the community based on citizen or parental complaints. The use of crash statistics and citizen complaints to select enforcement areas will lend credibility to the effort and awareness among the public.

   It is suggested that at least two enforcement details be conducted in the predesignated locations. It is also recommended that deployment strategies remain flexible, permitting officers to go to another enforcement area, if violations decline in an assigned location.

The objective of the deployment strategy should be to maximize the visibility of the law enforcement presence. Deployment of law enforcement officers to a general area to work individually at different times is one way to accomplish this. Another method is a team approach. Visibility can sometimes be accomplished most effectively by detailing several enforcement officers to work together in a designated area rather than assigning each officer to work individually at various locations. Working as a team allows flexibility, such as by permitting officers to use marked patrol vehicles, unmarked cars, motorcycles or other enforcement vehicles. Whichever approach is ultimately carried out, the objective should be to maximize law enforcement visibility to increase the perception of law enforcement presence within the special enforcement area.

2. Develop a stop-arm violation program to emphasize awareness and education of the public. Local partners including the Community Traffic Safety Team (CTST) (if it exists) and others should be involved in the develop of the stop-arm violation program. The media will be key to the overall success of any program. The power of the media should be used as an advantage whenever possible. School bus safety is a hot topic in the media and community. Use this advantage by keeping local media informed about what types of countermeasures are being implemented and their success rates. The media can be the best ally and most efficient means of communicating with the public. In addition, technology is now allowing nearly constant and instant communication. The Internet (e.mail and the World Wide Web) have proved that communication can be fast, cheap, and relatively labor-free. Using this technology, those persons concerned about stop-arm violations can quickly connect with each other and organize for change at the grassroots level.

3. To increase voluntary compliance with the school bus stop law (among other traffic laws), the public should be made aware of the stop-arm violation program, although this may be contrary to the enforcement philosophy. Publicize the enforcement effort to the maximum extent possible. It is a good idea to announce on morning radio programs where the enforcement activities will be conducted that day, as long as the schedule does not become so regular it becomes predictable. The objective of the program is to gain voluntary compliance of the school bus stop law, which will in turn reduce the potential for tragedy. Writing citations is not the main objective, but a means to increase public awareness, voluntary compliance, and improve the safety of students. This theme must be incorporated into the program to ensure public acceptance of the special enforcement effort. The public should also be educated about the school bus stop law in order to avoid non-compliance with the law.

4. Encourage law enforcement officers and others to participate in CTST and other community-based meetings and activities on a regular basis which support the stop-arm violations program (for example, providing ride-along opportunities for reporters; demonstrating laser or radar equipment for citizens, reporters, prosecutors, legislators and judges; participate as speakers at PTA meetings, provide TV and radio interviews, etc.).

5. Data collection will be an important aspect of the stop-arm violations program. A method should be established at the district level for gathering statistics on stop-arm violations. Gathering this information establishes a baseline for further efforts later on regarding the effectiveness of the stop-arm violation program.

State Level

As was stated in the previous research, at the state level, the Florida Commissioner of Education, the Legislature, and other relevant groups representing law enforcement, planning, and school districts should work cooperatively and diligently to develop and implement practical and effective countermeasures to reduce this serious problem. These groups should include the Safety Management Systems committee created in accordance with the Intermodal Surface Transportation Efficiency Act (ISTEA), Florida Department of Transportation (FDOT), Department of Highway Safety and Motor Vehicles (DHSMV), Department of Community Affairs (DCA), Florida Association of School Administrators (FASA), Florida Association of State Troopers (FAST), Florida Sheriffs Association (FSA), Florida Association of County Commissioners (FACC), Florida Trucking Association (FTA), League of Cities, Florida School Boards Association (FSBA), Florida Association of District School Superintendents (FADSS), American Automobile Association (AAA), and other relevant agencies or groups.

1. Conviction for a stop-arm violation should involve a significant number of points, monetary fine, and/or a minimum license suspension. Greatly enhanced penalties should accompany repeat violations or those involving serious injury or death. The goal should be to once again make revisions to Florida Statutes to provide much greater deterrent for convicted violators of the school bus stop law. Specific recommended revisions should include substantially increasing the fines for first and subsequent violations, points assessed against the driver's license of convicted violators, and adding jail time and/or community service hours for convicted violators as well, especially repeat violators.

2. Recommended statutory revisions should also include empowering school bus drivers or certain other witnesses (for example, crossing guards, school bus attendants, or private motorists) to provide evidence sufficient for issuance of a citation or warning to registered vehicle owners, and providing for fines, points assessed against the driver's license, jail time, or community service hours.

3. Continue to promote the awareness and the need for targeted enforcement of the school bus stop law within the statewide law enforcement community.

4. Continue with the development and dissemination of public service announcements (PSAs) for television, radio, and newspaper markets to educate motorists about the school bus stop law and graphically remind them of the potential consequences of violating the law.

5. The DOE should take the lead by continuing to develop and disseminate other materials related to the school bus stop law. This may include information pertaining to traffic stopping for school buses included in automobile license tag renewal notices, rental car contract signoffs, billboards, etc.

6. The DOE should continue to identify best practices and make recommendations for school districts regarding the establishment of safe school bus routes and stops.

7. Research the implementation of public information and driver education programs on the school bus stop law to be taken during pre-license driver education classes and again prior to license reinstatement as well as driver license renewals. Initial driver training programs should include information about the school bus stop law as well.

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Preface

Prior to 1995, the excessive number of school bus stop-arm violations committed by motorists in Florida's 67 school districts prompted the Florida Department of Education (DOE) to work cooperatively with the Center for Urban Transportation Research (CUTR) to conduct a study to estimate the magnitude of this problem, describe its many characteristics, and to recommend practical countermeasures as well as define future research to aid in the reduction of this serious problem. The detailed results from this effort are contained in a final report completed in February 1996.

As a result of findings published as part of the February 1996 report, the DOE began intensive educational and public awareness efforts to decrease the number of motorists committing stop-arm violations. The DOE and individual school districts have been involved in various efforts to educate the motoring public about Florida's school bus stop law. These efforts have included the use of public service announcements (PSAs) and brochures and pamphlets, encouraging law enforcement to conduct targeted enforcement at problem stops, and initiating a 1-888 hotline for motorists and others including school districts to report motorists whom they witness committing stop-arm violations.

At the request of the DOE, CUTR conducted follow-up research to measure the magnitude of the current stop-arm violation problem and, to the extent possible, develop conclusions regarding the effectiveness of the educational and public awareness efforts of the DOE and school districts during the past five years (1996-2000) to reduce this problem. The results from this study are contained in this final report.

The following CUTR faculty worked on this project:

Principal Investigator: Michael R. Baltes, Senior Research Associate

CUTR Director: Gary L. Brosch

Acknowledgments

CUTR would like to thank each of the Florida school district student transportation directors, other school district personnel, school bus drivers, and others who helped to accomplish this project. CUTR also extends a special thank you to Ronnie McAllister, Charlie Hood, and other staff at the School Transportation Management Section (STMS) of the Department of Education whom assisted with this project.

I. Introduction

In 1995, the Florida Department of Education (DOE) and student transportation staff in Florida's 67 school districts expressed concerns regarding the safety of students waiting and being dropped off at school bus stops (what is referred to as the loading and unloading zones). Primary concern centered around the high frequency of school bus stop-arm violations being committed by motorists and the subsequent danger that this unlawful activity presents to students. Working in partnership with the DOE, the Center for Urban Transportation Research (CUTR) conducted a field study in May 1995 to measure the problem of stop-arm violations, describe its characteristics, recommend countermeasures, and define future research to aid in the reduction of this serious safety problem.

Since the original stop-arm violation study completed in February 1996, the DOE and individual school districts have been involved in various efforts to educate the motoring public about Florida's school bus stop law (*F.S. 316.172*) and the dangers that committing stop-arm violations presents to students. Many of these efforts were the result of recommendations contained in the February 1996 final report. Some of the methods used for education and awareness included the use of public service announcements (PSAs), brochures and pamphlets, targeted law enforcement, and a 1-888 hotline for motorists and others including school district staff such as school bus drivers to report motorists they witness committing stop-arm violations. With assistance from the National Highway Traffic Safety Administration (NHTSA), the DOE initiated a toll free WATS line (1-888-STOP-4-Kids) for citizens to report motorists who pass school buses that are stopped to pick up or discharge students. When a person calls the "Hotline" they will be asked to leave the tag number, vehicle state of origin, and the time, date and location where the illegal pass was witnessed. Once reported, the DOE requests motor vehicle registration information from the DHSMV then sends a letter to the registered vehicle owner informing them about the potentially tragic consequences of not stopping for a school bus that is picking up or discharging students. The letter will also advise them of Florida law that states when they must stop for school buses, including the penalties for violation. Persons may also call the "Hotline" to simply request information, which will be mailed to them.

At the request of the DOE, CUTR performed a follow-up study to the one completed in February 1996 to once again measure the extent of the current statewide stop-arm violation problem. In addition, the follow-up study was carried out in an attempt to determine the effect of the various strategies employed by the DOE and school districts to reduce this problem. This report details the findings from this follow-up study. Unlike the previous study, the aim of this study was to quantify the extent of the stop-arm violation problem in comparison to the data recorded

in May 1995 and not necessarily to develop a host of countermeasures, additional educational and awareness measures, and/or future research as was done as part of the first study.

In this and the prior study, the terms “pass-by” and “stop-arm violation” are used when referring to a motor vehicle that unlawfully passes a stopped school bus while displaying its red octagonal stop-arms and red flashing lights while loading or unloading students at a stop. In addition, the expression “zone” is used to collectively denote both the school bus loading and unloading areas immediately surrounding a school bus stop. Only in specific cases where it was necessary for descriptive reasons is the “zone” referred to as either loading or unloading.

II. Report Organization

The report begins with a section that describes the primary purpose and objectives of the study. This section is followed by a discussion of the methodologies used in the collection of stop-arm violation data and findings from the field study in which stop-arm violation data were gathered. The report concludes with a recounting and summarization of the major findings as well as generalized recommendations to assist in reducing this problem.

III. Purpose and Objective of Research Study

The importance of continuing to reduce and ultimately eliminate the fatal and non-fatal injuries that occur needlessly to students at school bus stops during the loading and unloading process is of primary importance. With the exception of the previous study, it has been difficult to accurately define the extent of the statewide stop-arm violation problem due to a lack of empirical evidence. For this reason, a follow-up study was undertaken to gather additional data about the magnitude of the stop-arm violations that are occurring statewide during a typical school day. This follow-up study required that two major tasks be completed.

The first task involved a field study to record the number of stop-arm violations that occur statewide during a typical school day. The second task involved comparing the number of stop-arm violations by school district between the first and second studies and to determine what effect, if any, the various education, awareness, and enforcement efforts employed by each school district and the DOE might have had on the incidence of stop-arm violations between the two studies.

The information that was collected assisted the research team in defining the current stop-arm violation problem as well as gaining a greater understanding of the usefulness of the various

strategies employed by the DOE and school districts during the past five years to combat the problem. The methodology and findings from each of these tasks as well as the conclusions drawn from each are detailed in a following section of this report.

IV. Field Study

A description of the methodology from the field study as well as the findings are contained in this section. In addition, the results from a survey of school district transportation directors are contained in this section as well. As was the case in the previous study, a survey was administered to school transportation directors. It requested them to comment about the attitude of their school bus drivers regarding the recording of stop-arm violations, the weather conditions during the field study in their school district, and other information pertaining to the recording of stop-arm violation data. The survey also requested directors to supply as much information as possible about the various education, awareness, enforcement, and other strategies that they have used during the past five years to reduce the number of stop-arm violations in their districts. This particular question was not asked as part of the survey administered to directors during the previous study completed in February 1996. Appendix A contains a copy of the form used by school bus drivers to record stop-arm violations and Appendix B includes a copy of the survey form completed by school transportation directors.

Methodology

In order to preserve methodological and temporal consistency between the two studies, school bus drivers were requested to collect stop-arm violations on Thursday, May 18, 2000. In the previous study, Thursday, May 18, 1995, was chosen to represent a typical school day in Florida. As was the case in the two studies, the majority of school districts participated in the field study on May 18. However, due to scheduling conflicts and other internal problems, it was necessary for a few school districts to collect data on the following Thursday, May 25. Compared to the February 1996 study in which 58 school districts returned data, a total of 55 of the 67 school districts returned data for this study. For various reasons, the following twelve school districts did not return data collection forms: Baker, Flagler, Hillsborough, Holmes, Leon, Madison, Polk, Taylor, Union, Wakulla, Walton, and Washington. Similar to the previous study, participation in the field study by a school district was voluntary and determined only if that school district returned its used data collection forms to the research team for analysis.

In the second field study conducted in May 2000, each of the 67 school districts were mailed data collection forms. They were requested to distribute them to school bus drivers so the

could record the number of stop-arm violations while driving regular morning, midday, and afternoon trips/routes. As was the case for the May 1995 field study, each school district was given approximately ten percent more forms than they currently have school bus drivers. This was done to ensure complete coverage of each route should one form not be sufficient for recording the number of stop-arm violations. This resulted in the distribution of nearly 15,000 data collection forms. By comparison, just over 14,200 were distributed as part of the previous study. The recording of stop-arm violations took place over an entire school day encompassing all morning, midday, and afternoon trips. The identical data collection procedure was utilized in the previous study.

As was the case in the May 1995 field study, school bus drivers were asked to be responsible for the recording of stop-arm violations. They were instructed to record the number of stop-arm violations while attending to the primary requirements of driving their regular trips/routes. Consequently, the recorded data may be subject to some reporting and recording inaccuracies. For example, a driver may have failed to report several vehicles that committed stop-arm violations or a driver may have inadvertently indicated an inaccurate response such as an incorrect number of children loading or unloading at a particular school bus stop at which the violation occurred. Each school bus driver was instructed that their main concern was for the safety of the children entrusted in their care and not the recording of stop-arm violations. If time did not permit, school bus drivers were instructed to make mental notes of the stop-arm violations and record them on the form following the completion of the route or when time permitted.

Once again, the stop-arm violation data collection form used by school bus drivers (see Appendix A) was designed in such a manner as to facilitate the ease of recording violations while at the same time permitting each driver to regard student safety foremost. With one minor exception in which the information about roadway and school bus types was modified or added, the form used in this study was identical to the one used in the May 1995 field study. Specifically, drivers were responsible for collecting the following information about each individual violation:

- time of occurrence (morning, midday, afternoon)
- number of students at the school bus stop
- whether the vehicle was traveling in the same or opposite direction as the school bus
- whether the vehicle was traveling on the left or right of the school bus
- type of vehicle
- type of roadway

? whether the violation occurred in an urban or rural area

? whether the violation occurred on a paved or unpaved roadway surface

In addition to the aforementioned information, school bus drivers were also asked to indicate the route they were traveling, school bus number, and the type of school bus (conventional, transit, mini) they were operating at the time of the field study.

Findings from the Field Study

The results from the field study conducted in May 2000 are contained in the following section. Numerous analyses were performed utilizing the recorded data. Frequency distributions and cross-tabulations were performed to isolate important relationships that may exist in the data. The data contained in Tables 1 through 9 represent an aggregation of the stop-arm violations that were recorded for the entire state during May 2000. For comparison, results from the May 1995 field study are also shown in each table. Information pertaining to each school district that returned forms from the May 2000 field study is contained in Appendix C.

Results

On Thursday, May 18, 2000, a total of 10,719 motorists committed stop-arm violations statewide or 129 more than were recorded in May 1995. A total of 10,590 stop-arm violations were recorded on May 18, 1995. The number of stop-arm violations recorded in May 2000 represents data from 55 of the 67 school districts in Florida or three less than participated in the May 1995 study. To get an idea of the magnitude of the problem statewide, one simply has to multiply the number of stop-arm violations recorded during the May 2000 field study (10,719) by the number of school days in a typical school year (180). This simple procedure predicts that nearly 1.92 million stop-arm violations will occur in a typical school year in Florida.

Analysis of the returned data shows that 88.2 percent of the school buses that were involved in the stop-arm violations during the May 2000 field study were conventional type buses or what is referred to as Type C school buses, as shown in Table 1. The remaining school buses involved in the stop-arm violations were transit (9.0 percent) or mini (2.8 percent) style school buses. As the names imply, transit type school buses are similar to large public transit coaches with large seating capacities and mini type school buses are similar to small personal vans. This information was not collected as part of the May 1995 field study.

TABLE 1: Type of School Bus Involved in Stop-Arm Violation

Type of School Bus	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Conventional	NA		6,856	88.2%
Transit			700	9.0%
Mini			219	2.8%

Analysis of the recorded stop-arm violations indicates that no explicit trend exists regarding the time of day in which stop-arm violations occur. The stop-arm violation data recorded in May 1995 showed a similar non-specific trend with regard to time of day. Analysis of the data collected in May 2000 showed that stop-arm violations were roughly distributed equally between the morning time period of 6:00 am to 10:00 am (45.3 percent) and the afternoon time period of 2:01 pm to 6:30 pm (51.4 percent). The midday time period of 10:01 am to 2:00 pm accounted for the remaining small percentage of recorded stop-arm violations with 3.3 percent, as Table 2 shows.

TABLE 2: Time of Day of Stop-Arm Violations

Time	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
6:00 am to 10:00 am	4,727	48.3%	4,827	45.3%
10:01 am to 2:00 pm	273	2.7%	351	3.3%
2:01 pm to 6:30 pm	4,796	49.0%	5,485	51.4%

Table 3 shows that just over 50 percent of all recorded stop-arm violations during May 2000 occurred on two-lane roadways. In addition, during the same time, 21.5 percent of all stop-arm violations occurred on four-lane roadways without a median. By comparison, four-lane roadways with a median accounted for 14.9 percent of all recorded stop-arm violations during May 2000. Interestingly, roadways with four or more lanes with a suicide (center two-way left-turn lane) accounted for 9.2 percent of all recorded stop-arm violations during May 2000. This is an important finding since only a small percent (percent unknown) of bus stops in Florida are located on this type of roadway. In addition, this roadway type represents perhaps the most confusing situation to motorists regarding when and when not to stop for a school bus that is loading or unloading students. The remaining roadway type inquired about on the form, four or more lanes with a median (roadway separated by some type of physical barrier, i.e., a grass median at least five-feet in width or a raised barrier), accounted for 3.8 percent of all stop-arm violations during May 2000.

TABLE 3: Type of Roadway

Type of Roadway	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
2 Lanes	5,836	55.8%	5,348	50.6%
4 Lanes, No Median	2,456	23.5%	2,275	21.5%
4 Lanes, Median	1,583	15.1%	1,575	14.9%
4 Lanes or More, Suicide Lane	NA	NA	976	9.2%
More than 4 Lanes, Median	590	5.6%	398	3.8%

The stop-arm violation data recorded in May 2000 show that the majority of violations occurred while the vehicle in violation was traveling in the opposite direction (coming toward) of the stopped school buses. This particular type of violation accounted for 63.2 percent (65.7 percent occurred in May 1995) of all stop-arm violations. The remaining roughly 37 percent of the stop-arm violations were committed by vehicles traveling in the same direction (from behind) as the stopped school buses. Table 4 shows the results related to the direction of the vehicle in violation.

TABLE 4: Vehicle Passed from the Same or Opposing Direction

Direction of Stop-Arm Violation	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Opposing	6,691	65.7%	6,502	63.2%
Same	3,487	34.3%	3,778	36.8%

One of the most surprising findings from the May 2000 field study was that 349 vehicles or about 3.3 percent of all recorded violations were committing on the right or door side of stopped school buses while unloading or loading students, as shown in Table 5. Further analysis of stop-arm violations in May 2000 indicate that approximately 58 percent of the right/door-side violations were committed in the afternoon while dropping students off and about 38 percent were committed in the morning while loading students. By comparison, the May 1995 field study indicated that 415 or nearly four percent of all recorded stop-arm violations occurred on the right or door side of the stopped school buses. A cross-tabulation of data from May 2000 indicates that approximately 71.3 percent (78 percent in May 1995) of the right-side stop-arm violations occurred on two-lane roadways. Again, due to the limitations in the recorded data, there is no method for determining if any of the right/door-side stop-arm violations occurred in a right-turn lane adjacent to the stopped position of the school buses.

TABLE 5: Vehicle Passed On the Left or Right of the School Bus

Side of School Bus	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Left	9,887	96.0%	10,199	96.7%
Right	415	4.0%	349	3.3%

The majority of vehicles recorded by school bus drivers committing stop-arm violations in May 2000 were passenger cars. Table 6 shows that this vehicle type accounted for 70.7 percent of the 10,719 recorded stop-arm violations (75.4 percent in May 1995). This finding is expected since the majority of registered vehicles in Florida are passenger cars. Light trucks accounted for 20.4 percent and heavy trucks accounted for 4.6 percent of all recorded stop-arm violations in May 2000.

TABLE 6: Type of Vehicle Committing Stop-Arm Violation

Type of Vehicle	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Car	7,900	75.4%	7,521	70.7%
Light Truck	2,149	20.5%	2,172	20.4%
Heavy Truck	401	3.8%	487	4.6%
Other	25	0.3%	463	4.4%

Analysis of the data indicates that 98.7 percent of the (99 percent in May 1995) of all recorded stop-arm violations in May 2000 occurred on paved roadways and the other approximately one percent occurred on unpaved roadways. Table 7 presents the results related to roadway surface from the May 1995 and May 2000 field studies.

TABLE 7: Roadway Surface

Roadway Surface	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Paved	10,326	99%	10,379	98.7%
Unpaved	108	1%	142	1.3%

Approximately 63 percent of the stop-arm violations that occurred in May 2000 happened at a school bus stop in which one to five students were either boarding or exiting, as shown in Table

8. The remaining 37 percent of the stop-arm violations recorded in May 2000 occurred at school bus stops at which six or more students were either boarding or exiting.

TABLE 8: Number of Students at School Bus Stop

Number of Students	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
1 to 5	7,128	67.9%	6,632	62.7%
6 to 10	1,705	16.3%	1,891	17.9%
11 or more	1,662	15.8%	2,054	19.4%

Analysis of the recorded stop-arm violation data indicated that nearly 82 percent (78.1 percent in 1995) of the stop-arm violations recorded in May 2000 occurred in a locale identified by school bus drivers as urban in nature. In addition, school bus drivers identified that 18 percent of the stop-arm violations recorded in May 2000 were in a rural location. Table 9 shows the results related to this particular data element.

TABLE 9: Location of Stop-Arm Violation

Location	May 1995		May 2000	
	Frequency	Percent	Frequency	Percent
Urban	7,650	78.1%	8,138	82.0%
Rural	2,140	21.9%	1,790	18.0%

Survey of Transportation Directors

According to school district transportation directors that responded to the survey, the attitude of school bus drivers toward the collection of stop-arm violation data was positive. This is important since it speaks to the overall quality of the recorded data. The more positive school bus drivers are about collecting the information the more likely they are to do it properly which, in turn, increases the confidence in the data and reduced reporting inaccuracies. However, several directors reported that their school bus drivers had a somewhat negative attitude regarding participation in the May 2000 field study. The same attitude of school bus drivers was reported by a few directors for the last survey conducted in 1995. Despite the somewhat negative attitude of school bus drivers reported by a few directors, school bus drivers still willingly participated in the May 2000 field study.

In addition to inquiring about the attitude of school bus drivers regarding participation in the May 2000 field study, directors were asked again to provide information about the weather conditions, student release times, and any unusual event(s) that occurred that might have caused recorded data to be less than accurate. The response of the directors regarding weather conditions was similar across participating school districts. The same was reported for the collection of data during the 1995 field study. With the exception of one school district that reported foggy conditions in the early morning, the directors reported that the weather was ideal for the recording of data. Other than the one report of intermittent morning fog, no school district experienced rain or other inclement weather that would have impaired motorist visibility during the May 2000 field study. In addition, several directors reported that it was an early release day or the last day of school for a few schools in their district. The research team concluded that the schools that were released early in these school districts did not have a measurable impact on the overall field study.

Directors were asked on the survey to report anything unusual that occurred during the May 2000 field study that may have impacted the reliability of the data. Based on the results from the survey, no school district reported any unusual event or activity during the May 2000 field study. Appendix B contains a copy of the survey form.

Summary of Findings from the Field Study

Analysis of stop-arm violations recorded during May 2000 indicates that this serious problem still exists in Florida and, is potentially getting worse since more stop-arm violations were recorded during May 2000 than in May 1995. On May 18, 2000, a total of 10,719 vehicles were recorded statewide committing stop-arm violations. By comparison, a total of 10,590 vehicles were recorded committing stop-arm violations in May 1995, or 129 fewer than in May 2000. As mentioned prior, 12 school districts did not participate in the May 2000 field study (nine did not participate in May 1995). These twelve non-participating school districts accounted for approximately 2,135 of the 14,108 school buses in operation during the May 2000 field study. Applying the statewide average of 0.76 stop-arm violations per school bus in operation (compared to 0.95 from May 1995) to the number of school bus operated by these 12 school districts, a possible 1,623 additional stop-arm violations might have been recorded by school bus drivers statewide had these particular school districts participated in the May 2000 field study, bringing the total to about 12,350 stop-arm violations statewide.

Table 10 shows a comparison of the school districts with the greatest change in the number of recorded stop-arm violations between May 2000 and May 1995. As the table shows, Lee District

Schools experienced the largest decrease in stop-arm violations with 670 fewer and Broward District Schools experienced the largest increase with 289 additional stop-arm violations.

Table 11 provides a detailed summary and comparison of the findings from the May 1995 and May 2000 field studies. The table shows the number of recorded stop-arm violations, school buses operated in daily service, stop-arm violations per school bus operated in daily service, and the countermeasures taken by school districts between the May 1995 and May 2000 field studies to reduce the problem of stop-arm violations in their respective districts. This table also includes a ranking, in descending order (highest to lowest), of the number of stop-arm violations per school bus operated in daily service in the school districts that participated in both the May 1995 and May 2000 field studies. Based on the rankings derived using data from the May 2000 field study, Monroe District Schools had the highest number of violations per school bus operated in service with 2.28. By comparison, Lee District Schools achieved the top ranking with 2.26 violations per school bus operated in daily service in May 1995.

TABLE 10: Comparison of Stop-Arm Violations Between May 2000 and May 1995 for Selected School Districts

School Districts with a Decrease in Stop-Arm Violations	Change from May 1995	School Districts with an Increase in Stop-Arm Violations	Change from May 1995
Lee	-670	Broward	289
Palm Beach	-638	Orange	249
Marion	-263	Pinellas	210
Pasco	-80	Bay	164
St. Johns	-38	Osceola	136

Given the information provided by school district transportation directors via the directors' survey form, a host of education and enforcement countermeasures have been tried by each to reduce the problem of stop-arm violations. These countermeasures have ranged from the use of PSAs, informational pamphlets and brochures, and a 1-888 hotline to report violators. Based on the results from the May 2000 field study, it appears that the countermeasures put into place by the DOE and individual school districts have had little, if any effect, on the amount of stop-arm violations being committed by motorists every school day. With regard to the specific measures put into place by the DOE to reduce the number of stop-arm violations statewide was the ineffectiveness of its PSA campaign. Despite overall increase in stop-arm violations statewide, 20 individual school districts experienced fewer stop-arm violations in May 2000 compared to May 1995.

TABLE 11: Summary of Statewide Stop-Arm Violations by Participating School District

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Alachua	189	233	1.23	8	187	223	1.19	7	Operation Bluebird including law enforcement officers riding certain buses to watch for motorists committing stop-arm violations. Safety committee created an Adopt-a-Stop to monitor 10 zones with 10 stops in each zone.	-10
Baker	39	11	0.28	35	39	No Data			None Listed	NA
Bay	No Data				139	164	1.18	8	None Listed	164
Bradford	46	11	0.24	41	38	16	0.42	29	None Listed	5
Brevard	381	362	0.95	14	365	390	1.07	13	A form used by school bus drivers turned into the Safety Coordinator and this person contacts law enforcement.	28

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Broward	725	851	1.17	9	1,056	1,140	1.08	12	Information distributed to all schools including posters, and phones numbers to call to report violators. Three times per years school officials meet with law enforcement to discuss issues and find solutions to the problem.	289
Calhoun	21	5	0.24	42	20	2	0.10	51	Signs, law enforcement, and what is received from DOE.	-3
Charlotte	120	51	0.43	32	114	57	0.50	24	AAA First Rider Program, enhanced law enforcement, defensive driving classes	6
Citrus	199	50	0.25	39	166	49	0.30	37	Work cooperatively with local law enforcement. Posters are placed in our drivers' area and our drivers use the DOE Hotline phone number.	-1

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Clay	143	57	0.4	33	185	147	0.79	17	SB drivers complete internal form that's sent to sheriff's office which in turn sends a letter to the violating motorist. Point enforcement by the sheriff's office.	90
Collier	164	168	1.02	11	209	233	1.11	9	SB drivers involved in "Citizen Courtesy Program"	65
Columbia	No Data				99	32	0.32	34	Radio PSAs, newspaper articles, CTST, safety days. Law enforcement officers follow buses and randomly observe high problem areas.	NA
Dade	1,098	1,697	1.55	5	1,402	1,749	1.25	6	None Listed	52
DeSoto	35	2	0.06	53	35	9	0.26	40	None Listed	7
Dixie	22	2	0.09	51	24	4	0.17	47	None Listed	2
Duval	No Data				933	869	0.93	15	Not Returned	NA
Escambia	342	335	0.98	12	369	402	1.09	11	Drivers trained to be aware of stop-arm violators, law enforcement responds to trouble stops, and drivers use the DOE Hotline to report violators.	67

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Flagler	42	20	0.48	29	55	No Data			None Listed	NA
Franklin	8	0	0	56	9	1	0.11	50	None Listed	1
Gadsden	No Data				70	13	0.19	44	None Listed	NA
Gilchrist	19	4	0.21	43	23	1	0.04	53	None Listed	-3
Glades	8	0	0	55	8	1	0.13	49	Broadcast the DOE Hotline phone number and used it when the number was available.	1
Gulf	25	2	0.08	52	22	1	0.05	52	Drivers, public announcements, articles, and active involvement with law enforcement.	-1
Hamilton	26	0	0	57	24	6	0.25	41	None Listed	6
Hardee	56	7	0.13	49	39	7	0.18	45	Law enforcement used to target hot spots.	0
Hendry	61	11	0.18	45	59	33	0.56	23	Report violations to Hendry County Sheriff's Office. Exhibit out County fair. Monitor at key stops with help of HCSO.	22
Hernando	169	34	0.2	44	160	54	0.34	32	Inform DOE of violators as well as cooperate with law enforcement to target specific trouble spots	20
Highlands	93	26	0.28	36	107	20	0.19	43	Distributed CTST and DOE brochures to County Tag Offices, DL, and schools.	-6

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Hillsborough	940	482	0.51	26	1,071	No Data			None Listed	NA
Holmes	No Data				42	No Data			None Listed	NA
Indian River	82	53	0.65	20	71	32	0.45	27	School bus drivers call into base with a description of the vehicle and tag number. Call DOE Hotline with info and also call local law enforcement.	-21
Jackson	83	22	0.27	37	83	12	0.14	48	News media and law enforcement	-10
Jefferson	34	4	0.12	50	31	20	0.65	20	Placed signs in different areas. Radio PSAs and law enforcement advised to provide targeted enforcement at trouble stops/locations	16
Lafayette	13	0	0	58	14	0	0	55	Articles in school and local newspapers and fliers around town.	NA
Lake	155	105	0.68	19	196	123	0.63	21	School bus drivers notify law enforcement of problem areas/stops. Law enforcement has been very good at sending officers out to trouble spots to enforce the law.	18
Lee	472	1,068	2.26	1	569	398	0.70	18	None Listed	-670

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Leon	223	131	0.59	22	178	No Data			None Listed	NA
Levy	No Data				74	22	0.30	36	Each school bus driver goes through training on stop-arm procedures and instruction to call the DOE Hotline	NA
Liberty	No Data				13	0	0	54	Newspaper release and education and law enforcement reports	NA
Madison	No Data				34	No Data			Law enforcement calls or visits violators. SB drivers get vehicle tag numbers.	NA
Manatee	150	263	1.75	2	160	285	1.78	3	Use DOE Hotline, cooperation with law enforcement to operate stings; citizen training through a variety of sources including newspapers, TV, radio; continual SB driver education; participation in school meetings.	22
Marion	267	361	1.35	6	328	98	0.30	35	Not Returned	-263

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Martin	74	51	0.69	18	71	26	0.37	31	Law enforcement notified of stop-arm violations. Observe areas where violations take place. Educate school bus drivers on stop-arm violations and use the DOE Hotline whenever possible.	-25
Monroe	No Data				57	130	2.28	1	Sent information to public utilities to use as part of their training program. Put up posters in all schools.	NA
Nassau	95	53	0.56	24	105	35	0.33	33	Violators are reported by school bus drivers via radio communication then district calls the DOE Hotline	-18
Okaloosa	192	98	0.51	27	189	90	0.48	26	Use of 2-way radios in school buses to notify police of violating motorist. If police in area, will pursue violator. Otherwise, vehicle tag number taken and violator gets call or visit from police.	-8
Okeechobee	64	28	0.44	30	61	15	0.25	42	Pamphlets sent to all schools	-13

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Orange	747	480	0.64	21	904	729	0.81	16	None Listed	249
Osceola	123	69	0.56	23	162	205	1.27	5	School bus drivers are asked to complete a form which includes a complete description of the vehicle, operator, and location. This information is given to law enforcement during the monthly "TEAM" meeting. Law enforcement uses the forms to perform selected enforcement.	136
Palm Beach	530	909	1.72	3	549	271	0.49	25	None Listed	-638
Pasco	255	263	1.03	10	270	183	0.68	19	Use law enforcement to target troublesome stops	-80
Pinellas	537	919	1.71	4	546	1,129	2.07	2	Work closely with law enforcement. Keep database of violations and send to law enforcement for use in targeting certain areas/stops.	210
Polk	416	65	0.16	47	460	No Data			None Listed	NA
Putnam	111	27	0.24	40	116	52	0.45	28	None Listed	25

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Santa Rosa	161	69	0.43	31	209	84	0.40	30	County patrolled by Laidlaw safety vehicles and drivers report all violators to police for follow up.	15
Sarasota	224	294	1.31	7	215	354	1.65	4	None Listed	60
Seminole	265	259	0.98	13	327	310	0.95	14	Law enforcement has been used to target trouble stops and the district attends all local safety fairs to promote school bus safety.	51
St. Johns	102	75	0.74	17	134	37	0.28	39	Use DOE Hotline and the Community Traffic Safety Team	-38
St. Lucie	236	194	0.82	16	281	159	0.57	22	In-service school bus drivers regularly. Law enforcement responds immediately. Posters have been placed in various locations, news articles have been distributed to law enforcement with prosecutions results in other states.	-35
Sumter	69	35	0.51	28	72	21	0.29	38	None Listed	-14
Suwannee	62	16	0.26	38	63	11	0.17	46	Newspaper articles regarding fines and posters	-5
Taylor	47	26	0.55	25	49	No Data			Not Returned	NA
Union	19	1	0.05	54	25	No Data			Not Returned	NA

District	May-95				May-00					Difference in Stop-Arm Violations Between May '95 and May '00
	School Buses Operated in Daily Service (Feb. 1994)	Number of Recorded Stop-Arm Violations (May 1995)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	School Buses Operated in Daily Service (Oct. 1999)	Number of Recorded Stop-Arm Violations (May 2000)	Stop-Arm Violations per School Bus Operated in Daily Service	Rank (Stop-Arm Violations per School Bus Operated in Daily Service)	Countermeasure (July 1996 to Present)	
Volusia	215	197	0.92	15	241	265	1.10	10	None Listed	68
Wakulla	48	8	0.17	46	60	No Data				NA
Walton	68	21	0.31	34	79				Not Returned	NA
Washington	40	5	0.13	48	43					NA
Totals	**11,150**	**10,590**	**0.95**	**--**	**14,108**	**10,719**	**0.76**	**--**	**--**	129

V. Summary and Conclusions

Based on the findings from the field study conducted in May 2000 in which a total of 10,719 stop-arm violations were recorded, the problem of motorists disregarding the law pertaining to stopping for school buses has gotten slightly worse. Compared to the 10,590 stop-arm violations recorded in May 1995, 129 more violations were recorded in May 2000. Among other reasons, this increase is partially explained by the growing problem of aggressive driving not only in Florida, but nationwide, as well as an increase in the number of registered vehicles and school buses on the road in Florida during May 2000 compared to May 1995. In addition, since the field study completed in May 1995, the STMS has added the wording "Stop When Red Lights Flash" to the back of school buses and strobe-type dual red flashing lights on the stop-arms (as opposed to incandescent) for new buses to its Florida School Bus Specifications.

As a result of the findings from the May 2000 field study, the following set of general recommendations are put forth in attempt to reduce the statewide problem of stop-arm violations. Once again, the following recommendations focus primarily on enforcement and education countermeasures at both the local and state levels.

Local Level

Once again, on the local level, every attempt should be made to encourage the formation of and participation in existing Community Traffic Safety Team (CTST) committees. Those persons involved with these committees should include school district transportation staff and other school board representatives, local law enforcement, city and county traffic engineers, local planners, and representatives from the American Automobile Association (AAA) and local Parent-Teacher Association (PTAs). These groups should work cooperatively to develop and implement practical and effective countermeasures to this problem at the local level. Enforcement and education should be the primary focus.

1. Continue school bus stop "enforcement blitzes." For example, an effort of this type could include one officer riding on a school bus identifying violators on a route that has been identified as having a high incidence of stop-arm violations and another officer in a marked vehicle to pull over the violators and issue citations. While law enforcement has been responsive to this problem, a paradigm shift is needed to combat this serious problem. The shift that law enforcement needs to embrace is to make school bus safety the business of every law enforcement officer. Law enforcement needs to take a decentralized approach that makes every officer responsible for school bus safety. It must become a community

priority. Substantial effort will need to be devoted to such enforcement efforts to maximize the probability of achieving measurable results.

Based on the results from the May 2000 field study, there is an urgent need to place specific emphasis on specific areas within school districts. Specific techniques to combat stop-arm violations can include unmarked cars, motorcycles, unmarked decoy vehicles, non-traditional vehicles, and automated enforcement. Use of unmarked, non-traditional vehicles for example will contribute to public awareness by increasing motorist uncertainty about which vehicles are used for enforcement. It will also generate free publicity about the enforcement program. Marked patrol cars create a deterrent effect when present, but this deterrence is lost when they leave the area. When motorists see a marked patrol car, they are usually on their best behavior and stay that way until it is out of sight.

Several enforcement zones should be selected within the school district that are known to have chronic stop-arm violators. Each enforcement zone should be several blocks to, perhaps, a half mile in length. These zones could be selected by using information from school bus drivers or other methods such as citations issued to identify road segments and intersections that have been sites of violations. Enforcement zones may also be selected within the community based on citizen or parental complaints. The use of crash statistics and citizen complaints to select enforcement areas will lend credibility to the effort and awareness among the public.

It is suggested that at least two enforcement details be conducted in the predesignated locations. It is also recommended that deployment strategies remain flexible, permitting officers to go to another enforcement area, if violations decline in an assigned location.

The objective of the deployment strategy should be to maximize the visibility of the law enforcement presence. Deployment of law enforcement officers to a general area to work individually at different times is one way to accomplish this. Another method is a team approach. Visibility can sometimes be accomplished most effectively by detailing several enforcement officers to work together in a designated area rather than assigning each officer to work individually at various locations. Working as a team allows flexibility, such as by permitting officers to use marked patrol vehicles, unmarked cars, motorcycles or other enforcement vehicles. Whichever approach is ultimately carried out, the objective should be to maximize law enforcement visibility to increase the perception of law enforcement presence within the special enforcement area.

2. Develop a stop-arm violation program to emphasize awareness and education of the public. Local partners including the Community Traffic Safety Team (CTST) (if it exists) and others should be involved in the develop of the stop-arm violation program. The media will be key to the overall success of any program. The power of the media should be used as an advantage whenever possible. School bus safety is a hot topic in the media and community. Use this advantage by keeping local media informed about what types of countermeasures are being implemented and their success rates. The media can be the best ally and most efficient means of communicating with the public. In addition, technology is now allowing nearly constant and instant communication. The Internet (e.mail and the World Wide Web) have proved that communication can be fast, cheap, and relatively labor-free. Using this technology, those persons concerned about stop-arm violations can quickly connect with each other and organize for change at the grassroots level.

3. To increase voluntary compliance with the school bus stop law (among other traffic laws), the public should be made aware of the stop-arm violation program, although this may be contrary to the enforcement philosophy. Publicize the enforcement effort to the maximum extent possible. It is a good idea to announce on morning radio programs where the enforcement activities will be conducted that day, as long as the schedule does not become so regular it becomes predictable. The objective of the program is to gain voluntary compliance of the school bus stop law, which will in turn reduce the potential for tragedy. Writing citations is not the main objective, but a means to increase public awareness, voluntary compliance, and improve the safety of students. This theme must be incorporated into the program to ensure public acceptance of the special enforcement effort. The public should also be educated about the school bus stop law in order to avoid non-compliance with the law.

4. Encourage law enforcement officers and others to participate in CTST and other community-based meetings and activities on a regular basis which support the stop-arm violations program (for example, providing ride-along opportunities for reporters; demonstrating laser or radar equipment for citizens, reporters, prosecutors, legislators and judges; participate as speakers at PTA meetings, provide TV and radio interviews, etc.).

5. Data collection will be an important aspect of the stop-arm violations program. A method should be established at the district level for gathering statistics on stop-arm violations. Gathering this information establishes a baseline for further efforts later on regarding the effectiveness of the stop-arm violation program.

State Level

As was stated in the previous research, at the state level, the Florida Commissioner of Education, the Legislature, and other relevant groups representing law enforcement, planning, and school districts should work cooperatively and diligently to develop and implement practical and effective countermeasures to reduce this serious problem. These groups should include the Safety Management Systems committee created in accordance with the Intermodal Surface Transportation Efficiency Act (ISTEA), Florida Department of Transportation (FDOT), Department of Highway Safety and Motor Vehicles (DHSMV), Department of Community Affairs (DCA), Florida Association of School Administrators (FASA), Florida Association of State Troopers (FAST), Florida Sheriffs Association (FSA), Florida Association of County Commissioners (FACC), Florida Trucking Association (FTA), League of Cities, Florida School Boards Association (FSBA), Florida Association of District School Superintendents (FADSS), American Automobile Association (AAA), and other relevant agencies or groups.

1. Conviction for a stop-arm violation should involve a significant number of points, monetary fine, and/or a minimum license suspension. Greatly enhanced penalties should accompany repeat violations or those involving serious injury or death. The goal should be to once again make revisions to Florida Statutes to provide much greater deterrent for convicted violators of the school bus stop law. Specific recommended revisions should include substantially increasing the fines for first and subsequent violations, points assessed against the driver's license of convicted violators, and adding jail time and/or community service hours for convicted violators as well, especially repeat violators.

2. Recommended statutory revisions should also include empowering school bus drivers or certain other witnesses (for example, crossing guards, school bus attendants, or private motorists) to provide evidence sufficient for issuance of a citation or warning to registered vehicle owners, and providing for fines, points assessed against the driver's license, jail time, or community service hours.

3. Continue to promote the awareness and the need for targeted enforcement of the school bus stop law within the statewide law enforcement community.

4. Continue with the development and dissemination of public service announcements (PSAs) for television, radio, and newspaper markets to educate motorists about the school bus stop law and graphically remind them of the potential consequences of violating the law.

5. The DOE should take the lead by continuing to develop and disseminate other materials related to the school bus stop law. This may include information pertaining to traffic stopping for school buses included in automobile license tag renewal notices, rental car contract signoffs, billboards, etc.

6. The DOE should continue to identify best practices and make recommendations for school districts regarding the establishment of safe school bus routes and stops.

7. Research the implementation of public information and driver education programs on the school bus stop law to be taken during pre-license driver education classes and again prior to license reinstatement as well as driver license renewals. Initial driver training programs should include information about the school bus stop law as well.

Appendix A

Field Study Data Recording Form

ILLEGAL PASSING DATA COLLECTION FORM

DEAR SCHOOL BUS DRIVER: The Florida Department of Education and the Center for Urban Transportation Research are conducting a research project to obtain information about the vehicles that illegally pass your stopped school bus while you are loading and discharging students today. Please observe the vehicles that illegally pass your stopped school bus today and put a check (?) or other mark in the appropriate blank on the form that best characterizes the illegal pass. Each row on the form represents one (1) vehicle that illegally passes your stopped school bus. **REMEMBER: Please take extreme caution when completing the form, YOUR MAIN RESPONSIBILITY IS TO THE SAFETY OF YOUR STUDENTS**. Time permitting, please complete as much information about the illegal pass as possible on the form. Last, please take a moment before you start your trip to complete the information located at the top right corner of this form. Thank you for your cooperation in this important matter.

District Name ____
Driver Name ____
Route # ____
School Bus # ____
School Bus Type: conventional - transit - mini
(Please circle one)

Please Check Only One	Please Check Only One	Please Check Only One	Please Check Only One	Please Check Only One	Please Check Only One	Please Check Only One	Please Check Only One
Time of Illegal Pass	# of Students at Bus Stop	Vehicle Passed from the:	Vehicle Passed on Which Side of the School Bus	Type of Vehicle that Illegally Passed	Type of Roadway (suicide lane = center 2-way left turn lane)	Location of Pass	Roadway Surface
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___
AM ___ MIDDAY ___ PM ___	1 to 5 ___ 6 to 10 ___ 11 or More ___	Front ___ Rear ___	Left (driver side) ___ Right (door side) ___	Car ___ Light Truck ___ Heavy Truck ___ Other ___	2 Lanes ___ 4 Lanes, No Median ___ 4 Lanes, Median ___ 4 Lanes, Suicide Lane ___ More than four lanes, Median ___ More than four lanes, Suicide Lane ___	Urban ___ Rural ___	Paved ___ Unpaved ___

Appendix B

School Transportation Director Survey

TRANSPORTATION DIRECTOR'S SURVEY FORM

1. What were the weather conditions during the morning, midday, and afternoon runs in your school district on the day that stop-arm violation data were collected?

_____

_____

2. Was it early release day in your school district?

No____1 Yes____2

3. Was there anything unusual about the day that stop-arm violation data were collected in your school district that may have impacted the reliability of the collected data?

No____1 Yes____2

IF YES, PLEASE EXPLAIN...

_____

_____

_____

4. What was the general reaction of your school bus drivers regarding the request to have them collect these data?

Positive____1 Neutral____2 Negative____3

5. Please estimate the current number of school bus stops in your school district. _____

6. Please indicate all of the activities including education, enforcement, etc. that your school district has undertaken to reduce the number of motorists who commit stop-arm violations since the Summer 1996. If necessary, please attach an additional sheet(s) of paper to complete your response.

_____

_____

_____

If you have any questions regarding this survey, please contact me at (813) 974-9843 or Ronnie McCallister or Charlie Hood at the STMS. For verification purpose only, please complete the information below. Your cooperation in this important matter is greatly appreciated.

_____ _____

Your Name Your School District

Please return the completed data collection forms and the Director's Survey to:

Michael R. Baltes
CUTR-USF
4202 E. Fowler Ave., CUT 100
Tampa, FL 33620-5375

Appendix C

Analysis by School District

TABLE 12: Percent of Violations by School Bus Type by School District (May 2000)

School District	Stop-Arm Violations	School Bus Type		
		Conventional	Transit	Mini
Alachua	223	45.2%	51.0%	3.8%
Bay	164	77.9%	22.1%	
Bradford	16	100.0%		
Brevard	390	96.8%	2.3%	0.9%
Broward	1140	86.6%	4.6%	8.7%
Charlotte	57	93.0%	7.0%	
Citrus	49	100.0%		
Clay	147	98.0%		2.0%
Collier	233	82.3%	13.7%	4.0%
Columbia	32	87.5%	12.5%	
Dade	1749	96.4%	1.8%	1.7%
DeSoto	9	100.0%		
Duval	869	80.1%	19.3%	0.7%
Escambia	402	92.9%	1.3%	5.8%
Franklin	1	100.0%		
Gadsden	13	50.0%	50.0%	
Gilchrist	1	100.0%		
Glades	1	100.0%		
Gulf	1	100.0%		
Hamilton	6	66.7%	33.3%	
Hardee	7	14.3%	85.7%	
Hendry	33	100.0%		
Hernando	54	100.0%		
Highlands	20	100.0%		
Indian River	32	94.7%		5.3%
Jackson	12	100.0%		
Jefferson	20	100.0%		
Lake	123	87.4%	12.6%	
Lee	398	94.1%	4.5%	1.4%
Levy	22	100.0%		
Manatee	285	75.0%	24.5%	0.5%
Marion	98	91.0%	9.0%	
Martin	26	100.0%		
Monroe	130	100.0%		
Nassau	35	81.8%	18.2%	
Okaloosa	90	100.0%		
Okeechobee	15	100.0%		
Orange	729	93.3%	5.6%	1.1%
Osceola	205	83.9%	12.9%	3.2%
Palm Beach	271	77.4%	20.6%	2.0%
Pasco	183	92.4%		7.6%
Pinellas	1129	92.1%	2.6%	5.2%
Putnam	52	96.2%		3.8%
Santa Rosa	84	77.8%	4.4%	17.8%
Sarasota	354	98.9%	0.7%	0.4%
Seminole	310	97.0%	1.0%	2.0%
St Lucie	159	93.0%	7.0%	
St. Johns	37	100.0%		
Sumter	21	100.0%		
Suwannee	11	100.0%		
Volusia	265	14.7%	84.0%	1.3%

TABLE 13: Percent of Violations by Time of Day by School District (May 2000)

School District	Stop-Arm Violations	Time of Day		
		AM	Midday	PM
Alachua	223	41.3%	6.4%	52.3%
Bay	164	47.0%		53.0%
Bradford	16	25.0%	25.0%	50.0%
Brevard	390	48.2%	3.1%	48.7%
Broward	1140	47.7%	5.5%	46.8%
Calhoun	2			100.0%
Charlotte	57	29.8%		70.2%
Citrus	49	33.3%	4.2%	62.5%
Clay	147	45.9%	1.4%	52.7%
Collier	233	46.7%	4.0%	49.3%
Columbia	32	48.4%		51.6%
Dade	1749	49.4%	1.4%	49.1%
DeSoto	9	33.3%	11.1%	55.6%
Dixie	4			100.0%
Duval	869	44.2%	3.9%	51.9%
Escambia	402	38.3%	.5%	61.2%
Franklin	1			100.0%
Gadsden	13	69.2%		30.8%
Gilchrist	1	100.0%		
Glades	1	100.0%		
Gulf	1			100.0%
Hamilton	6	33.3%		66.7%
Hardee	7	28.6%		71.4%
Hendry	33	39.4%		60.6%
Hernando	54	42.6%	13.0%	44.4%
Highlands	20	40.0%		60.0%
Indian River	32	46.9%		53.1%
Jackson	12	8.3%		91.7%
Jefferson	20	5.0%	5.0%	90.0%
Lake	123	43.0%	3.3%	53.7%
Lee	398	42.7%	6.5%	50.8%
Levy	22	45.5%		54.5%

School District	Stop-Arm Violations	Time of Day		
		AM	Midday	PM
Manatee	285	49.6%	6.4%	44.0%
Marion	98	39.8%	24.5%	35.7%
Martin	26	34.6%	7.7%	57.7%
Monroe	130	30.7%	1.6%	67.7%
Nassau	35	42.9%		57.1%
Okaloosa	90	42.7%	5.6%	51.7%
Okeechobee	15	53.3%		46.7%
Orange	729	52.0%	2.6%	45.4%
Osceola	205	49.0%	5.9%	45.0%
Palm Beach	271	47.6%	3.3%	49.1%
Pasco	183	40.4%	5.5%	54.1%
Pinellas	1129	47.9%	2.5%	49.6%
Putnam	52	46.2%	3.8%	50.0%
Santa Rosa	84	51.2%	2.4%	46.4%
Sarasota	354	23.2%	.3%	76.6%
Seminole	310	45.5%	1.0%	53.6%
St Lucie	159	35.4%	1.3%	63.3%
St. Johns	37	51.4%	5.4%	43.2%
Sumter	21	38.1%		61.9%
Suwannee	11	50.0%		50.0%
Volusia	265	43.8%	1.9%	54.3%

TABLE 14: Percent of Violations by Number of Students at Stop by School District (May 2000)

School District	Stop-Arm Violations	Number of Students at Stop		
		1 to 5	6 to 10	11 or more
Alachua	223	62.2%	19.8%	18.0%
Bay	164	70.6%	21.5%	8.0%
Bradford	16	37.5%	37.5%	25.0%
Brevard	390	59.6%	25.6%	14.8%
Broward	1140	58.2%	18.4%	23.3%
Calhoun	2	100.0%		
Charlotte	57	47.4%	42.1%	10.5%
Citrus	49	47.9%	2.1%	50.0%
Clay	147	55.6%	23.6%	20.8%
Collier	233	57.0%	18.8%	24.2%
Columbia	32	74.1%	14.8%	11.1%
Dade	1749	58.6%	16.5%	24.9%
DeSoto	9	88.9%		11.1%
Dixie	4		100.0%	
Duval	869	68.6%	16.7%	14.7%
Escambia	402	79.6%	10.1%	10.3%
Franklin	1	100.0%		
Gadsden	13	61.5%	7.7%	30.8%
Gilchrist	1	100.0%		
Glades	1	100.0%		
Gulf	1	100.0%		
Hamilton	6	50.0%		50.0%
Hardee	7	71.4%	14.3%	14.3%
Hendry	33	39.4%	30.3%	30.3%
Hernando	54	69.2%	23.1%	7.7%
Highlands	20	70.0%	25.0%	5.0%
Indian River	32	71.0%	12.9%	16.1%
Jackson	12	83.3%		16.7%
Jefferson	20	80.0%		20.0%
Lake	123	76.2%	13.9%	9.8%
Lee	398	68.8%	17.4%	13.9%
Levy	22	71.4%	19.0%	9.5%

School District	Stop-Arm Violations	Number of Students at Stop		
		1 to 5	6 to 10	11 or more
Manatee	285	64.7%	15.1%	20.2%
Marion	98	67.7%	12.5%	19.8%
Martin	26	61.5%	19.2%	19.2%
Monroe	130	63.8%	15.0%	21.3%
Nassau	35	77.1%	17.1%	5.7%
Okaloosa	90	69.7%	13.5%	16.9%
Okeechobee	15	57.1%	42.9%	
Orange	729	59.7%	16.6%	23.7%
Osceola	205	45.9%	24.9%	29.3%
Palm Beach	271	52.8%	20.4%	26.8%
Pasco	183	59.3%	24.2%	16.5%
Pinellas	1129	62.4%	21.4%	16.2%
Putnam	52	56.9%	9.8%	33.3%
Santa Rosa	84	67.5%	9.6%	22.9%
Sarasota	354	75.4%	12.4%	12.1%
Seminole	310	61.8%	16.8%	21.4%
St Lucie	159	77.7%	11.5%	10.8%
St. Johns	37	51.4%	8.1%	40.5%
Sumter	21	80.0%	20.0%	
Suwannee	11	54.5%	27.3%	18.2%
Volusia	265	61.9%	21.0%	17.1%

TABLE 15: Percent of Violations by Direction of Violation by School District (May 2000)

School District	Stop-Arm Violations	Vehicles Passed from the...	
		Front	Rear
Alachua	223	73.5%	26.5%
Bay	164	77.3%	22.7%
Bradford	16	31.3%	68.8%
Brevard	390	77.2%	22.8%
Broward	1140	47.4%	52.6%
Calhoun	2	100.0%	
Charlotte	57	75.4%	24.6%
Citrus	49	87.5%	12.5%
Clay	147	55.8%	44.2%
Collier	233	59.2%	40.8%
Columbia	32	51.6%	48.4%
Dade	1749	57.6%	42.4%
DeSoto	9	88.9%	11.1%
Dixie	4		100.0%
Duval	869	68.8%	31.2%
Escambia	402	74.4%	25.6%
Franklin	1	100.0%	
Gadsden	13	61.5%	38.5%
Gilchrist	1	100.0%	
Glades	1	100.0%	
Gulf	1	100.0%	
Hamilton	6	83.3%	16.7%
Hardee	7	42.9%	57.1%
Hendry	33	90.9%	9.1%
Hernando	54	61.1%	38.9%
Highlands	20	80.0%	20.0%
Indian River	32	71.9%	28.1%
Jackson	12	58.3%	41.7%
Jefferson	20	94.4%	5.6%
Lake	123	72.1%	27.9%
Lee	398	67.2%	32.8%
Levy	22	72.7%	27.3%

School District	Stop-Arm Violations	Vehicles Passed from the...	
		Front	Rear
Manatee	285	73.4%	26.6%
Marion	98	76.5%	23.5%
Martin	26	50.0%	50.0%
Monroe	130	66.7%	33.3%
Nassau	35	76.5%	23.5%
Okaloosa	90	65.5%	34.5%
Okeechobee	15	93.3%	6.7%
Orange	729	52.0%	48.0%
Osceola	205	80.8%	19.2%
Palm Beach	271	45.8%	54.2%
Pasco	183	59.1%	40.9%
Pinellas	1129	58.0%	42.0%
Putnam	52	66.0%	34.0%
Santa Rosa	84	57.1%	42.9%
Sarasota	354	75.3%	24.7%
Seminole	310	68.9%	31.1%
St Lucie	159	81.9%	18.1%
St. Johns	37	52.8%	47.2%
Sumter	21	85.7%	14.3%
Suwannee	11	72.7%	27.3%
Volusia	265	81.0%	19.0%

TABLE 16: Percent of Violations by Side of School Bus by School District (May 2000)

School District	Stop-Arm Violations	School Bus Side of Violation...	
		Left (driver)	Right (door/loading)
Alachua	223	98.1%	1.9%
Bay	164	96.9%	3.1%
Bradford	16	87.5%	12.5%
Brevard	390	96.6%	3.4%
Broward	1140	94.9%	5.1%
Calhoun	2	100.0%	
Charlotte	57	96.5%	3.5%
Citrus	49	87.5%	12.5%
Clay	147	98.6%	1.4%
Collier	233	97.4%	2.6%
Columbia	32	96.8%	3.2%
Dade	1749	95.7%	4.3%
DeSoto	9	100.0%	
Dixie	4	50.0%	50.0%
Duval	869	97.3%	2.7%
Escambia	402	97.7%	2.3%
Franklin	1	100.0%	
Gadsden	13	92.3%	7.7%
Gilchrist	1		100.0%
Glades	1	100.0%	
Gulf	1	100.0%	
Hamilton	6	100.0%	
Hardee	7	100.0%	
Hendry	33	90.9%	9.1%
Hernando	54	87.0%	13.0%
Highlands	20	90.0%	10.0%
Indian River	32	96.9%	3.1%
Jackson	12	100.0%	
Jefferson	20	100.0%	
Lake	123	96.7%	3.3%
Lee	398	97.5%	2.5%
Levy	22	100.0%	
Manatee	285	97.5%	2.5%
Marion	98	96.9%	3.1%
Martin	26	100.0%	
Monroe	130	96.8%	3.2%
Nassau	35	100.0%	
Okaloosa	90	96.6%	3.4%
Okeechobee	15	100.0%	
Orange	729	96.6%	3.4%
Osceola	205	97.0%	3.0%
Palm Beach	271	94.1%	5.9%
Pasco	183	97.8%	2.2%
Pinellas	1129	98.2%	1.8%
Putnam	52	98.1%	1.9%
Santa Rosa	84	91.3%	8.8%
Sarasota	354	99.4%	.6%
Seminole	310	98.7%	1.3%
St Lucie	159	95.5%	4.5%
St. Johns	37	86.5%	13.5%
Sumter	21	100.0%	
Suwannee	11	100.0%	
Volusia	265	99.2%	.8%

TABLE 17: Percent of Violations by Type of Vehicle by School District (May 2000)

School District	Stop-Arm Violations	Type of Vehicle			
		Car	Light Truck	Heavy Truck	Other
Alachua	223	75.1%	19.0%	3.6%	2.3%
Bay	164	66.5%	23.8%	6.1%	3.7%
Bradford	16	62.5%	25.0%	12.5%	
Brevard	390	70.2%	22.8%	3.4%	3.7%
Broward	1140	73.7%	18.8%	3.4%	4.1%
Calhoun	2	100.0%			
Charlotte	57	59.6%	31.6%		8.8%
Citrus	49	57.1%	26.5%	14.3%	2.0%
Clay	147	62.6%	27.9%	7.5%	2.0%
Collier	233	64.5%	22.1%	8.7%	4.8%
Columbia	32	48.4%	35.5%	12.9%	3.2%
Dade	1749	75.6%	15.7%	3.6%	5.1%
DeSoto	9	55.6%	22.2%	11.1%	11.1%
Dixie	4	50.0%	50.0%		
Duval	869	71.6%	21.8%	3.0%	3.6%
Escambia	402	66.2%	21.6%	7.3%	5.0%
Franklin	1		100.0%		
Gadsden	13	69.2%	15.4%	7.7%	7.7%
Gilchrist	1	100.0%			
Glades	1		100.0%		
Gulf	1				100.0%
Hamilton	6	16.7%	50.0%	33.3%	
Hardee	7	57.1%	28.6%		14.3%
Hendry	33	57.6%	24.2%	15.2%	3.0%
Hernando	54	81.5%	5.6%	3.7%	9.3%
Highlands	20	85.0%	15.0%		
Indian River	32	71.9%	21.9%	3.1%	3.1%
Jackson	12	66.7%	25.0%		8.3%
Jefferson	20	55.0%	40.0%	5.0%	
Lake	123	68.0%	23.8%	3.3%	4.9%
Lee	398	67.1%	19.6%	6.3%	7.0%
Levy	22	47.6%	33.3%	9.5%	9.5%

School District	Stop-Arm Violations	Type of Vehicle			
		Car	Light Truck	Heavy Truck	Other
Manatee	285	72.3%	20.7%	2.5%	4.6%
Marion	98	62.9%	27.8%	5.2%	4.1%
Martin	26	69.2%	15.4%		15.4%
Monroe	130	68.0%	18.8%	7.0%	6.3%
Nassau	35	54.3%	28.6%	2.9%	14.3%
Okaloosa	90	62.9%	27.0%	7.9%	2.2%
Okeechobee	15	50.0%	28.6%		21.4%
Orange	729	68.9%	21.3%	5.3%	4.5%
Osceola	205	70.2%	22.0%	4.4%	3.4%
Palm Beach	271	65.6%	27.8%	4.4%	2.2%
Pasco	183	67.2%	25.7%	3.8%	3.3%
Pinellas	1129	75.2%	16.5%	4.5%	3.7%
Putnam	52	69.2%	23.1%	7.7%	
Santa Rosa	84	57.1%	25.0%	7.1%	10.7%
Sarasota	354	68.6%	22.6%	6.5%	2.3%
Seminole	310	69.2%	22.7%	4.2%	3.9%
St Lucie	159	67.1%	22.2%	5.7%	5.1%
St. Johns	37	58.3%	19.4%	13.9%	8.3%
Sumter	21	61.9%	28.6%	4.8%	4.8%
Suwannee	11	45.5%	36.4%	9.1%	9.1%
Volusia	265	73.8%	20.5%	1.9%	3.8%

TABLE 18: Percent of Violations by Type of Roadway by School District (May 2000)

School District	Stop-Arm Violations	Type of Roadway				
		2 Lanes	4 Lanes, No Median	4 Lanes, Median	4 or More Lanes, Suicide Lane	More than Four Lanes, Median
Alachua	223	40.1%	25.2%	17.6%	13.5%	3.6%
Bay	164	41.4%	34.0%	15.4%	9.3%	
Bradford	16	62.5%		37.5%		
Brevard	390	39.4%	19.7%	8.8%	31.6%	.5%
Broward	1140	57.3%	13.3%	21.1%	2.6%	5.6%
Calhoun	2	100.0%				
Charlotte	57	43.9%	40.4%	5.3%	10.5%	
Citrus	49	40.8%	14.3%	18.4%	26.5%	
Clay	147	62.3%	10.3%	19.9%	2.1%	5.5%
Collier	233	68.2%	6.0%	23.2%	1.3%	1.3%
Columbia	32	45.2%	16.1%	38.7%		
Dade	1749	57.3%	24.4%	16.5%	.7%	1.1%
DeSoto	9	100.0%				
Dixie	4			100.0%		
Duval	869	45.7%	27.7%	11.9%	12.9%	1.7%
Escambia	402	53.0%	27.8%	5.4%	13.6%	.3%
Franklin	1	100.0%				
Gadsden	13	76.9%		23.1%		
Gilchrist	1		100.0%			
Glades	1		100.0%			
Gulf	1	100.0%				
Hamilton	6	100.0%				
Hardee	7	42.9%		57.1%		
Hendry	33	100.0%				
Hernando	54	88.9%	1.9%	9.3%		
Highlands	20	85.0%		5.0%		10.0%
Indian River	32	78.1%			15.6%	6.3%
Jackson	12	58.3%	25.0%	16.7%		
Jefferson	20	70.0%	25.0%	5.0%		
Lake	123	67.2%	11.5%	18.0%	3.3%	
Lee	398	35.9%	16.7%	16.2%	27.8%	3.5%
Levy	22	85.7%	4.8%	9.5%		
Manatee	285	46.1%	15.8%	7.7%	20.8%	9.5%
Marion	98	65.3%	23.5%	5.1%	6.1%	
Martin	26	53.8%		30.8%		15.4%
Monroe	130	65.6%	21.9%	10.9%	1.6%	
Nassau	35	74.3%	11.4%	14.3%		
Okaloosa	90	49.4%	19.1%	23.6%	7.9%	
Okeechobee	15	100.0%				
Orange	729	47.6%	19.6%	21.0%	5.1%	6.6%
Osceola	205	53.2%	17.6%	13.7%	15.6%	
Palm Beach	271	54.7%	18.5%	15.8%	4.5%	6.4%
Pasco	183	64.0%	7.9%	15.2%		12.9%
Pinellas	1129	30.6%	39.9%	13.6%	5.5%	10.4%
Putnam	52	82.4%	3.9%	9.8%	3.9%	
Santa Rosa	84	69.0%	8.3%	19.0%	3.6%	
Sarasota	354	14.4%	20.3%	7.6%	51.7%	5.9%
Seminole	310	71.8%	13.8%	11.8%	2.0%	.7%
St Lucie	159	54.2%	14.8%	12.3%	16.8%	1.9%
St. Johns	37	80.6%		19.4%		
Sumter	21	100.0%				
Suwannee	11	100.0%				
Volusia	265	52.7%	26.5%	11.4%	8.7%	.8%

TABLE 19: Percent of Violations by Location by School District (May 2000)

School District	Stop-Arm Violations	Location of Violation	
		Urban	Rural
Alachua	223	86.3%	13.7%
Bay	164	84.7%	15.3%
Bradford	16	50.0%	50.0%
Brevard	390	81.3%	18.7%
Broward	1140	84.6%	15.4%
Calhoun	2	100.0%	
Charlotte	57	82.5%	17.5%
Citrus	49	53.5%	46.5%
Clay	147	55.0%	45.0%
Collier	233	69.0%	31.0%
Columbia	32	29.4%	70.6%
Dade	1749	92.3%	7.7%
DeSoto	9	66.7%	33.3%
Dixie	4		100.0%
Duval	869	84.0%	16.0%
Escambia	402	80.7%	19.3%
Franklin	1	100.0%	
Gadsden	13	27.3%	72.7%
Gilchrist	1	100.0%	
Glades	1		100.0%
Gulf	1		100.0%
Hamilton	6	33.3%	66.7%
Hardee	7		100.0%
Hendry	33	35.5%	64.5%
Hernando	54	65.9%	34.1%
Highlands	20	50.0%	50.0%
Indian River	32	77.8%	22.2%
Jackson	12	58.3%	41.7%
Jefferson	20	30.0%	70.0%
Lake	123	72.5%	27.5%
Lee	398	86.0%	14.0%
Levy	22	45.5%	54.5%
Manatee	285	82.9%	17.1%
Marion	98	36.8%	63.2%
Martin	26	69.2%	30.8%
Monroe	130	4.8%	95.2%
Nassau	35	53.1%	46.9%
Okaloosa	90	84.9%	15.1%
Okeechobee	15	50.0%	50.0%
Orange	729	86.4%	13.6%
Osceola	205	75.1%	24.9%
Palm Beach	271	82.8%	17.2%
Pasco	183	72.9%	27.1%
Pinellas	1129	91.8%	8.2%
Putnam	52	34.1%	65.9%
Santa Rosa	84	48.7%	51.3%
Sarasota	354	93.2%	6.8%
Seminole	310	89.9%	10.1%
St Lucie	159	88.1%	11.9%
St. Johns	37	43.3%	56.7%
Sumter	21	19.0%	81.0%
Suwannee	11	27.3%	72.7%
Volusia	265	79.9%	20.1%

TABLE 20: Percent of Violations by Roadway Surface by School District (May 2000)

School District	Stop-Arm Violations	Location of Violation	
		Paved	Unpaved
Alachua	223	99.1%	.9%
Bay	164	97.6%	2.4%
Bradford	16	100.0%	
Brevard	390	99.5%	.5%
Broward	1140	98.4%	1.6%
Calhoun	2	100.0%	
Charlotte	57	100.0%	
Citrus	49	100.0%	
Clay	147	97.9%	2.1%
Collier	233	99.6%	.4%
Columbia	32	100.0%	
Dade	1749	97.6%	2.4%
DeSoto	9	100.0%	
Dixie	4	100.0%	
Duval	869	99.9%	.1%
Escambia	402	99.5%	.5%
Franklin	1	100.0%	
Gadsden	13	92.3%	7.7%
Glades	1	100.0%	
Gulf	1	100.0%	
Hamilton	6	83.3%	16.7%
Hardee	7	100.0%	
Hendry	33	100.0%	
Hernando	54	98.1%	1.9%
Highlands	20	100.0%	
Indian River	32	100.0%	
Jackson	12	100.0%	
Jefferson	20	100.0%	
Lake	123	100.0%	
Lee	398	100.0%	
Levy	22	90.9%	9.1%
Manatee	285	100.0%	
Marion	98	100.0%	
Martin	26	100.0%	
Monroe	130	100.0%	
Nassau	35	100.0%	
Okaloosa	90	100.0%	
Okeechobee	15	100.0%	
Orange	729	97.0%	3.0%
Osceola	205	99.0%	1.0%
Palm Beach	271	95.9%	4.1%
Pasco	183	98.4%	1.6%
Pinellas	1129	99.3%	.7%
Putnam	52	98.0%	2.0%
Santa Rosa	84	95.2%	4.8%
Sarasota	354	100.0%	
Seminole	310	97.7%	2.3%
St Lucie	159	98.1%	1.9%
St. Johns	37	100.0%	
Sumter	21	100.0%	
Suwannee	11	90.0%	10.0%
Volusia	265	99.6%	.4%