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This report summarizes, analyzes, and reports conclusions from the pilot project implementation of the SmartDrive driver monitoring product. The SmartDrive product is a video based unit that continuously records the driver's environment and when certain shock loads or speeds are exceeded, a 30 second video clip is marked and flagged for further review. Driver performance is then graded based on the sights and sounds within the video clip by SmartDrive company personnel. By closing the loop and providing feedback to the operators, improvements in safety can be made.

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EVENT DRIVEN VIDEO MONITORING FOR DRIVER TRAINING: EVALUATION OF PILOT PROJECT

Phillip W. Wong[0] &

Bahram Ravani[0], Principal Investigator

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Final Report of Contract IA 65A0262

October 30, 2008

Affiliations:
0. AHMCT Research Center, Department of Mechanical & Aeronautical Engineering, University of California, Davis, CA 95616

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ABSTRACT

This report summarizes, analyzes, and lists conclusions based on the pilot project implementation of the SmartDrive driver monitoring product in Caltrans, District 11 (San Diego). This driver monitoring product continuously records the operator and the forward environment of the vehicle. When forward or lateral shock loads are exceeded, or the vehicle speed exceeds 75 miles per hour, a 30 second video and audio clip (15 seconds before the trigger and 15 seconds after the trigger) is flagged for capture and later analysis. SmartDrive personnel review and grade the videos; the results are then associated with the individual operator and posted on a web site for reporting to Supervisors. The product was deployed from August 2007 to August 2008 across a District-wide fleet of approximately 50 vehicles.

The study was conduct in two phases. Immediately after installation, baseline data collection commenced. It was announced to the operators that data would be collected and reviewed, but that no feedback (unless an immediate and serious safety issue presented itself) would be given to the operators. After baseline data collection was completed, an informal feedback process was adopted. Data collection continued at this point, as well. One of the more striking conclusions is that driver feedback is extremely useful in modifying driver behavior; however, the effects are not permanent and must be refreshed periodically.

EXECUTIVE SUMMARY

The State of California incurs substantial costs in their vehicle fleet due to driver behavior-related issues. Preventable vehicle accident damage, unexpected equipment breakdown, unscheduled equipment repairs, worker injuries, third-party litigation, workers' compensation costs, and related, can sometimes be traced to less than optimal driver behavior.

The Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center at the University of California, Davis (UCD) evaluated an event-triggered video recording device to record the in-situ vehicle environment during a triggering-event. This vehicle video recording device was manufactured by SmartDrive Systems of San Diego, CA. The recorded data is used to augment driver training and to modify driver behavior, with the primary goal of reducing accident frequency and severity, and with a side benefit of minimizing untimely vehicle repairs. As part of this pilot project, the process and techniques of augmenting the driver training curriculum with the feedback data will be discussed.

Although hoped for in the original proposal, due to limitations in the device, AHMCT was unable to quantify the minimization of untimely vehicle repairs.

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DISCLAIMER/DISCLOSURE

The research reported herein was performed as part of the Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center, within the Department of Mechanical and Aeronautical Engineering at the University of California – Davis, and the Division of Research and Innovation at the California Department of Transportation. It is evolutionary and voluntary. It is a cooperative venture of local, State and Federal governments and universities.

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California, the Federal Highway Administration, or the University of California. This report does not constitute a standard, specification, or regulation.

LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AHMCT	Advanced Highway Maintenance and Construction Technology
Caltrans	California Department of Transportation
COTS	Commercial-Off-the-Shelf
DRI	Division of Research and Innovation
GB	Gigabyte
GIS	Geographic Information System
GPS	Global Positioning System
GPS-ATD	GPS-Automated Travel Diary
HMI	Human-Machine Interface
HSGPS	High-Sensitivity GPS
MB	Megabyte
MEMS	Micro-Electro-Mechanical Systems
OBD	On-Board Diagnostics
PDA	Personal Digital Assistant
RAM	Random Access Memory
SDRAM	Synchronous Dynamic Random Access Memory
TSI	Transportation System Information
UCD	University of California-Davis
USB	Universal Serial Bus

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SECTION 1:
INTRODUCTION AND BACKGROUND

This section provides a brief introduction to in-situ event monitoring of driver performance and operation of a vehicle.

Rationale

Many types of devices exist to monitor the health and conditions of the equipment itself. These types of self-diagnostic devices monitor performance of the machines by means of a feedback type signal. Generally, these feedback type signals include items such as exhaust gas composition (which would identify combustion problems) or performance deviation from nominal (an actuator reacting slower than normal). Sometimes, the monitor device can predict failure or wear of items and flag for scheduled preventative maintenance downtime before the machine completely fails with unscheduled downtime. The "Change Oil" reminder on the typical car is an example of the predictive monitor. Based on heuristics, algorithms, and usage patterns, the engine computer can predict when the engine oil needs to be changed before the oil ceases to be useful in protecting the engine.

In this pilot project, a device to monitor vehicle operator performance was installed in a fleet of vehicles at Caltrans, District 11 (San Diego). By monitoring and feeding back operators' performance, insight into the operation of the equipment can be gained and optimal equipment operations can be established. Additionally, should the situation warrant it, corrective actions in operator training can be taken before the situations become more serious.

The Device

The device installed for this Pilot Project is the SmartDrive unit from SmartDrive Systems (San Diego, CA). This unit (Figure 1) is mounted below the vehicle's rear view mirror and consists of two video cameras, a sensor package, a communications module, and an interconnect to the vehicle's engine computer. One of the cameras is aimed at the operator and the other is aimed out the front windshield for a frontal view. The system continuously records (buffers) video from both cameras and sound from the built-in microphone until a 30-second segment is flagged for saving into memory for later review by a trigger event. Fifteen seconds before the trigger event and fifteen seconds after the event are permanently saved. When the vehicle returns to the maintenance yard, the videos are uploaded to a central server for later review by SmartDrive personnel.

Figure 1: SmartDrive Unit

Trigger events are composed of three main types: shock load, over-speed, and panic event. All three trigger events cause the video unit to save the 15 seconds before and 15 seconds after the event. Shock load events are generally caused by excessive side-to-side or fore-to-aft acceleration loads (in terms of "g" loads). The side-to-side loads generally correspond to the vehicle jumping off curbs, hitting curbs, or running on rough or unimproved roadway shoulders. The threshold for this trigger event is ~0.38 g's. The fore-to-aft gravity loads generally correspond to excessive braking and acceleration or hard turning. The threshold for this trigger event is ~0.40 g's. Over-speed events are obtained from a diagnostic communications interconnect (On-Board Diagnostics, OBD-II) to the vehicle's engine computer. Over-speed limit for this study was set at 75 miles-per-hour (MPH). Finally, the panic event corresponds to the operator depressing the panic button on the unit itself. Table 1 summarizes the trigger events and thresholds. Once a trigger event occurs, a red light on the unit illuminates to indicate that something has been stored to the internal memory. When the vehicle returns to the maintenance yard, the data is downloaded via Wi-Fi wireless network to a SmartDrive server.

Table 1: Trigger Events and Thresholds

Trigger Event Type	Threshold	Causes
Shock load (side-to-side)	0.38	Driving on rough shoulders, hitting curb, driving off curb
Shock load (fore-to-aft)	0.40	Excessive acceleration, deceleration, hard braking, collision
Over-speed	75 mph	Excessive speed
Panic Button	N/A	Operator wants to flag an incident for further review; potential evidence of crime

Once the downloaded videos are received by SmartDrive Systems, the video clips are reviewed and graded by trained reviewers. The operators are identified by comparing

their pictures in the clips with their pictures on file. The report is then filed on the website under the operator's name. Supervisors can then review the reports and take appropriate action. Figure 2 illustrates the complete data collection cycle.

Figure 2: SmartDrive Cycle

Administrative Actions

Once the operators' graded reviews are uploaded to the SmartDrive web site, the reports are available for review by the supervisors and managers. Administrative changes are necessary to support the closed-loop enhancement and augmentation of the operator training curriculum.

SECTION 2:
REVIEW OF TECHNICAL LANDSCAPE AND AVAILABLE COMMERCIAL SYSTEMS

Recent technological developments and improvements in the Global Positioning System (GPS), low-cost small Micro-Electro-Mechanical Systems (MEMS) inertial sensors, low-power embedded computers, high-capacity storage devices, wireless communications, and high-speed Internet have converged to make a portable and low-cost data collection system a feasible reality.

Fleet Management Units

Low-cost data collections devices when fused with GPS location sensing and wireless connectivity and deployed into vehicles typically fall under the category of "fleet management" units. Companies such as Federal Express (FedEx) or United Parcel Service (UPS) install these units to allow tracking of their delivery vehicles in real-time. An example of a fleet management unit is the Preco *PreCise IX-802* unit (Figure 3). This unit is currently being deployed on a fleet of vehicles to support another AHMCT project, the Idling Baseline study. The unit combines GPS location sensing, engine condition monitoring, and GSM cell phone data connectivity to allow for near real-time location tracking of the vehicle. Depending on the management configuration, the unit can report the entire route, along with trigger events, at the end of the day or at scheduled times during the day. The data is collected and presented on the Preco website. Conditions such as exceeding a geo-fence or over-speed can be reported via alerts in email or SMS. A major limitation of this type of fleet management unit is the inability to record, via video and audio, the operating environment of the vehicle. Additionally, this device does not monitor or record the g-loads applied to the vehicle.

Figure 3: Preco PreCise (courtesy Preco)

Driver Training and Monitoring

Many times, it is only desired to monitor driver behavior and improve upon the operation of the vehicle. An especially important audience are parents with a newly-licensed teenage driver. These newly-licensed drivers are inexperienced in the sensation

of the dynamics of vehicular operation and tend to drive in an erratic fashion. Another company, DriveCam (San Diego, CA), manufactures a product, *DriveCam*, which mounts behind the rear view mirror of a vehicle and combines vehicle force monitoring and video/audio recording (Figure 4). The forces monitored include loads applied from swerving, cornering, hard braking, hard acceleration, collision or the like. Once triggered, the video and audio before the event and after the event are saved. The data is eventually transferred to DriveCam for review by their analysts. The results are reviewed by the parents in an effort to identify bad driving behavior and reinforce good ones. One insurance company (American Family Insurance), in exchange for reduced insurance rates for teenage drivers, has an agreement with parents to deploy the device into their vehicles.

Figure 4: DriveCam (courtesy DriveCam)

Passive GPS Trackers

Passive GPS tracking and recording devices are available from a variety of manufacturers. These devices only record the location versus time. These devices make no attempt to identify trigger events, much less send an alert. An interesting variation of this type of device, the ZoomBak (Figure 5), melds a GSM data unit and a GPS device to create a location device and geo-fence alert device. The main target for this device is to recover lost dogs and to track children.

Figure 5: ZoomBak (courtesy ZoomBak)

SECTION 3:
FEASIBILITY STUDY RESULTS

As part of the startup of the pilot project, a preliminary feasibility study was conducted. The concentration of this pilot study was to find a methodology to improve operator interaction with the vehicle. Ideally, a device would be found that could monitor driver and vehicle performance, and provide evidence of the vehicle's operational environment. By combining all these types of data, improvements to the operator training can be made, leading to more optimal operation of the equipment.

This phase commenced with a preliminary market survey of competing devices. Primarily, the devices were compared on the types of data they were able to provide for this study. Secondarily, the devices were compared on installation requirements, infrastructure requirements, and vendor support. Once a device was selected, the operational lifecycle was defined and its deployment impact on Caltrans operations clarified.

The Devices

As touched on above, the market survey of devices led to three broad categories of devices: vehicle fleet management, driver monitoring, and passive trackers. Each of these categories of devices had their pluses and minuses. No one device had all the capability desired for this study.

Preco PreCise fleet management units concentrated heavily on monitoring vehicle conditions, location, and operations. These units connect to the engine computer to record vehicle operational parameters, such as fuel consumption, engine temperatures, brake conditions, and the like. An external GPS antenna provides location information of the vehicle. Finally, a maximum of 6 digital I/Os can be used to provide a record of the state change of accessories on the vehicles. Accessories include such items as the activation of power-take-off (PTO) hydraulic pumps and generators, or the lowering of sweeper brooms and the like. Other than the recording of vehicle location, no record of the environmental operation condition of vehicle or the operator is provided.

SmartDrive and DriveCam units both attempt to provide the same information. By monitoring the shock loads imposed on the unit by the vehicle's motion, trigger events can be obtained. Once obtained, a video clip of the operating environment is recorded. In both cases, a forward view clip of the front of the vehicle and a rear view clip of the operator is recorded. When the vehicle returns to the home base, this information is uploaded to the company, where specially trained reviewers view the video and critique the driver's performance. A report is generated and placed on the respective company's web site for later review by the responsible parties. An important difference between the two units was that the SmartDrive unit had a communications link (via OBD-II) to the vehicle's engine computer. This link was used to monitor vehicle speed directly from the vehicle. This link was eventually envisioned to record additional engine parameters (e.g., fuel consumption, etc) with a future firmware upgrade. This distinction allowed the SmartDrive unit to trigger on over-speed conditions. One limitation shared by both was that neither unit had GPS capability, so that vehicle tracking was not possible.

Passive trackers only provided a log of vehicle locations. Speeding conditions can be derived from the location data, but operating conditions of the vehicle and driver performance cannot be obtained.

Since the concentration of this study was to monitor operator performance and try to improve the driver training curriculum, devices that had the ability to monitor the environment were selected. The two devices that provided this ability were the SmartDrive and the DriveCam units. Each company also provided similar company infrastructure and support for the post-processing of data received from the field units.

Finally, since the SmartDrive unit had the ability to monitor speed, it was selected for use in this pilot study.

Operational Scenario

Each vehicle selected for inclusion into this pilot study incurred approximately 2-5 hours of downtime for installation of the equipment. The main unit is installed in front of the rear view mirror to the interior roof of the vehicle. Cables are then run from the unit to attach to the OBD-II data connector and the vehicle power supply. Ignition key-switched and continuous power are required by the unit.

At the maintenance yard, Wi-Fi antennas were installed. These antennas form a network for downloading the event information from the vehicle field units to the central on-site data server. The central data server eventually uploads the video information via a dedicated DSL line to the SmartDrive central office. Finally, the SmartDrive reviewers retrieve the video, critique it, create a report, and place it on the company web site. Figure 6 shows this process.

Figure 6: Operational Scenario (courtesy SmartDrive)

Figure 7 illustrates the complete acquisition, review, and coaching session cycle as recommended by SmartDrive Systems. In order to close the feedback loop, management must coach the operators in reducing the undesirable behaviors and reinforcing best practices. By following this cycle, real risk reductions and improvements in operations can result.

Figure 7: Review Cycle

Operational Impact

Other than the short time necessary for installation, equipment operational impact was non-existent. Administrative impact, however, was a different matter, since no procedures were in place to support closing the loop on the feedback cycle for implementation of these types of devices. Unanswered at the outset were questions such as manager review procedures of the SmartDrive reports and feedback procedures from the managers to the operators. Finally, more serious issues such as implementation of disciplinary action procedures for serious or repeated operational violations were flagged for study later in this pilot project.

SECTION 4:
CALTRANS PILOT EFFORT

The pilot effort began with a kick-off meeting on June 27, 2007 at the headquarters of SmartDrive Systems.[1] In attendance was Michael Dehn (SmartDrive), Walter Gaines (SmartDrive), Larry Baumeister (Caltrans), Victor Reveles (UCD AHMCT), and Phillip W. Wong (UCD AHMCT). The discussion that occurred began with a general introduction of the system, along with a cursory look at the systems components and their connections. The major components touched on were:

- Camera unit with integrated Wi-Fi system
- OBD (On-Board-Diagnostics) unit
- Wiring harnesses
- Key pad (optional)
- Infrastructure requirements
    - Wi-Fi antennas and access points located around parking yard
    - Server to collect data
    - Internet uplink to SmartDrive Systems

A detailed discussion then followed about the utilization scenarios for the Caltrans pilot effort. Items discussed included how the units collected the data, the event triggers, and how to upload the data to SmartDrive for later analysis. Major points from this discussion include:

- Vehicle units feature continuous recording (buffering) of video and audio and when "event" triggered create a snapshot of 15 seconds before and 15 seconds after.
- Vehicle must return to yard to upload captured event records
    - Unit contacts yard access point, local server downloads event records, which are eventually uploaded to SmartDrive central for analysis.
- "Event" trigger can be any of the following:
    - G-Force: Lower limit is "erratic" driving, upper limit is "shock" or "crash"
    - Speed: Speed limit is maximum limit set for the vehicle, regardless of location or road condition
    - Panic button: User triggered event by pressing the red button on the keypad or camera unit.

Finally, a discussion ensued regarding the data analysis procedure employed by SmartDrive for the review of the event data for the vehicular units. Summary points from this period of discussion include:

- "Reviewers" grade the captured events and assign points based on what the video contains. Infractions include eating, cell phone usage, yawning, loud

[1] 10655 Roselle Street, Ste. 100, San Diego, CA. 92121, phone 858.225.5566

music, etc. Totalization of the points leads to classification of severity from 0 through 4, 4 being the most severe event.

- An analysis report is available on the vendor web site for the customer. This report allows feedback loop closure for the driver training curriculum via the managers or supervisors.

The next day, an introductory orientation meeting was held at the District 11 yard to bring the yard managers onto the same page and initiate the Pilot program. The meeting opened with a restatement of the Management objective of this project:

"Caltrans' objective for this pilot project is to have a measurable reduction in accidents"

SmartDrive also presented their introductory material for the Yard managers and a pilot kick-off scheduled for mid-July 2007.

During the discussions between all the parties at the conclusion of the orientation meeting, an important point concerning the Caltrans operating environment was brought forth. Since the Caltrans usage pattern of off-road and shoulder driving may create more events than necessary due to excessive shock loads, the G-load event threshold must be refined by SmartDrive to reduce unnecessary false alarms.

The Caltrans pilot data collection effort began in late September 2007 with a pilot fleet of approximately 50 vehicles located at the Kearney Mesa Maintenance Yard, San Diego, CA (District 11). As specified in the original proposal, this was the beginning of the year-long data collection period. Attempts would be made at quarterly intervals to visit the Maintenance Yard for interviews and discussions with personnel, managers, and the vendor for updates and comments regarding the use of the SmartDrive system in Caltrans vehicles. It was decided to split this pilot period into two portions. The first portion would be used to record "baseline" data. During this "baseline" period, data would be recorded and reviewed, but no feedback would be given to the individual operators from the manager regarding the analysis of the data from the vehicle units. At the expiration of this first period, manager feedback to the operators would be given in an attempt to modify the driver's vehicle operating behavior. A comparison of the data from the two halves would then be used as a gauge for the effectiveness of feedback in the modification of driver behavior.

As the pilot progressed, on-going discussions concerning the exact form of the administrative procedural actions for the managers' feedback to the operators continued. Union issues and excessive or retaliatory actions against operators were a constant concern. Issues of privacy were also brought to the forefront. Issues dealing with administrative actions resulting from equipment tampering also needed to be dealt with. During some routine discussions with Caltrans Headquarters managers, a suggestion was put forth that the minimum adverse action for intentionally tampering with a SmartDrive device should be much more stringent than normal discipline processes. One suggestion was a one pay-step reduction for six months, with a performance re-evaluation at the end

of the six month period. The suggested disciplinary actions could escalate all the way to employment termination for repeated violations.

SmartDrive Systems also provided suggestions on providing feedback to the operators (see Appendix A: Generic SmartDrive Policy). In summary, the company suggested that the managers, for first offenses, assign drivers a remedial training class and 30-days probation. For second offenses, the employee would receive a more strident training class and 60-days probation. Finally, for the third offense, employee suspension and perhaps termination were suggested.

Implementing Policy

On April 25, 2008, another meeting was held in District 11, San Diego, to begin the process of implementing the feedback policy. The issues to implementing policy were discussed in the presence of District 11 team managers, SmartDrive company personnel, Caltrans Headquarters staff, and AHMCT researchers. The conclusions reached during the roundtable discussions were:

- For corrective coaching, there would be documented interviews between the managers and the operators.
- There would be progressive discipline starting with coaching, progressing to adverse action, and finally suspension of pay.
- Letters of warning would be filed in the operator's personnel file for repeated offenses.
- For fairness, everyone's (including management personnel) vehicles would have the same equipment installed.
- Adverse action would be handled via existing customer complaint processes currently in place. These customer complaint processes deal with resolution actions for complaints and issues called in by the public against Caltrans operators and vehicles.
- Finally, it would be necessary to discuss policy harmonization with the Union.

In reality, based on anecdotal conversations with District 11 managers, in order to not be perceived as "singling out" any particular operator, the managers, during their team "safety briefing", would mention that during his review of the team's SmartDrive data, specific issues were noted and that performance must be addressed. i.e., the individual would not be identified in the briefing.

SECTION 5:
STUDY ANALYSIS AND RESULTS

Introduction

The data collection phase of this pilot project ran from approximately August 2007 to October 2008. The baseline phase (no feedback phase) ran from approximately August 2007 to May 2008. The feedback phase commenced on May 2008 and ran to project conclusion in October. It should be stressed that although the data was collected by automated instrumentation, the early data should be considered somewhat inaccurate due to the need for fine-tuning of the sensors. Suspected inaccuracies include:

- Excessive speeding triggers due to some vehicle speed limits set at 65 MPH, rather than the desired 75 MPH;

- Excessive shock triggers due to the harsh suspensions of some vehicles (i.e., flatbed trucks) or usage patterns of other vehicles (e.g., sweepers driving on unimproved road shoulders). The g-limits were modified for these vehicles.

- Visibility issues (excessive glare or reflections) with the lens being mistaken for tampering;

- Employee identification issues. Operators can only be identified by face image in the video, and incomplete names and photo files were present at the beginning. It is unknown whether the early incidents were completely and correctly correlated with the operators.

Nevertheless, although specific values of conclusions cannot be drawn, the relative trending of the data will prove to be instructive.

Operator's Review and Comments

As part of the pilot project, an Operator's Review and Comment form (Appendix B: Operator's Review and Comment) was sent to the operators of SmartDrive equipped vehicles. Appendix C contains the completed review forms from the operators. The review form covers roughly four areas: Training, Usage, User Interface, and Effectiveness. The questions on the form are briefly summarized below. Refer to the Appendix for the full text of the questions.

- [Question 1] Hours of operator training.
- [Question 2] Was the SmartDrive theory of operation clearly explained?
- [Question 3] Was the project purpose clearly explained?
- [Question 6] Did SmartDrive change the way you operated the vehicle?
- [Question 7] Was there a possibility of false positives?
- [Question 8] Does the unit create visibility problems while driving?
- [Question 9] Is the user feedback sufficient?
- [Question 10] Would you personally buy this product for your own use?

The survey results from the questions are shown in the Chart below. There are a number of "N/A" (no answer) responses, which might indicate a misunderstanding of the survey question. The "no" answers to questions 2 & 3 indicate a lack of communication between management and the operators. In Question 6, the majority of operators report that having a SmartDrive unit installed in their vehicle is ***not*** a factor in modifying their operation of the vehicles. Some have commented that they are more careful in speaking bluntly since the unit records audio during an incident. Operators were split about the issue of false positives (Question 7). There were repeated comments about the sensitivity of the units to off-road operations, roadway shoulders, Botts dots and stiff truck suspensions. In Question 8, the operators were comfortable with the mounting and size of the unit. One operator commented that the unit created a visibility problem when looking up for overhead or street signs. Once again, on the question of user feedback (Question 9), the operators were split. This survey question had the highest non-answer, perhaps suggesting a misunderstanding of the question. Many had commented that there was no feedback from management to them regarding the data or operation of the device. Finally, when asked whether operators would personally buy the device for their own usage (Question 10), there was a resounding "no." Many felt that there was an "invasion of privacy" to having the units active in their vehicles.

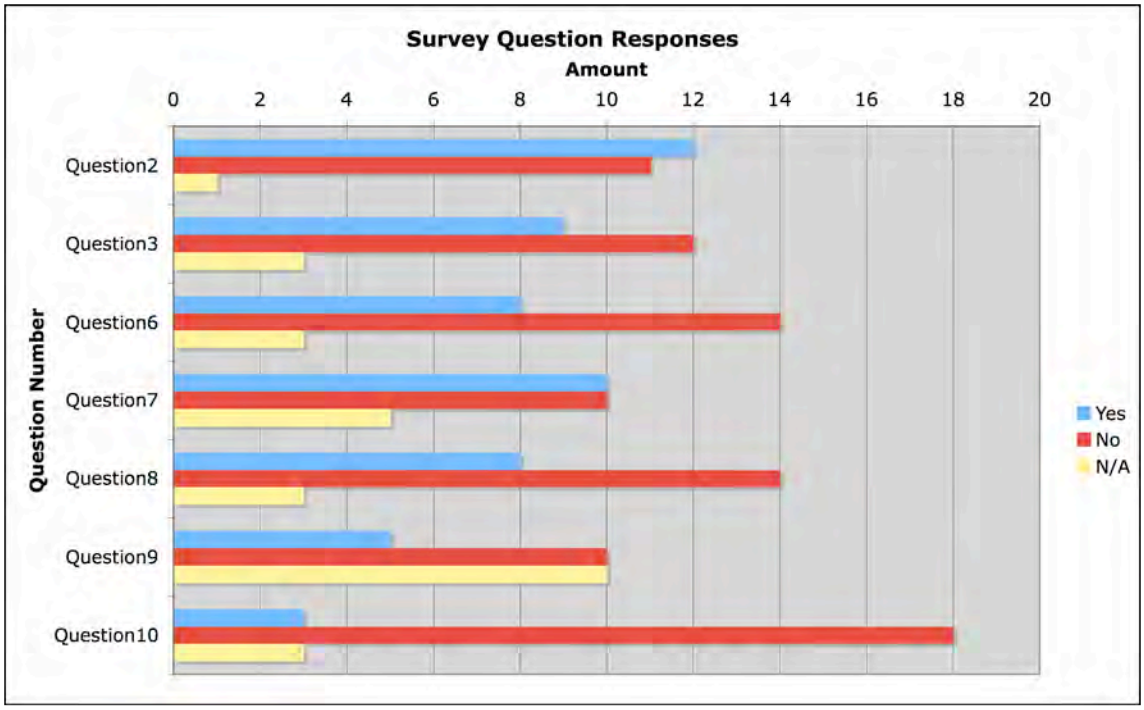


Figure 8: Survey Question Results

As a reinforcement to the answers from survey Questions 2 & 3 and the lack of communications from management to the operators, the chart below reveals that most operator had no training or communications regarding project or its objectives.

Figure 9: Operator Training Hours

Manager's Review and Comments

Additionally as part of this pilot project, a Manager's Review and Comment form (Appendix D: Manager's Review and Comment) was sent to the manager or team lead of the operators of SmartDrive equipped vehicles. Appendix E contains the completed review forms from the managers. The amount of forms returned was disappointing (only one out of approximately 4 managers). Nevertheless, this manager felt comfortable with the SmartDrive unit in that it reduced incidents without increasing administrative overhead. This review contained an overall positive attitude to the unit and its concepts.

Review of SmartDrive Data

Raw SmartDrive data was captured from the SmartDrive company web site and entered into an Excel spreadsheet workbook for analysis. The spreadsheet data is presented in Appendix F.

Fleet-wide Overview

The overall trends of the Category 1 through 4 incidents are shown in Figure 10, with Category 4 being the most severe and Category 1 being the least severe.

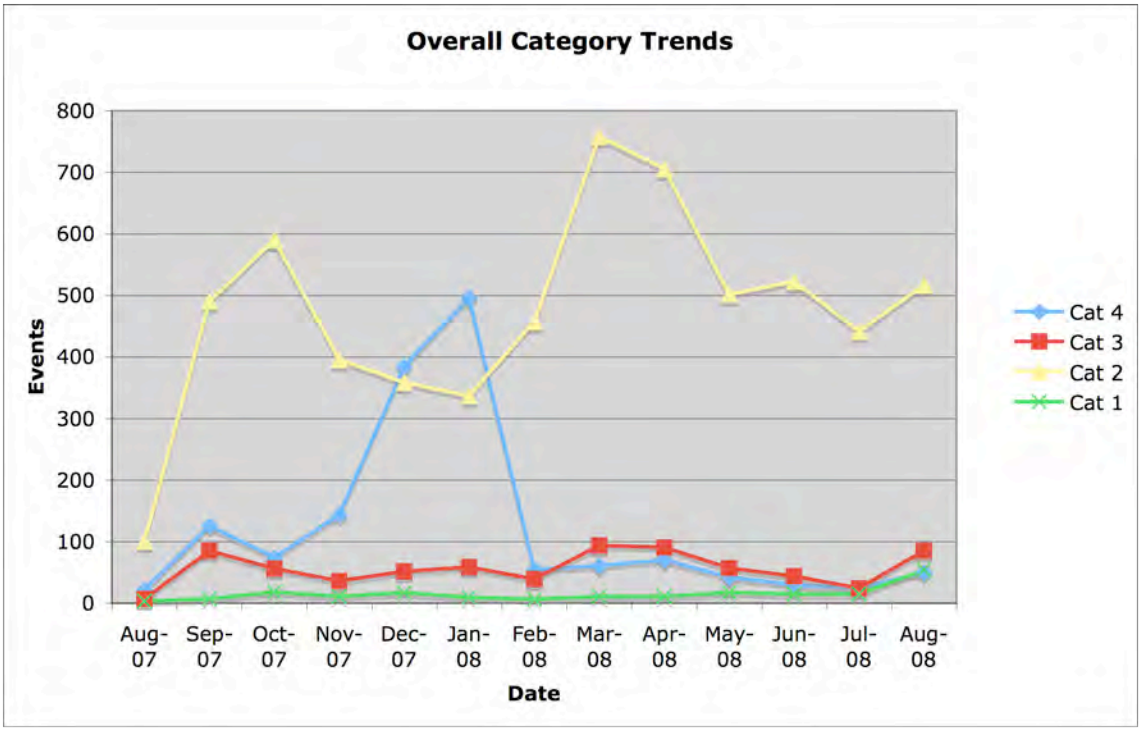


Figure 10: Category Trends

Interesting to note is the large drop off of the Category 4 events around January 2008. There is no known correlation with any of the recorded driving events. Figure 11 graphs the Category 4 events along with two of the suspected most severe infractions. Due the proprietary nature of the SmartDrive algorithms, it is not known what the Category 1 through 4 infraction levels are composed of.

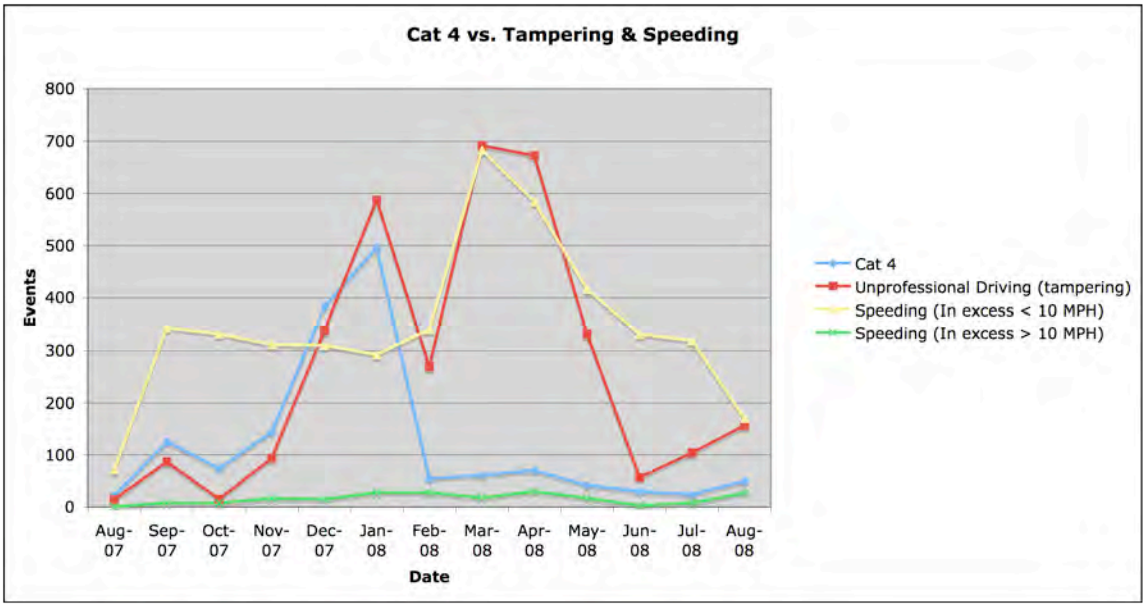


Figure 11: Cat 4 vs. Tampering & Speeding

The most common driver errors are graphed in Figure 12. Interesting to note are the erratic trends from month to month. This is possibly due to different drivers entering and exiting the fleet due to changes in assignments. This contention is supported by a close look at the individual driver performance statistics. Drivers have statistics for some months, but not for other months, indicating that they might not have been operating any vehicle during certain periods of time.

Figure 12: Driver Error Trends

Individual Driver Performance

Although fleet-wide statistics provide a macro-view of how the entire entity is performing, modifying the behavior of the outlying or most "unsafe" operator tends to give the most benefit for the management effort. This is the main goal of this study: ***Modify driver behavior to reduce risky vehicle operations***. To this end, after the "baseline" data collection period of six months expired, driver coaching was implemented around May 2008. General team coaching during the routine safety meetings was implemented as the preferred method of passing manager's feedback to the operators. Figure 13 is a graph of the Category 3 & 4 statistics for two of the most "consistent" operators in the fleet. The operators' "consistent" appearance in the SmartDrive statistics is also a function of the vehicle type that the drivers operate. Stiff suspensions or off-road work will tend to create some "false-positives", unnecessarily adding them to the reviewer's list.

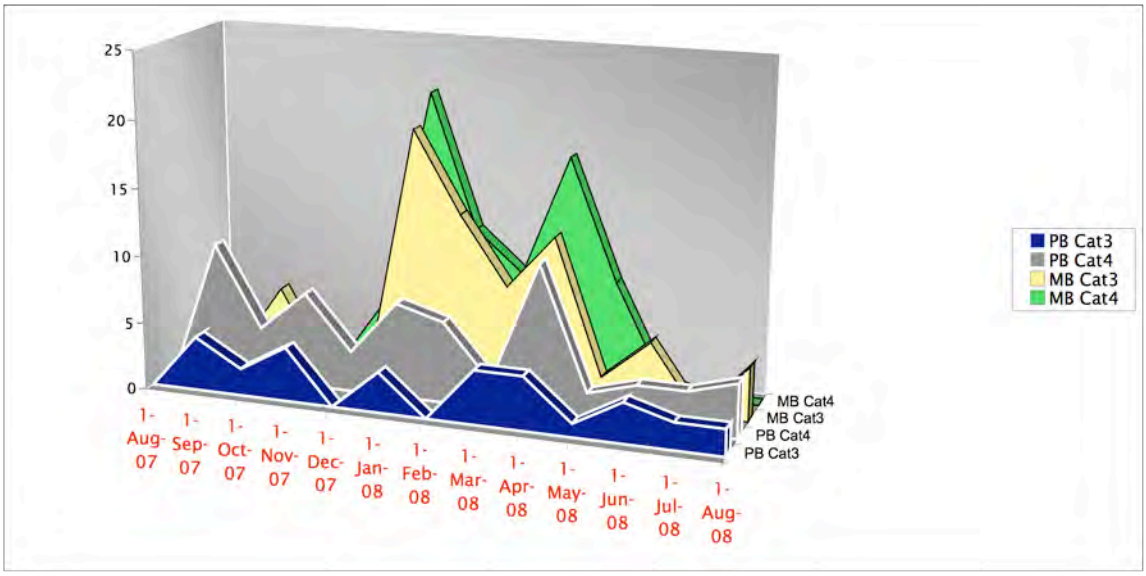


Figure 13: Two Individual Operator's Statistics

As can be seen in Figure 13, qualitatively speaking, before the coaching sessions were initiated in May 2008, the relative amounts of Category 3 & 4 infractions were quite high. After the coaching sessions, the amounts dropped off with an immediate reduction. The effects of coaching on other drivers are inconclusive since other personnel were not consistently captured by the SmartDrive unit. Figure 14 shows this effect for two other drivers' Category 4 infractions. The missing graph sections are where there is absolutely no data on the driver under consideration.

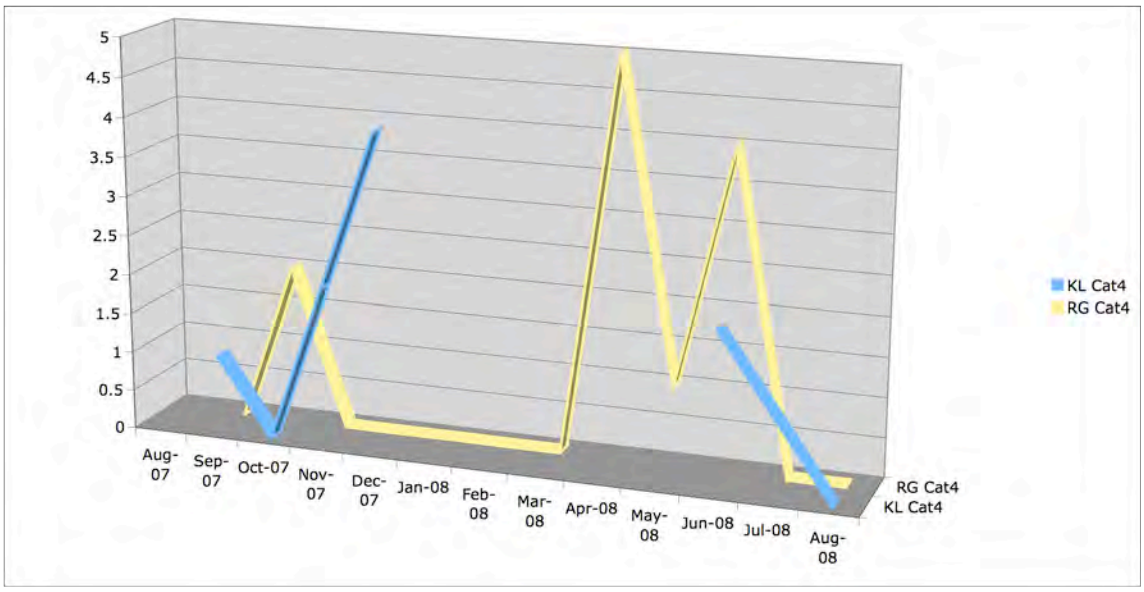


Figure 14: Inconsistent Monitoring

Return on Investment

The installation of the SmartDrive unit into the fleet can have many positive economic results. Since SmartDrive monitors vehicle speeds, one direct savings that results is the decrease in fuel consumption with reduced vehicle speeds. Another is lower accident medical costs since seat belt usage compliance can be monitored. Other issues such as operator distractions and inattention can be monitored and remediated in training and coaching sessions. However, due to inadequate cost accounting and vehicle usage patterns, it is impossible to assign concrete cost dollar amounts to the safety and efficiency trends seen during this pilot program.

A recent fuel economy study[2] by the FHWA of 1997 model year vehicles (composite results of 9 vehicles and light trucks from model year 1997) shows the increase in fuel consumption with speed. The study results are summarized in Figure 15. A speed increase from 65MPH to 75MPH leads to an increased fuel consumption of about 15%. As shown in Figure 16, speeding events from the range of 75 to 85 MPH decreased during this pilot program from about 310 events per month, trending towards 180 events per month. Since the fleet speed profile and distances traveled are not known, exact cost savings cannot be derived. However, for the sake of illustration during this discussion, assume the following scenario: a 40 mile trip at highway speeds, using vehicles with the composite fuel economy shown in Figure 15, gasoline at $2.890 per gallon, and vehicle speeds of 75 MPH (the SmartDrive trigger point, although vehicles can be moving faster than this when triggered due to sampling interval).

At 310 events, the fuel bill would be:

(@75mph) 310 x (40 miles / (24.8 Miles/Gallon)) x 2.890 $/Gallon –or-- $1445.00
(@65mph) 310 x (40 miles / (29.2 Miles/Gallon)) x 2.890 $/Gallon –or-- $1227.26

The excess fuel bill due to speeding would be **$217.74**.

At 180 events, the total fuel bill would be:

(@75MPH) 180 x (40 miles / (24.8 Miles/Gallon)) x 2.890 $/Gallon –or-- $839.03
(@65MPH) 180 x (40 miles / (29.2 Miles/Gallon)) x 2.890 $/Gallon –or-- $712.60

The excess fuel bill due to speeding would be **$126.43**.

The reduction in speeding events translates into a hypothetical ~$91 dollar savings per month for the fleet.

---

[2] West, B.H., R.N. McGill, J.W. Hodgson, S.S. Sluder, and D.E. Smith, *Development and Verification of Light-Duty Modal Emissions and Fuel Consumption Values for Traffic Models*, FHWA Report (in press), Washington, DC, April 1997, and additional project data, April 1998 (Additional resources: www.fhwa-tsis.com)

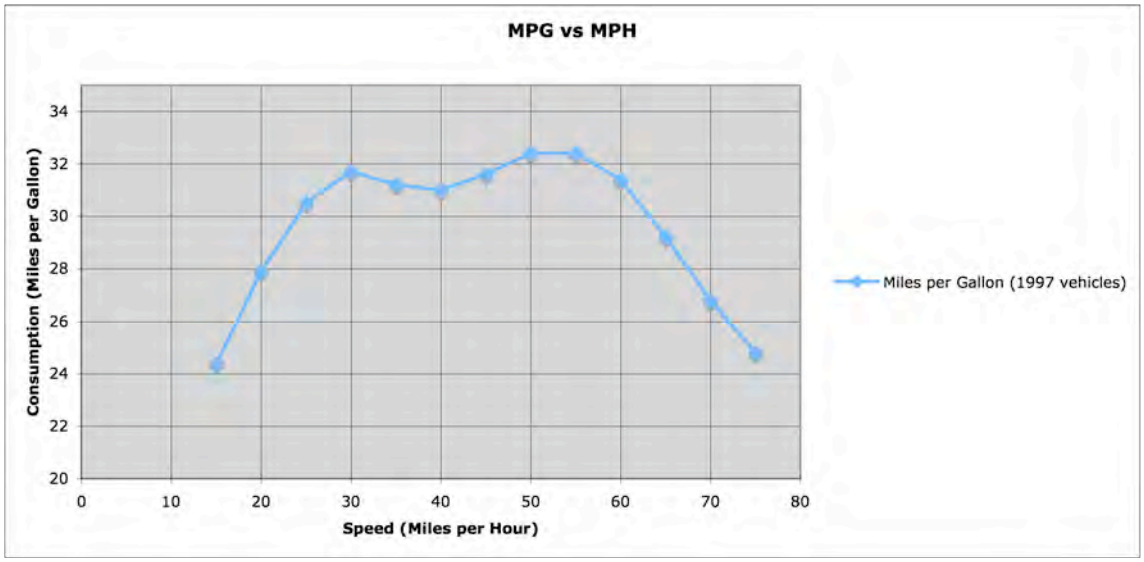


Figure 15: MPG vs. MPH

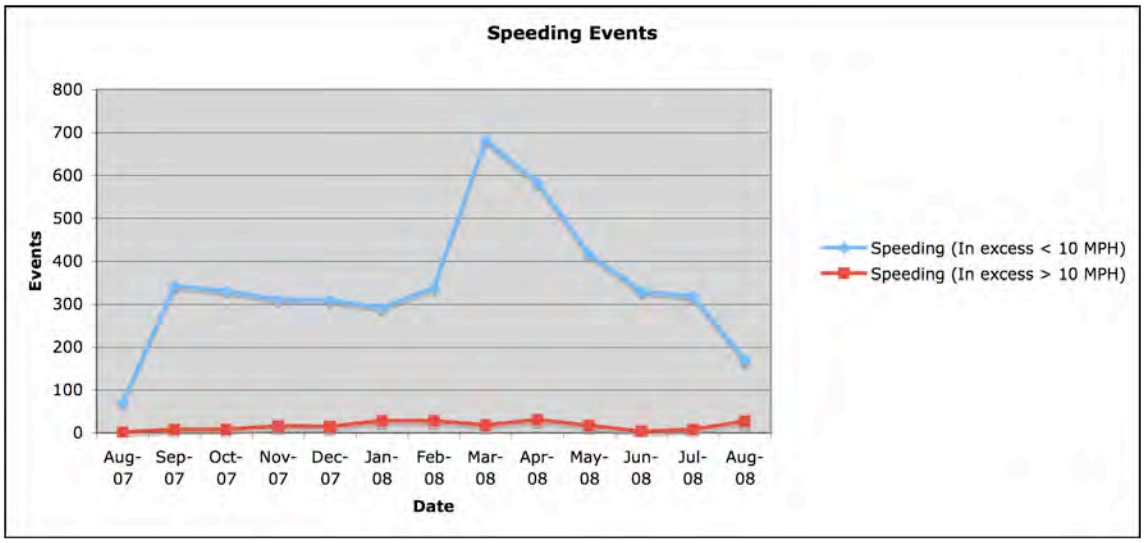


Figure 16: Speeding Events

Another issue captured by the SmartDrive unit during this pilot was the inattention to seat belt usage (Figure 17). After an initial reduction, the non-usage events leveled off, indicating complacency in seat belt utilization. Many studies have shown that enormous economic benefits result from the reduction in bodily injuries from the usage of seat belts. However, due to the lack of accidents or injuries during this study, no economic value can be attributed to seat usage during this pilot study.

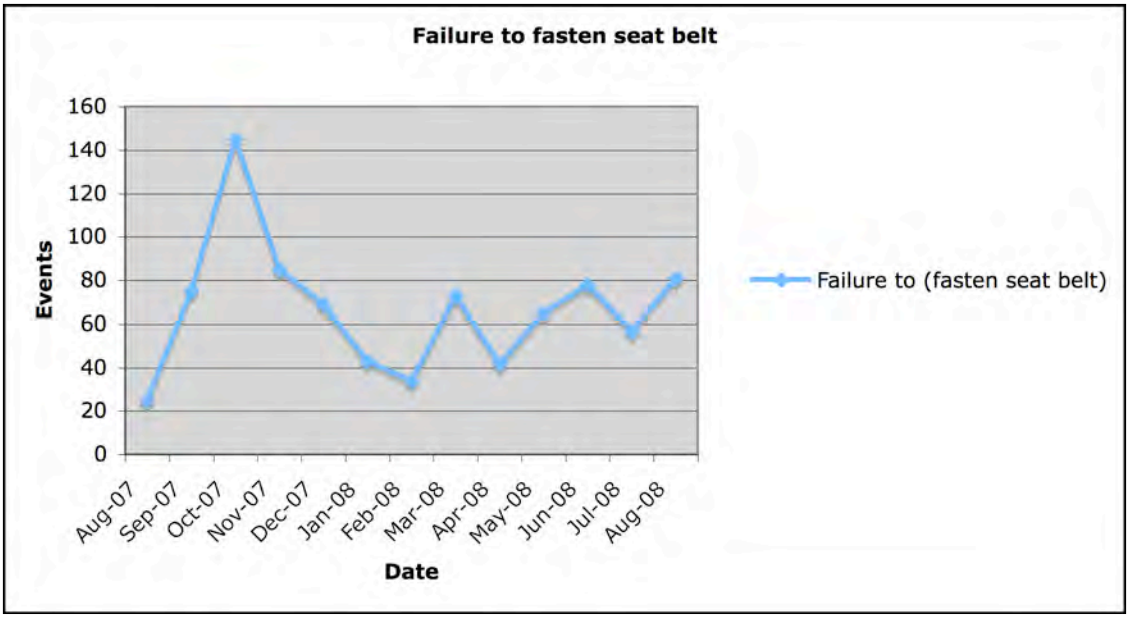


Figure 17: Seat Belt Non-Compliance

Finally, other studies have shown that a reduction in driver distractions should lead to a reduction in accidents. The trends in distractions during this pilot project are shown in Figure 18. The trends appear to have remained stable throughout the pilot project. Once again, no economic benefits can be attributed to the detection of driver distractions during this pilot study. Interestingly, a study[3] (by NHTSA, the Virginia Transportation Research Council and Virginia Tech) that followed 100 cars and 241 drivers over more than one year and 2,000,000 miles, tracking driver distractions and driver performance, shows that their sample fleet was involved in 82 crashes, 761 near crashes, and 8,295 critical incidents. Although the SmartDrive pilot study only involved approximately 50 vehicles and 30 operators, the amount of incidents was considerably less than in the Virginia study. The SmartDrive data only recorded a few collisions (approximately 5) between vehicles and other objects. One conclusion that might be reached is that the Caltrans operators are conscientious about their operating environment since roadway maintenance operations tend to be dangerous.

[3] Klauer, S.G., Dingus, T.A., Neale, V.L., Sudweeks, J.D., and Ramsey, D.J, *The Impact of Driver Inattention on Near-Crash/Crash Risk: An Analysis Using the 100-Car Naturalistic Driving Study Data*, April 2006, Report # DOT HS 810 594 (http://www-nrd.nhtsa.dot.gov/departments/nrd-13/810594/pages/TOC.htm)

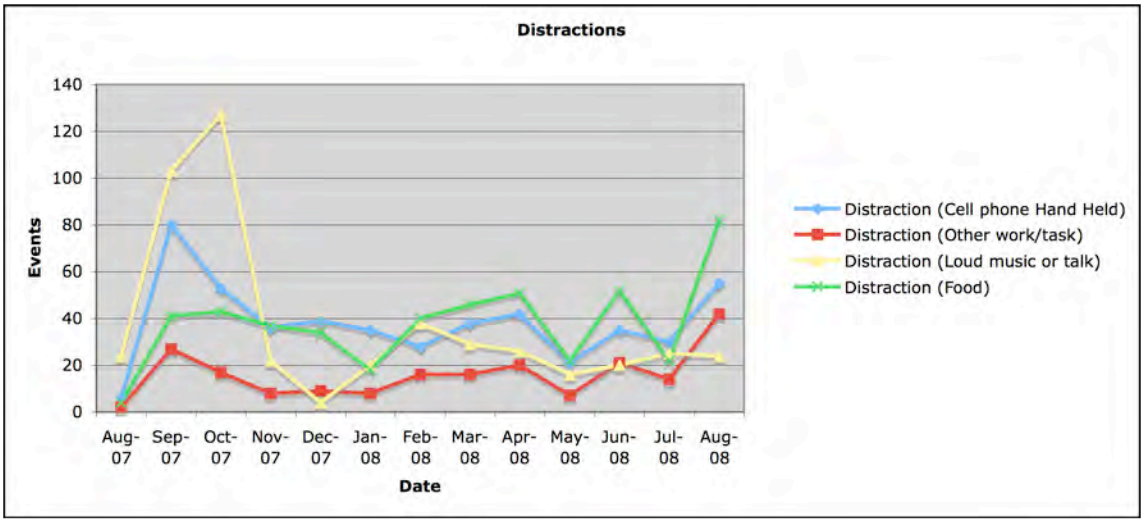


Figure 18: Driver Distractions

SECTION 6:
CONCLUSIONS

Summary

The Video Monitoring Pilot Project ran for approximately one-year duration at the Caltrans District 11 Maintenance Yard. This Pilot Project attempted to quantify and eventually modify driver's performance via the use of a monitoring device within the vehicle. During the first six months, no feedback from management was given to the operators in order to establish a baseline performance standard. At around the six-month mark, management began providing coaching to the operators regarding their performance based on the infractions detected by the monitoring device. An analysis of the year long data stream provides a number of conclusions:

- Coaching is effective in modifying driver behavior. However, coaching must be repeated at regular intervals in order to maintain effectiveness.

- The Caltrans operators' rate of accidents due to distractions is below the rate established by the test pool of the Virginia transportation study. This indicates a conscientious and professional operating organization.

- Lack of seat belt usage is evident. This is unacceptable and a heavy emphasis must be made on consistently using the seat belts.

- Inadequate selection of the test fleet. Trucks and sweepers with harsh suspensions and off-road work create an unnecessarily large amount of false positives.

- Poor return on investment. During the study period, direct savings could only be attributed to increased fuel economy due to enforced reduction in operating speeds. Other cost savings, such as reduced maintenance and accident costs, could not be ascertained due to inadequate vehicular operating histories and utilization data.

- There is evidence of a lack of or inadequate communication between Caltrans management and operating field personnel. The techniques and goals of this pilot project were not effectively disseminated, potentially jeopardizing the study.

Recommendation

Based on the conclusions from this Pilot Project, the following is recommended:

- Due to the expense of a fleetwide deployment, restrict installation of the SmartDrive unit to operating personnel with a history of poor operating practices. This will allow for resources to be concentrated on those that need it most.

- Similarly, only instrument vehicles that can provide consistent and reliable data.
- It might be prudent to install a unit in new-hire or probationary personnel vehicles in order to establish best practices early on.
- Improve seat belt utilization.
- Equip vehicles with a speed governor to eliminate excessive fuel consumption via speeding.
- Investigate a simplified continuous vehicular video recording device in order to provide a video record in the event of an incident; only when there is an incident will the video and audio record be retrieved.
- Recurrent training for vehicular best practices.
- Finally, improve communication methods between Management and operating field personnel. Effective test and implementation of advanced research projects require all of those involved to be "on the same page."

For Further Studies

In addition to the direct cost savings derived from increased fuel economy due to reductions in speed, other indirect cost savings may be gained from areas such as reduced maintenance due to more optimum operation of vehicles. Optimum operation of the vehicles by the operators may result from the continuous improvement in driver training and behavior via the events captured by the SmartDrive unit. In the context of this study, these indirect cost benefits could not be determined due to lack of current and historical utilization and maintenance data of the vehicles. This area of cost reduction shows great promise in creating significant savings to Caltrans. If it is desired to study this area of cost savings, the following is recommended:

- In addition to the SmartDrive unit to capture operating events for use via the driver training curriculum, install an additional device or modify the SmartDrive unit to record vehicle operating history. Ideally, this additional recording device should provide continuous time and speed measurements, a record of brake applications, and estimated throttle input. GPS location tracking may also be useful in providing additional information. Once the vehicles operating histories can be measured, so can the change in maintenance costs via changes in driver training.

APPENDIX A: GENERIC SMARTDRIVE POLICY

ADMINISTRATING the SMARTDRIVE PROGRAM

Explanation and Goals

The SmartDrive program is a driver behavior modification tool that can be systematically applied to our employee drivers, ensuring _____ safe driving expectations are met as well as protecting our driver's and the Company from 3rd party fraudulent claims.

The SmartDrive system is a digital event recorder that records video, audio and the speed and G-forces of the vehicle during the 15 seconds before and after a vehicle collision, near miss, high speed or erratic driving incident. When such an event occurs, a red light on the SmartDrive unit flashes then stays red. This indicator light notifies the driver that a "driving event" has been recorded.

With the SmartDrive dual lens system the "facts" are recorded just as they happen. This protects and prevents innocent drivers from being unfairly blamed for collisions which are clearly not their fault or are relatively minor.

Finally, drivers may take advantage of the "panic button" which may be manually triggered. With this additional protection feature drivers can defend themselves against "road rage" motorists or customer conflict incidents.

_____'s goals in relationship to this program are as follows:

Protect fleet drivers in the event of a vehicle collision;
Protect fleet drivers from potential customer conflict;
Reduce collisions;
Encourage safe driving habits;
Reduce driving related repair and maintenance costs;
Improve fleet gas mileage and
Demonstrate to our clients, customers and the general public that we "care about safety".

_____ Policy

Safety is a responsibility shared by all _____ employees. Every employee must remain aware of the possibility of safety hazards at all times while at work, and take an active role in the prevention of accidents. All employees of the Company are required, as a condition of employment, to exercise due care in the course of their work to prevent injuries to themselves, to other employees, to their customers and general public whom we serve.

_____ has implemented the SmartDrive system as a tool that will help employee drivers improve their driving habits by identifying driving behaviors that can lead to vehicle collisions, personal injury and/or damage or unnecessary wear to company shuttles. For questions about this program please contact our Division Director of Safety at 555-555-5555

Employee Driver Responsibility's Under This Program

Employee Drivers are responsible to log on prior to operating the vehicle each day via the key pad provided with the system. If the light turns red during their shift, drivers are encouraged to request an opportunity to view the recording with their shift supervisor. Remember this system works off of the speed of the vehicle and the G-forces inside the vehicle therefore recording hard braking, acceleration, turns and bumps. With proper follow-up, employee drivers will learn to improve their driving so that their shift will end "event free".

Employee drivers must understand that the company supports a safe work environment and will provide remedial training when warranted. In addition, drivers who fail to improve their driving skills, or who operate vehicles in a negligent or unsafe manner, are subject to immediate disciplinary action up to and including suspension and/ or termination.

Category levels will be established based on the severity of the SmartDrive clip assigned to the employee file.
The following will be for the duration of any 90 day period.

First offense:

- Those employees that incur their first category three **or** category four event will receive counseling, be assigned to take a remedial training class at Smart Drive's *Smart Trainer* on their own time and be placed on 30 day probation. Those employees who fail to take the remedial training class within 14 days of notification during the probation period will be subject to further disciplinary action up to and including removal from their driving position, suspension and/or termination.

Second offense:

- Those employees that incur a **second** category three **or** category four event in a 90 day period will receive counseling, be required to take the _____training class provided by Liberty Insurance on their own time and be placed on a 60 day probation. Those employees who fail to take the remedial training class within 14 days of notification during the probation period will be subject to further disciplinary action up to and including removal from their driving position, suspension and/or termination.

Third Offense:

- Those employees who incur a third category three **or** category four in a 90 day period will be suspended pending management review of their driving records and be subject to separation from the Company.

Management Responsibility's Under This Program

Management is responsible for the overall implementation, operation and administration of the SmartDrive video feedback program at their respective locations.

Downloading Vehicles The SmartDrive system will automatically and wirelessly upload the data a video clips once the vehicles return to base.

All clips are reviewed and categorized within 24- 48 hours immediately following the download.

It is the location manager's responsibility to ensure that:

1. No SmartDrive event clips are deleted without the express written permission of the Region Safety Administrator.
2. All erratic driving events associated with the employee drivers must be reviewed within 4 days following the "event date".
3. **Counseling to discuss and remedying future similar events must take place within seven days following the "driving event" with the employee driver present**.
4. Following the "employee counseling", written documentation must be put into the employee file and/or via the database using the associated reporting package.
5. Employee drivers who incur a category three or category four event are to be assigned to remedial training and a three month probationary period. Those employees who fail to attend the remedial training within 14 days after "notification" or incur additional category three or category four events in a 90 day period will be subject to suspension and or termination.

Assigning Point Values:

Clip Severity Category	Point Value
Category 0	0
Category 1	0- 49
Category 2	50- 199
Category 3	200-274
Category 4	275 and Greater

Incurring a category three or category four event will require your employee driver to attend remedial training.

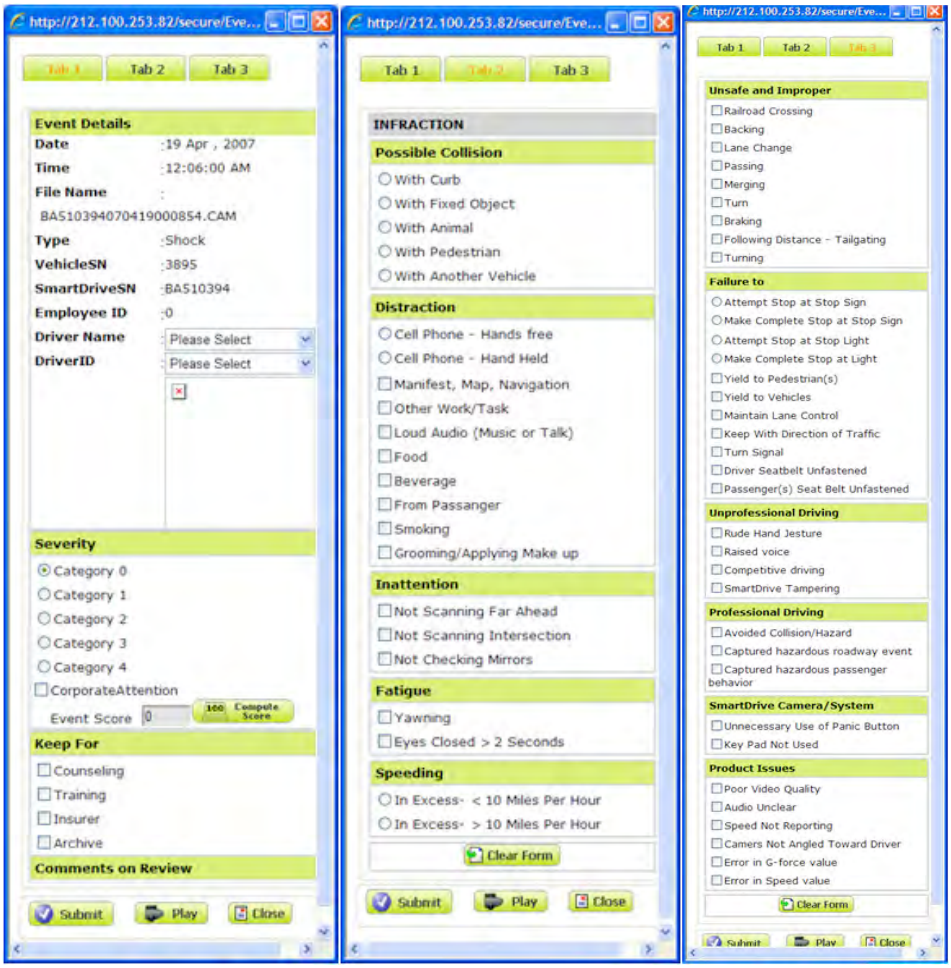
Location managers/ supervisors are responsible for administrating the SmartDrive Program in their branch/ location and will be held accountable for directing it in the manner prescribed above. Managers/ supervisors who circumvent the SmartDrive Program will be subject to suspension and/or termination.

Assigning Accurate Severity Category Point Values

Each SmartDrive video event will be reviewed by SmartDrive trained personnel. The video event will be assessed a score based upon what infractions or distractions were observed. A list of these is provided in the copy of a review form below. A manually activated event triggered by the driver pushing the "Panic button" will be identified as such.

The default severity rating is just a starting point but often not the accurate assessment for an event. You can change the severity rating for an event if you feel the default rating is inaccurate.

Accurate severity category assessments are critical to enable you to identify the risk of a particular event. More importantly, correct assessments are essential to help you to understand the level of risky behavior existing with each of your drivers. The identification of patterns of risky driving allows you to identify and correct those who present the greatest risk to your fleet's safety. The example below shows an event assigned at Category 1.



SmartDrive Event Review Form

The following provides a description of each Clip Severity Category.

- **Category 0 No Fault = 0 Points** – These are g-forced triggers with no infractions or distractions during the events.

- **Category 1 = 0- 49 Points** – These are events that are less an issue of safety but more related to activity that affects wear and tear on the equipment. Examples of this would be events triggered by minor contact with potholes, driveways, and road dips etc. Category 1 events are often related to road surface. For example, a video triggered by contact with a pothole and the driver was observed drinking a beverage is scored in the Category 1 category. (Category 1 Scoring: 0 – 49 points)

- **Category 2 = 50- 199 Points** – These are triggered non-collision events often demonstrating moderately aggressive driving or poor skills. Activity such as hard cornering, hard acceleration or rough use of the vehicle is an example of events associated with this severity rating. Examples of Category 2 infractions and distractions are speeding, unfastened seatbelt, g-force triggered while backing, merging and braking. (Category 2 Scoring: 50-199 points)

  Common poor driving behaviors such as following too close and hard braking will be assigned this category. The number of these events should drop dramatically due to this management intervention. Distracted driving also resides in this severity category.

- **Category 3 = 200- 274 Points** – These are triggered events often demonstrating a higher level of aggressive driving or poor skills. These events are also usually willful behaviors, not events that occurred due to unconscious poor driving habits. Included in this category is road rageand tailgating. Also, significant traffic law violations such as running a stop sign, failure to yield and no seat belt are categorized here. Any category 3 violations need to be treated very seriously as they can be a precursor to a Category 4 event. There should be driver counseling on each event of this category and little tolerance for repeat events in this category. (Category 3 Scoring: 200-274 points)

- **Category 4 = 275 and greater Points** – High-risk driving such as cutting into an oncoming lane to make a left turn, serious traffic law violations such as traveling the wrong way on a one-way street or in the parking lot, shuttles “off of the fixed route”, dangerous driving, negligence, near collisions and excessive speed. Also, camera tampering are categorized here. In addition, multiple infractions and/or distractions will most likely fall in the category. These are the highest level of concern and require immediate action by management. An employee must be called in immediately upon viewing the clip and immediate progressive discipline must be issued in the form of a written verbal warning, written warning or final warning depending on the how many times you have counseled the driver. (Category 4 Scoring: 275 and greater)

- **Very Serious Driving Incident** = Suspension pending management review and termination.

- **Good Driving Recognition** – Positive behavior should be recognized and rewarded. If you rate a video clip with this status and assign it to a driver, you can also create a “Good Driving Certificate”. To create the report you must reopen the video clip *after* it is within the Driver’s

Folder. Next click on the Event Detail Record. After this is up, click on the “printer” icon at the bottom of the screen to pull up the certificate. We recommend a reward system be in place to recognize and reward drivers excelling in the SmartDrive program. Incentives such as movie tickets, pizza parties, recognition and your diligence will help make this program a success.

- **Manual Trigger** – A manual trigger means the driver pushed the red panic button on the bottom of the camera to record an event. This can be useful to record risky actions of another motorist or pedestrians. If your vehicle transports people, this can also be used to record behavior within your vehicle.

Accurate assessment of severity category empowers an organization to identify and react to patterns rather than just by each single event. This is a crucial step in improving the safety record of your branch/ location fleet.

Assigning an Employee to Remedial Training

Those employees that incur a category three or category four event associated with the SmartDrive Program must be assigned to take remedial training.

NOTE: Here is where I would insert your repeater policy.

APPENDIX B: OPERATOR'S REVIEW AND COMMENT FORM

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful**. If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential)**. Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.7526714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? ____ Hours

2. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:
   _____
   _____

3. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? Please explain:
   _____
   _____

4. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   _____
   _____

Usage

5. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle?
   Please explain:
   _____
   _____
   _____

6. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:
   _____
   _____

User Interface

7. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) YES NO
   Please explain:
   _____
   _____

8. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:
   _____
   _____

Effectiveness

9. Would you personally buy this product (or something similar) for your own use?
   (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

_____
_____
_____

Disadvantages:

_____
_____
_____

APPENDIX C: COMPLETED OPERATOR'S REVIEW AND COMMENT FORMS

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful. **If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential).** Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.7526714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES (NO)
   Pleas explain:
   I HAD NO FORMAL TRAINING

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES (NO)
   Please explain:
   I HEARD THE INFORMATION SECOND HAND. NO ONE BELIEVED OR TRUSTED THE MOTIVATION FOR THE CAMERAS BEING INSTALLED. WE FIGURED IT WAS TO CATCH US DOING SOMETHING WRONG, OR THE SMARTDRIVE WANTS TO SELL THERE CAMERAS.

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   I WAS INFORMED BY MY SUPERVISOR AND FELLOW CREW MEMBERS OF THE REASONS. I WAS HIGHLY SCEPTICAL OF THE REASON FOR THE INSTALLATION AND THE USE OF THE INFORMATION COLLECTED.

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   YES - YOU WERE NOTIFIED THAT YOU WERE CAUGHT BY THE CAMERA DOING SOMETHING WRONG

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AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) (NO)
   Please explain:
   INITIALLY I WAS VERY CONSCIOUS OF THE UNIT AND TRIED TO MODIFY MY DRIVING HABITS. I FOUND THAT TRYING TO DRIVE WHILE NOT SETTING OFF THE CAMERA WAS UNNATURAL AND FELT UNSAFE. DRIVING TO SUIT CONDITIONS ON THE FREEWAY AND NOT THE CAMERA SHOULD BE OUR FOCUS. (SAFETY FIRST)
7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   THE SETTINGS ON THE CAMERA HAD BEEN RESET MULTIPLE TIMES. SPEEDS AT WHICH THE CAMERA WAS INITIATED VARIED. ALSO BUMPS AND CURBS SET THE UNIT OFF.
   * WE DRIVE OVER CURBS ALL DAY LONG

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) (YES) NO
   Please explain:
   THIS WAS NOT A MAJOR PROBLEM, BUT ANY LOSS OF VISABILITY IS A NEGATIVE.
9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:
   I DON'T BELIEVE THE FEEDBACK IS USEFUL. THE ACTIVATIONS DO NOT TAKE INTO CONSIDERATIONS THE FLOW OF TRAFFIC OR THE MANUVERS THAT A CALTRANS VEHICLE HAS TO MAKE. IE.. PULLING OFF OR ONTO A SHOULDER WITH VEHICLES MOVING AT 65-80 mph.

Effectiveness

10. Would you personally buy this product (or something similar) for your own use?
    (Circle One) YES (NO) !

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
COULD SHOW THAT ANOTHER DRIVER WAS AT FAULT FOR AN ACCIDENT

Disadvantages:
(1) IT IS A MAJOR DISTRACTION (2) IT IS AN INVASION OF PRIVACY (3) IT IS NOT AN EFFECTIVE TOOL. (4) IT COULD BE USED AGAINST THE DRIVER AND THE STATE FOR LEGAL PROCEEDINGS.

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AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? 1-2 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) (YES) NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) (YES) NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   Yes. Smart Drive knew the state had deep pockets and was going after a potential big client.

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   There was no effective feedback program in place.

* Smart Drive set sensitivity levels low to increase event occurences. I believe that this was done to sell their product because it would probably capture more poor driving skills in vehicles where cameras

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire Evaluation of Smartdrive™ Vehicle Event Monitoring

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) NO
   Please explain:
   I had to watch what I talked about to others in the vehicle. I had to reduce using profanity.

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   The sensitivity was set low. I constantly complained but no change was made.

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) (YES) NO
   Please explain:
   Sometimes. When you are looking for a street sign or trying to pull your vehicle on shoulder and ~~eg~~ unit blocked view of high area items truck might hit
9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES (NO)
   Please explain:
   We were never given correct feedback by Caltrans ~~Managem~~ Management

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
If you are a poor driver it could help you if you were involved in an accident.

Disadvantages:
It is a waste of taxpayers money installing them in state vehicles. Caltrans also installed them in mainly maintenance vehicles. They should have been installed in the vehicles of ~~a~~ other department that have more accidents/damages and collisions.

* Please ~~fe~~ feel free to contact me about ~~this~~ Smart Drive systems and there being installed in state vehicles (Don [illegible] 467-4010)

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Training

1. How many hours of training/orientation did you receive? 1 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) (YES) NO
   Pleas explain:
   Made to capture driving incidents or accidents
   Collect Vehicle Data

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) (YES) NO
   Please explain:
   Wanted to change Bad driving by employees and have video proof in case of an accident
   Drivers concerned about possible adverse action.

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   Smart Drive was hoping to make a fortune selling and providing services to the State

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   None that I was made aware of

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) NO
   Please explain:
   I was spending alot of time monitoring my gauges and the Smart Drive unit, and was distracted from watching the road.

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   The settings were changed at least once because events were happening with small bumps

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) (YES) NO
   Please explain:
   Blocks some of the view — With someone in my lift bucket I had to look around the camera to see his position / location or hand signals.
9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES (NO)
   Please explain:
   As the driver I have no idea what happened withe the info. I only know I was being recorded.

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
Video could show that I was cut-off or not at fault in case of an accident.

Disadvantages:
Audio could record something I said, that was meant to be private with someone in my vehicle.
If the video showed I was distracted by radio communication at the time of the accident, this could be used against the State in court to prove liability.

Nov 07 08 09:28a District-11 760-745-1836 p.2

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Training

1. How many hours of training/orientation did you receive? 4 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? Yes

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain: No
   They said that projections were sent to Indig
   viewed and ones pertaining to safety would
   be reviewed by supervisors and reviewed with
   workers

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain: Not so bad

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages: Can help in an accident or if you need a camera readily available

Disadvantages: visibility

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:
   DONT KNOW N/A

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:
   N/A

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   N/A

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   N/A

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:
   N/A

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:
   N/A

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:
   N/A

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:
   N/A

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO
    N/A

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
N/A

Disadvantages:

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training ~~was the~~ SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain: NO SMART DRIVE TRAINING

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   NO

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) YES NO
   Please explain: ANY ~~[illegible]~~ Thing besides a windshield create visibility problems

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain: I've Had NO feedback

Effectiveness

10. Would you personally buy this product (or something similar) for your own use?
    (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages: N

Disadvantages: N

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Training

1. How many hours of training/orientation did you receive? 4 (?) Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) (YES) NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) (YES) NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   NO

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   I heard I was on a video, but never got to see. I would love to see it.

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain: what is a false reading. Unclear.

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) (YES) NO
   Please explain: I was in a video. and never got to see it.

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages: If there is an accident it can be caught on tape. to see who was to blame.

Disadvantages: Could get caught having a bad Hair day.

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES (NO)
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES (NO)
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   YES

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:
   I ALWAYS AM SAFE ANYWAY BUT SOME TIMES I TURN ITON IF I THINK THERE IS GOING TO BE AN ACCIDENT LIKE WHEN ITS 'Q'ING UP.

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   ON ONE OF THE TRUCKS EVERY LITLE BUMP IN THE ROAD SETS IT OFF

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:
   MAYBE A LITLE BUT NOT REALLY

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:
   I DONT KNOW, I HAVENT GOT ANY FEED BACK

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
LIKE WHE YOU GET THE TRUCK UP TO 70 MPH TO MAKE IT UP A HILL

Disadvantages:
SOMEONE CRASHES INTO ME THEN YOU CAN SEE IT WASNT MY FAULT

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   NO

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

   _____
   _____
   _____

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

   _____
   _____

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

   _____
   _____

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

   _____
   _____

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

_____
_____
_____

Disadvantages:

_____
_____
_____

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Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   No

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   No

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain: No idea

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages:

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages:

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Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? NONE

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain: It makes me feel someone looking at me every minute. INTERESTING - HARD TO DRIVE

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain: ?

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain: ?

Effectiveness

10. Would you personally buy this product (or something similar) for your own use?
    (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages:

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES (NO)
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES (NO)
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? NO

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain: NO NEVER TOLD ABOUT IT

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain: I DONT NO

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages: NONE

Disadvantages:

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Training

1. How many hours of training/orientation did you receive? 2 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) (YES) NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES (NO)
   Please explain:
   Not during the introductory meeting - explained more clearly by union representative during union meeting

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   FOR THE MOST PART - IT NEVER WAS ELABORATED How it would impact OR REFLECT ON THE DRIVER

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   Not to my recollection.

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) NO
   Please explain:
   IT WAS a distraction. ~~The~~ THE UNIT IN TRUCK C#7342 IS SET too SENSITIVE AND Comes ON PASSING OVER Botts DOTS & found myself looking frequently to SEE IF IT WAS RECORDING VS looking at traffic.
7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   TRIPS Bumps in Concrete, Botts Dots, expansion JOINTS etc...

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) YES (NO) 99% OF THE TIME
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:
   I don't Know - NEVER HAVE PARTICIPATED IN USER FEED BACK.

Effectiveness

10. Would you personally buy this product (or something similar) for your own use?
    (Circle One) (YES) NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
RECORDS INCIDENTS WHICH ~~Re~~ Clear DRIVERS OF ERRORS OR PUBLIC Discrepancy's.

Disadvantages:
DRAWS DRIVER'S ATTENTION AWAY FROM DRIVING & TRAFFIC - FAISE TRIGGERS ON TRUCK # C-#7342

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES (NO)
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES (NO)
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? NO

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain: NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   Due to having to drive over a curb or BERM in order to position the vehicle for the job, the false reading would occur.

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) (YES) NO
   Please explain: Distracting because it is close to rear-view mirror. ALSO A SUB-CONCIOUS distraction

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) (YES) NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages:
Although the speed limit is 55-70 mph, the public travels much faster, and in order to keep from getting run over we have to exceed speed limit, thus setting off smart drive. a total waste of taxpayer money.

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show? Yes

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain: DO NOT CARE

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
management & they can use it to get RID OF you

Disadvantages:
they can get rid of you

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Training

1. How many hours of training/orientation did you receive? 0 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:
   No training

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:
   No training

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   See above

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   See above

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:
   No training

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES (NO)
   Please explain:
   I don't know

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES (NO)
   Please explain:
   Don't know.

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
N/A.

Disadvantages:
N/A.

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

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Training

1. How many hours of training/orientation did you receive? 1 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   No

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   No

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) NO
   Please explain:
   QUIT SPEEDING

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   BUMPS ON ROAD TRIGGER RECORDING

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving?
   (Circle One) (YES) NO
   Please explain:
   LOOKING @ OVERHEAD SIGNS

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES (NO)
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use?
    (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
RECORD ACCIDENTS IN MOVING LANE CLOSURES.

Disadvantages:

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Training

1. How many hours of training/orientation did you receive? 2 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   Yes

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   No, once they were installed we never got any feedback whether negative or positive.

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES (NO)
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES (NO)
   Please explain:
   Never got to see any results from smart/drive unit

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages:
As a operator of a vehicle with the smart/drive unit installed, I feel the operator should be able to reveiw & discuss the contents of the reorded material.

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Training

1. How many hours of training/orientation did you receive? 2 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   YES

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   NO

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain: ROUGH SPOTS IN ROAD ALWAYS SET CAMERA OFF

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain: WINDSHIELD MOUNT IN WAY

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

Disadvantages: MIS-READINGS — INTRUSIVE/DISTRACTING CRAMMED IN DRIVERS FACE

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Training

1. How many hours of training/orientation did you receive? 1 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:
   Yes it was explained but "Big Brother" used it as a witch hunt

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   Yes

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   No there was not any procedure provided.

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES (NO)
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES (NO)
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) (YES) NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES (NO)

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages: [redacted]. If I were hit by another vehicle it would be a great advantage.

Disadvantages: All it did was to give "Big Brother" another reason to [redacted].

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Training

1. How many hours of training/orientation did you receive? 2 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES (NO)
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:
   This is all I want to say about "SMART Drive"

4. ~~Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show~~?
   This device, because of it's location in the vehicle is very annoying and aggravating.

5. ~~Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:~~
   This camera, should be installed in vehicles only when the driver of such vehicle, has had three are more accidents in one year. It would be a great tool, for evaluation, and training.

Thank You.

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

   _____
   _____
   _____

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

   _____
   _____

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

   _____
   _____

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

   _____
   _____

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

_____
_____
_____

Disadvantages:

_____
_____
_____

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful. **If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential).** Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.7526714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? 4 Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) (YES) NO
   Pleas explain:

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) (YES) NO
   Please explain:

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?
   Not to any great detail if at all

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:
   We were initially told to contact our support contact & then were told to contact general Cust. support

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? (YES) NO
   Please explain:
   I was more cognizant of my speed & whether I was buckled

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) (YES) NO
   Please explain:
   Happened often: door shutting; potholes @ low speed

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES (NO)
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain:

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) (YES) NO
    For my kids
10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
Evidence in an accident; Encourage defensible driving

Disadvantages:
Loss of privacy - Each user should be able to access their own videos.

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful. **If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential).** Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.7526714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive? ____ Hours

2. During training was the SmartDrive theory of operation clearly explained?
   (Circle One) YES NO
   Pleas explain:

   _____

   _____

3. Was the purpose of the SmartDrive™ evaluation project clearly explained?
   (Circle One) YES NO
   Please explain:

   _____

   _____

4. Were you told why the SmartDrive™ units are being tested and what the results of the pilot project may show?

   yes.

   _____

5. Was there a procedure in place to provide feedback about negative or unexpected results from the SmartDrive™ units? Please explain:

   yes. Frequent meetings with Smart Drive

   _____

AHMCT UCDAVIS Caltrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

Usage

6. Did having the SmartDrive™ unit installed in the vehicle change the way you drive and operate the vehicle? YES NO
   Please explain:

7. Did you feel there was a possibility of false readings being generated by the SmartDrive™ device? (Circle One) YES NO
   Please explain:

User Interface

8. Does the SmartDrive™ unit create visibility problems while driving? (Circle One) YES NO
   Please explain:

9. Is the user feedback from the SmartDrive™ device sufficient? (Circle One) YES NO
   Please explain: ?

Effectiveness

10. Would you personally buy this product (or something similar) for your own use? (Circle One) YES NO

10. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
- Improves Driving behavior
- An easy way to record Accidents or incidents

Disadvantages:
None

APPENDIX D: MANAGER'S REVIEW AND COMMENT FORM

AHMCT UCDAVIS Caltrans	**AHMCT Equipment Questionnaire** **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful. **If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential).** Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.752.6714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Please be as detailed as you can. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive from the manufacturer?
   ____ Hours

2. Was the training and orientation process sufficient and understandable for you to explain the purpose and usage of the SmartDrive™ units to your vehicle operators?
   (Circle One) YES NO
   If NO, please explain:
   _____
   _____

Usage

3. Did the product meet your expectations? (Circle One) YES NO
   Please explain:
   _____
   _____

4. Do you believe that the SmartDrive™ units will help reduce maintenance costs of your vehicles?
   (Circle One) YES NO Please estimate the percentage change: ____ %

5. Did the SmartDrive™ units help reduce accidents?
   (Circle One) YES NO Please estimate the percentage change: ____ %

6. Did the SmartDrive™ units change administrative and overhead costs?
   (Circle One) INCREASE DECREASE NC
   Please estimate the percentage change: ____ %

   Please explain the type of changes:

   _____
   _____

7. Did the employees accept the SmartDrive™ units?
   (Circle One) YES NO Please explain:

   _____
   _____

8. Did the product negatively affect employee attitudes? (Circle One) YES NO
   Please explain:

   _____
   _____

9. How were the findings and results from the SmartDrive™ unit event evaluation shared and explained with the employees? Please explain:

   _____
   _____

10. Were administrative procedures modified to support this device?
    (Circle One) YES NO
    Please explain:

    _____
    _____

User Interface

11. Was the product unobtrusive and easy to use? (Circle One) YES NO
    Please explain:

    _____
    _____

12. Were the results provided from the SmartDrive™ unit by the manufacturer useful and understandable?
    (Circle One) YES NO Please explain:

    _____
    _____

Effectiveness

13. Would you recommend that the Department purchase the SmartDrive™ units for a limited segment of the Caltrans fleet? (Circle One) YES NO
    Please explain:
    _____
    _____

14. Would you personally buy this product (or something similar) for your own usage? (Circle One) YES NO

15. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:

_____
_____
_____

Disadvantages:

_____
_____
_____

Once again, Thanks for your comments!

APPENDIX E: COMPLETED MANAGER'S REVIEW AND COMMENT FORMS

AHMCT UCDAVIS Extrans	AHMCT Equipment Questionnaire **Evaluation of Smartdrive™** **Vehicle Event Monitoring**

This document will be used by AHMCT for evaluation of the SmartDrive™ device. Your input is very important and valuable. Please provide any additional information that you think is helpful. **If you have a compelling story regarding SmartDrive™ and your situation, and you would like to share with us, please include your full contact information and we will get back to you as soon as possible. (The information provided will be held confidential).** Additionally, if you have any questions or comments, please feel free to contact us.

Contact #1	Contact #2	Office
AHMCT Deployment Victor Reveles Office: 530.752.3965 Cell: 530.304.1372 E-Mail: vreveles@ucdavis.edu	AHMCT Research Engr Phillip W. Wong E-Mail: phil@ahmct.ucdavis.edu	Victor Reveles/ AHMCT Mech & Aero Engr Dept University of California, Davis One Shields Ave Davis, CA 95616 Phone: 530.752.5981 Fax: 530.752.6714

Please use the back of these sheets or attach additional sheet if you need to expand on your answers. Please be as detailed as you can. Once again, thank you for your input.

Training

1. How many hours of training/orientation did you receive from the manufacturer?
   20 Hours

2. Was the training sufficient and understandable enough for you to explain the purpose and usage of the SmartDrive™ units to your vehicle operators?
   (Circle One) (YES) NO
   If NO, please explain:
   _____
   _____

Usage

3. Did the product meet your expectations? (Circle One) (YES) NO
   Please explain:
   Reports were helpful. but found them to be lacking when looking for 2 separate Accidents

4. Do you believe that the SmartDrive™ units will help reduce maintenance costs of your vehicles?
   (Circle One) (YES) NO Please estimate the percentage change: 10 %

5. Did the SmartDrive™ units help reduce accidents?
   (Circle One) (YES) NO Please estimate the percentage change: 10 %

6. Did the SmartDrive™ units change vehicle administrative and overhead costs?
(Circle One) INCREASE DECREASE NC
Please estimate the percentage change: ____ %

Please explain the type of changes:

7. Did the employees accept the SmartDrive™ units?
(Circle One) YES NO Please explain:
most Employees where ok with it once the Intent was explained.

8. Did the product have a negative affect employee attitudes? (Circle One) YES NO
Please explain:

9. How were the findings and results from the SmartDrive™ unit event evaluation shared and explained with the employees? Please explain:
In most Cases Employees Changed behavior once they Viewed the Video's.

10. Were administrative procedures modified to support this device?
(Circle One) YES NO
Please explain:
System is Constantly updated to meet Customer needs.

User Interface

11. Was the product unobtrusive and easy to use? (Circle One) YES NO
Please explain:

12. Were the results provided from the SmartDrive™ unit by the manufacturer useful and understandable?
(Circle One) YES NO Please explain:

Effectiveness

13. Would you recommend that the Department purchase the SmartDrive™ units for a limited segment of the Caltrans fleet? (Circle One) YES NO
    Please explain:

14. Would you personally buy this product (or something similar) for your own usage? (Circle One) YES NO

15. Were the SmartDrive units robust, reliable and easy to maintain?
    (Circle One) YES NO
    Please explain:
    If we had any problems with any of the units, Smart Drive Corrected it quickly.

16. Any evidence of SmartDrive unit tampering by operators?
    (Circle One) YES NO
    Please explain:

17. Please list any advantages and disadvantages (in your opinion) of having the SmartDrive™ installed on our Caltrans vehicles:

Advantages:
1. Reporting of Accidents.
2. Will Improve driving pattern's.
3.

Disadvantages: None

Once again, Thanks for your comments!

APPENDIX F: RAW DATA

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Phil Wong at CalTrans
Thursday, October 16, 2008

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My Fleet Events
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My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

August 2007

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24 Category 2 : 15 Category 3 : 2 Category 4 : 6	25
26	27 Category 1 : 1 Category 2 : 9 Category 3 : 1 Category 4 : 4	28 Category 2 : 22 Category 3 : 1 Category 4 : 1	29 Category 2 : 28 Category 3 : 2 Category 4 : 3	30 Category 2 : 13 Category 3 : 1 Category 4 : 8	31 Category 1 : 2 Category 2 : 13	

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My Fleet Drivers
My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

September 2007

S	M	T	W	T	F	S
30	31	1	2	3	4	5
						1 Category 2 : 1
2	3	4	5	6	7	8
		Category 2 : 23 Category 3 : 4 Category 4 : 3	Category 2 : 17 Category 3 : 2 Category 4 : 2	Category 2 : 4 Category 3 : 1 Category 4 : 2	Category 2 : 32 Category 3 : 11 Category 4 : 4	
9	10	11	12	13	14	15
Category 2 : 4 Category 3 : 1 Category 4 : 24	Category 2 : 20 Category 3 : 4 Category 4 : 4	Category 2 : 13 Category 3 : 4 Category 4 : 3	Category 2 : 29 Category 3 : 1 Category 4 : 4	Category 2 : 30 Category 3 : 5 Category 4 : 3	Category 2 : 10 Category 3 : 2 Category 4 : 1	Category 2 : 4 Category 3 : 4 Category 4 : 1
16	17	18	19	20	21	22
Category 1 : 1 Category 2 : 9 Category 3 : 1 Category 4 : 1	Category 2 : 27 Category 3 : 2 Category 4 : 2	Category 2 : 16 Category 3 : 4 Category 4 : 9	Category 2 : 41 Category 3 : 10 Category 4 : 10	Category 2 : 34 Category 3 : 2 Category 4 : 9	Category 2 : 18 Category 3 : 3 Category 4 : 1	Category 2 : 1
23	24	25	26	27	28	29
Category 1 : 2 Category 2 : 10 Category 3 : 4 Category 4 : 11	Category 2 : 17 Category 3 : 2 Category 4 : 5	Category 1 : 1 Category 2 : 46 Category 3 : 3 Category 4 : 6	Category 1 : 1 Category 2 : 22 Category 3 : 4 Category 4 : 4	Category 2 : 20 Category 3 : 1 Category 4 : 3	Category 1 : 1 Category 2 : 15 Category 3 : 3 Category 4 : 8	Category 2 : 1
30	1	2	3	4	5	6
Category 2 : 4 Category 3 : 4 Category 4 : 3						

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My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

October 2007

S	M	T	W	T	F	S
	1 Category 1 : 1 Category 2 : 22 Category 3 : 3 Category 4 : 3	2 Category 2 : 14 Category 3 : 2 Category 4 : 1	3 Category 2 : 33 Category 3 : 3 Category 4 : 2	4 Category 1 : 2 Category 2 : 14 Category 3 : 4 Category 4 : 5	5 Category 2 : 16 Category 3 : 1 Category 4 : 5	6
7	8	9 Category 2 : 8 Category 3 : 1 Category 4 : 1	10 Category 1 : 1 Category 2 : 8 Category 3 : 4 Category 4 : 2	11 Category 2 : 16 Category 3 : 4 Category 4 : 4	12 Category 2 : 12	13 Category 2 : 3 Category 3 : 1
14	15 Category 2 : 23 Category 3 : 2 Category 4 : 2	16 Category 1 : 1 Category 2 : 24 Category 3 : 3 Category 4 : 2	17 Category 1 : 2 Category 2 : 10 Category 3 : 3 Category 4 : 3	18 Category 1 : 1 Category 2 : 30 Category 3 : 3 Category 4 : 1	19 Category 2 : 31 Category 3 : 3 Category 4 : 5	20 Category 4 : 1
21 Category 2 : 5	22 Category 2 : 53 Category 3 : 2 Category 4 : 6	23 Category 1 : 2 Category 2 : 10 Category 3 : 1 Category 4 : 1	24 Category 1 : 1 Category 2 : 11 Category 3 : 2 Category 4 : 11	25 Category 2 : 24 Category 3 : 2 Category 4 : 2	26 Category 1 : 1 Category 2 : 23 Category 3 : 4 Category 4 : 1	27
28 Category 1 : 4 Category 2 : 12 Category 4 : 1	29 Category 1 : 2 Category 2 : 35 Category 3 : 1 Category 4 : 1	30 Category 2 : 48 Category 3 : 3 Category 4 : 4	31 Category 2 : 62 Category 3 : 4 Category 4 : 7			

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My Fleet Drivers
My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

November 2007

S	M	T	W	T	F	S
28	29	30	31	1 Category 2 : 43 Category 4 : 3	2 Category 2 : 9 Category 3 : 1 Category 4 : 2	3 Category 2 : 23 Category 3 : 1 Category 4 : 2
4 Category 2 : 4 Category 4 : 21	5 Category 2 : 13 Category 3 : 3 Category 4 : 3	6 Category 1 : 1 Category 2 : 25 Category 3 : 7 Category 4 : 7	7 Category 2 : 39 Category 3 : 2 Category 4 : 13	8 Category 2 : 31 Category 3 : 2 Category 4 : 4	9 Category 1 : 1 Category 2 : 16 Category 3 : 2 Category 4 : 1	10
11	12	13 Category 1 : 2 Category 2 : 21 Category 3 : 2 Category 4 : 3	14 Category 2 : 16 Category 4 : 4	15 Category 1 : 1 Category 2 : 16 Category 3 : 5 Category 4 : 7	16 Category 2 : 10 Category 3 : 1 Category 4 : 1	17 Category 2 : 4 Category 3 : 1 Category 4 : 2
18 Category 2 : 5	19 Category 2 : 17 Category 3 : 3 Category 4 : 5	20 Category 2 : 11 Category 3 : 1 Category 4 : 1	21 Category 2 : 15 Category 4 : 8	22	23	24
25	26 Category 1 : 4 Category 2 : 20 Category 4 : 6	27 Category 2 : 13 Category 3 : 1 Category 4 : 20	28 Category 1 : 1 Category 2 : 17 Category 3 : 3 Category 4 : 16	29 Category 1 : 1 Category 2 : 19 Category 4 : 10	30 Category 2 : 2 Category 3 : 1 Category 4 : 1	

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My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

December 2007

S	M	T	W	T	F	S
						1 Category 2 : 6 Category 4 : 4
2 Category 2 : 3 Category 3 : 1 Category 4 : 15	3 Category 1 : 4 Category 2 : 18 Category 3 : 1 Category 4 : 12	4 Category 1 : 1 Category 2 : 30 Category 3 : 5 Category 4 : 25	5 Category 2 : 16 Category 3 : 6 Category 4 : 7	6 Category 2 : 15 Category 3 : 4 Category 4 : 2	7 Category 2 : 11 Category 3 : 1 Category 4 : 2	8 Category 2 : 1 Category 3 : 1
9	10 Category 1 : 2 Category 2 : 20 Category 3 : 3 Category 4 : 7	11 Category 1 : 3 Category 2 : 18 Category 3 : 4 Category 4 : 2	12 Category 1 : 1 Category 2 : 28 Category 3 : 3 Category 4 : 8	13 Category 1 : 2 Category 2 : 30 Category 3 : 8 Category 4 : 6	14 Category 1 : 1 Category 2 : 24 Category 3 : 4 Category 4 : 4	15
16 Category 2 : 7 Category 4 : 2	17 Category 2 : 29 Category 3 : 3 Category 4 : 9	18 Category 1 : 1 Category 2 : 16 Category 4 : 17	19 Category 2 : 11 Category 3 : 1 Category 4 : 42	20 Category 2 : 8 Category 3 : 1 Category 4 : 42	21 Category 2 : 4 Category 4 : 68	22
23 Category 4 : 7	24 Category 2 : 3 Category 4 : 12	25 Category 2 : 2	26 Category 2 : 16 Category 4 : 40	27 Category 1 : 1 Category 2 : 17 Category 3 : 1 Category 4 : 37	28 Category 1 : 1 Category 2 : 14 Category 3 : 4 Category 4 : 2	29
30	31 Category 2 : 12 Category 3 : 1 Category 4 : 12					

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My Fleet Drivers
My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

January 2008

S	M	T	W	T	F	S
		1	2 Category 1 : 1 Category 2 : 22 Category 3 : 7 Category 4 : 27	3 Category 2 : 16 Category 3 : 2 Category 4 : 35	4 Category 1 : 2 Category 2 : 13 Category 3 : 3 Category 4 : 70	5 Category 2 : 2 Category 4 : 18
6 Category 2 : 2 Category 4 : 2	7 Category 2 : 10 Category 4 : 7	8 Category 1 : 1 Category 2 : 11 Category 4 : 6	9 Category 2 : 12 Category 3 : 2 Category 4 : 57	10 Category 2 : 11 Category 3 : 3 Category 4 : 39	11 Category 2 : 18 Category 3 : 1 Category 4 : 25	12
13 Category 2 : 2	14 Category 2 : 10 Category 3 : 1 Category 4 : 41	15 Category 1 : 3 Category 2 : 9 Category 3 : 3 Category 4 : 21	16 Category 2 : 17 Category 3 : 1 Category 4 : 34	17 Category 2 : 20 Category 3 : 2 Category 4 : 43	18 Category 2 : 11 Category 3 : 2 Category 4 : 36	19 Category 2 : 1 Category 4 : 2
20	21 Category 2 : 2	22 Category 2 : 24 Category 3 : 2 Category 4 : 4	23 Category 2 : 15 Category 3 : 5 Category 4 : 7	24 Category 2 : 8 Category 3 : 5 Category 4 : 1	25 Category 2 : 8 Category 3 : 4 Category 4 : 3	26
27 Category 2 : 1 Category 3 : 1 Category 4 : 3	28 Category 2 : 8 Category 3 : 1 Category 4 : 3	29 Category 1 : 1 Category 2 : 21 Category 4 : 2	30 Category 2 : 20 Category 3 : 1	31 Category 1 : 1 Category 2 : 19 Category 3 : 5 Category 4 : 4		

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February 2008

S	M	T	W	T	F	S
					1 Category 2 : 24 Category 3 : 8 Category 4 : 6	2 Category 2 : 3
3 Category 2 : 4	4 Category 2 : 16 Category 3 : 1 Category 4 : 3	5 Category 2 : 28 Category 3 : 2 Category 4 : 2	6 Category 2 : 25 Category 3 : 1 Category 4 : 5	7 Category 2 : 22	8 Category 2 : 10 Category 3 : 5 Category 4 : 4	9
10	11 Category 1 : 1 Category 2 : 8 Category 4 : 2	12	13 Category 2 : 22 Category 3 : 4 Category 4 : 5	14 Category 2 : 13 Category 3 : 1 Category 4 : 1	15 Category 1 : 1 Category 2 : 13 Category 3 : 1 Category 4 : 6	16
17 Category 2 : 4 Category 3 : 1 Category 4 : 1	18	19 Category 2 : 30 Category 3 : 1 Category 4 : 4	20 Category 1 : 1 Category 2 : 14 Category 3 : 1 Category 4 : 1	21 Category 1 : 1 Category 2 : 32 Category 3 : 3	22 Category 2 : 9	23
24	25 Category 2 : 27 Category 3 : 2 Category 4 : 1	26 Category 1 : 1 Category 2 : 38 Category 3 : 2 Category 4 : 3	27 Category 2 : 33 Category 3 : 1 Category 4 : 5	28 Category 1 : 1 Category 2 : 55 Category 3 : 3 Category 4 : 2	29 Category 2 : 26 Category 3 : 2 Category 4 : 4	

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MY FLEET EVENTS

March 2008

S	M	T	W	T	F	S
						1 Category 2 : 1
2 Category 2 : 4 Category 4 : 1	3 Category 2 : 34 Category 3 : 3 Category 4 : 4	4 Category 2 : 21 Category 3 : 4 Category 4 : 6	5 Category 2 : 52 Category 3 : 2 Category 4 : 3	6 Category 2 : 55 Category 3 : 2	7 Category 1 : 2 Category 2 : 17 Category 3 : 3	8 Category 2 : 1
9 Category 2 : 8 Category 4 : 1	10 Category 1 : 2 Category 2 : 42 Category 3 : 6 Category 4 : 3	11 Category 2 : 33 Category 3 : 6 Category 4 : 6	12 Category 2 : 55 Category 3 : 9 Category 4 : 1	13 Category 2 : 45 Category 3 : 6 Category 4 : 4	14 Category 2 : 16 Category 3 : 2 Category 4 : 4	15
16	17 Category 1 : 1 Category 2 : 33 Category 3 : 3 Category 4 : 2	18 Category 1 : 1 Category 2 : 38 Category 3 : 8 Category 4 : 4	19 Category 2 : 43 Category 3 : 1 Category 4 : 2	20 Category 1 : 2 Category 2 : 55 Category 3 : 4 Category 4 : 5	21 Category 2 : 19 Category 3 : 3 Category 4 : 3	22
23	24 Category 2 : 32 Category 3 : 4	25 Category 1 : 1 Category 2 : 34 Category 3 : 6 Category 4 : 1	26 Category 1 : 1 Category 2 : 29 Category 3 : 8 Category 4 : 6	27 Category 2 : 35 Category 3 : 2 Category 4 : 1	28 Category 2 : 24 Category 3 : 7 Category 4 : 2	29 Category 2 : 3
30 Category 2 : 1	31 Category 2 : 1					

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MY FLEET EVENTS

April 2008

S	M	T	W	T	F	S
		1 Category 1 : 1 Category 2 : 27 Category 3 : 5 Category 4 : 2	2 Category 1 : 2 Category 2 : 26 Category 3 : 4 Category 4 : 4	3 Category 2 : 60 Category 3 : 2 Category 4 : 3	4 Category 2 : 29 Category 4 : 6	5 Category 2 : 1
6	7 Category 2 : 25 Category 3 : 3 Category 4 : 5	8 Category 2 : 29 Category 3 : 3 Category 4 : 3	9 Category 2 : 8 Category 3 : 2 Category 4 : 3	10 Category 1 : 1 Category 2 : 40 Category 3 : 6 Category 4 : 4	11 Category 2 : 33 Category 4 : 1	12 Category 2 : 4 Category 3 : 1
13 Category 2 : 7 Category 4 : 1	14 Category 2 : 46 Category 3 : 2 Category 4 : 5	15 Category 1 : 1 Category 2 : 49 Category 3 : 6 Category 4 : 4	16 Category 2 : 43 Category 3 : 3 Category 4 : 3	17 Category 1 : 1 Category 2 : 18 Category 4 : 2	18 Category 2 : 17 Category 3 : 11 Category 4 : 1	19 Category 2 : 3 Category 3 : 1 Category 4 : 1
20 Category 2 : 1 Category 3 : 1 Category 4 : 3	21 Category 2 : 15 Category 3 : 1 Category 4 : 2	22 Category 2 : 43 Category 3 : 15 Category 4 : 3	23 Category 2 : 26 Category 3 : 5 Category 4 : 5	24 Category 1 : 2 Category 2 : 21 Category 3 : 4	25 Category 1 : 1 Category 2 : 12 Category 3 : 2 Category 4 : 1	26 Category 2 : 2
27 Category 2 : 4 Category 3 : 1	28 Category 2 : 24 Category 3 : 3 Category 4 : 2	29 Category 1 : 1 Category 2 : 26 Category 3 : 5	30 Category 2 : 38 Category 3 : 4 Category 4 : 3			

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MY FLEET EVENTS

May 2008

S	M	T	W	T	F	S
				1 Category 1 : 1 Category 2 : 28 Category 3 : 1 Category 4 : 3	2 Category 2 : 21 Category 3 : 1 Category 4 : 4	3 Category 2 : 2 Category 3 : 1
4	5 Category 1 : 1 Category 2 : 36 Category 3 : 2 Category 4 : 4	6 Category 1 : 1 Category 2 : 32 Category 3 : 7	7 Category 1 : 1 Category 2 : 17 Category 3 : 4 Category 4 : 1	8 Category 2 : 22 Category 3 : 3 Category 4 : 1	9 Category 2 : 26 Category 3 : 3	10
11	12 Category 1 : 2 Category 2 : 22 Category 3 : 8 Category 4 : 4	13 Category 1 : 1 Category 2 : 28 Category 3 : 3 Category 4 : 1	14 Category 1 : 1 Category 2 : 42 Category 3 : 1 Category 4 : 2	15 Category 2 : 16 Category 3 : 1 Category 4 : 2	16 Category 1 : 2 Category 2 : 26 Category 3 : 3 Category 4 : 4	17 Category 2 : 1
18 Category 3 : 1	19 Category 1 : 1 Category 2 : 29 Category 3 : 5	20 Category 1 : 2 Category 2 : 30 Category 3 : 3 Category 4 : 1	21 Category 2 : 34 Category 3 : 5 Category 4 : 4	22 Category 1 : 1 Category 2 : 20 Category 4 : 2	23 Category 2 : 10	24
25	26	27 Category 1 : 2 Category 2 : 23 Category 3 : 4 Category 4 : 4	28 Category 2 : 18 Category 4 : 1	29 Category 1 : 1 Category 2 : 8 Category 4 : 2	30 Category 2 : 9 Category 3 : 1 Category 4 : 1	31

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My Fleet Events
My Fleet Drivers
My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

June 2008

S	M	T	W	T	F	S
1 Category 2 : 1 Category 4 : 1	2 Category 2 : 24 Category 3 : 3	3 Category 2 : 34 Category 3 : 3 Category 4 : 2	4 Category 1 : 1 Category 2 : 25 Category 4 : 1	5 Category 2 : 41 Category 3 : 4 Category 4 : 5	6 Category 2 : 25 Category 3 : 2 Category 4 : 2	7 Category 2 : 1
8 Category 2 : 2 Category 4 : 1	9 Category 2 : 22	10 Category 2 : 38 Category 3 : 2 Category 4 : 1	11 Category 1 : 4 Category 2 : 39 Category 3 : 3 Category 4 : 1	12 Category 2 : 36 Category 3 : 2 Category 4 : 4	13 Category 1 : 1 Category 2 : 16	14
15	16 Category 2 : 19 Category 3 : 4 Category 4 : 2	17 Category 2 : 11 Category 4 : 2	18 Category 1 : 1 Category 2 : 45 Category 3 : 1 Category 4 : 2	19 Category 1 : 2 Category 2 : 29 Category 3 : 1	20 Category 2 : 13	21 Category 2 : 3
22	23 Category 1 : 2 Category 2 : 7	24 Category 2 : 15 Category 3 : 2	25 Category 1 : 1 Category 2 : 10 Category 3 : 3 Category 4 : 3	26 Category 1 : 1 Category 2 : 11	27 Category 1 : 1 Category 2 : 11 Category 3 : 1	28
29 Category 2 : 1	30 Category 2 : 14 Category 3 : 12 Category 4 : 2					

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My Flagged Events

MY FLEET EVENTS

July 2008

S	M	T	W	T	F	S
		1 Category 1 : 1 Category 2 : 29 Category 3 : 1 Category 4 : 1	2 Category 1 : 1 Category 2 : 20 Category 3 : 2 Category 4 : 3	3 Category 1 : 1 Category 2 : 21 Category 4 : 4	4	5
6	7 Category 2 : 15 Category 4 : 1	8 Category 2 : 13 Category 3 : 1 Category 4 : 1	9 Category 2 : 29 Category 3 : 1	10 Category 2 : 9	11 Category 2 : 7 Category 3 : 1 Category 4 : 1	12 Category 2 : 2 Category 3 : 1
13 Category 2 : 2 Category 4 : 1	14 Category 2 : 15 Category 4 : 3	15 Category 2 : 13 Category 3 : 1 Category 4 : 1	16 Category 2 : 17 Category 3 : 2	17 Category 1 : 1 Category 2 : 17 Category 3 : 3	18 Category 2 : 16	19 Category 2 : 9 Category 4 : 1
20 Category 2 : 5 Category 3 : 2	21 Category 1 : 1 Category 2 : 15 Category 3 : 2	22 Category 2 : 23 Category 3 : 2	23 Category 1 : 3 Category 2 : 24 Category 4 : 1	24 Category 1 : 2 Category 2 : 28	25 Category 2 : 24 Category 4 : 1	26
27 Category 2 : 5 Category 3 : 1	28 Category 1 : 1 Category 2 : 22 Category 3 : 2 Category 4 : 1	29 Category 1 : 2 Category 2 : 14	30 Category 2 : 14 Category 3 : 2 Category 4 : 1	31 Category 2 : 23 Category 4 : 2		

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My Fleet Drivers
My Fleet Vehicles
My Flagged Events

MY FLEET EVENTS

August 2008

S	M	T	W	T	F	S
					1 Category 1 : 2 Category 2 : 10 Category 4 : 1	2 Category 2 : 2
3 Category 2 : 2	4 Category 1 : 2 Category 2 : 20	5 Category 1 : 5 Category 2 : 18 Category 3 : 1	6 Category 1 : 1 Category 2 : 7 Category 3 : 3 Category 4 : 1	7 Category 2 : 18 Category 3 : 1 Category 4 : 1	8 Category 2 : 14 Category 3 : 2 Category 4 : 3	9
10 Category 2 : 1 Category 3 : 3	11 Category 1 : 2 Category 2 : 30 Category 3 : 5 Category 4 : 2	12 Category 1 : 5 Category 2 : 13 Category 3 : 4	13 Category 1 : 2 Category 2 : 38 Category 3 : 9 Category 4 : 3	14 Category 1 : 5 Category 2 : 32 Category 3 : 6 Category 4 : 1	15 Category 2 : 30 Category 3 : 6 Category 4 : 3	16 Category 2 : 1
17 Category 2 : 3	18 Category 1 : 3 Category 2 : 34 Category 3 : 8 Category 4 : 6	19 Category 1 : 3 Category 2 : 41 Category 3 : 5 Category 4 : 4	20 Category 1 : 3 Category 2 : 31 Category 3 : 2 Category 4 : 3	21 Category 1 : 5 Category 2 : 19 Category 3 : 1 Category 4 : 5	22 Category 1 : 5 Category 2 : 46 Category 3 : 6 Category 4 : 5	23
24 Category 1 : 1 Category 2 : 2	25 Category 1 : 3 Category 2 : 31 Category 3 : 12 Category 4 : 6	26 Category 1 : 6 Category 2 : 23 Category 3 : 4 Category 4 : 3	27 Category 1 : 1 Category 2 : 28 Category 3 : 5 Category 4 : 1	28 Category 2 : 22 Category 3 : 2 Category 4 : 1	29 Category 4 : 1	30
31						

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Sep 2007 To 01 Oct 2007 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	45	4	10	59
-REDACTED-	West	1	52	1	1	55
-REDACTED-	East	0	37	11	0	48
-REDACTED-	East	2	34	5	3	44
-REDACTED-	Surveys	0	42	0	1	43
-REDACTED-	East	0	17	13	5	35
-REDACTED-	Surveys	0	32	1	0	33
-REDACTED-	East	0	18	9	1	28
-REDACTED-	East	0	14	8	0	22
-REDACTED-	West	0	16	0	1	17
-REDACTED-	Surveys	0	15	0	0	15
-REDACTED-	West	0	7	7	1	15
-REDACTED-	East	2	8	4	1	15
-REDACTED-	Surveys	0	12	0	2	14
-REDACTED-	East	0	10	1	1	12
-REDACTED-	East	0	8	0	2	10
-REDACTED-	East	0	3	4	0	7
-REDACTED-	Surveys	0	6	0	0	6
-REDACTED-	Surveys	0	6	0	0	6
-REDACTED-	East	1	1	4	0	6
-REDACTED-	West	0	4	0	1	5
-REDACTED-	East	0	4	1	0	5
-REDACTED-	Surveys	0	4	1	0	5
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	Surveys	0	4	1	0	5
-REDACTED-	West	0	3	1	0	4
-REDACTED-	West	1	3	0	0	4
-REDACTED-	East	0	3	1	0	4

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	3	0	0	3
-REDACTED-	Surveys	0	2	0	1	3
-REDACTED-	West	0	2	1	0	3
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	East	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Oct 2007 To 01 Nov 2007 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	1	78	5	13	97
-REDACTED-	East	10	66	9	2	87
-REDACTED-	West	0	49	6	4	59
-REDACTED-	West	0	50	2	4	56
-REDACTED-	East	0	33	1	6	40
-REDACTED-	Surveys	0	39	0	0	39
-REDACTED-	East	1	32	1	1	35
-REDACTED-	East	2	17	5	0	24
-REDACTED-	West	0	16	5	2	23
-REDACTED-	West	2	18	2	1	23
-REDACTED-	West	0	13	1	2	16
-REDACTED-	Surveys	0	11	1	1	13
-REDACTED-	Surveys	0	9	1	1	11
-REDACTED-	East	1	8	1	1	11
-REDACTED-	West	0	7	2	1	10
-REDACTED-	Surveys	0	9	1	0	10
-REDACTED-	Surveys	0	6	1	1	8
-REDACTED-	East	0	5	1	0	6
-REDACTED-	Surveys	0	6	0	0	6
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	West	0	4	0	1	5
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	West	1	3	0	0	4
-REDACTED-	West	0	3	0	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	West	0	3	0	0	3

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	3	0	0	3
-REDACTED-	East	0	1	0	1	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	0	0	2	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	0	0	1	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	0	1	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Nov 2007 To 01 Dec 2007 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	43	4	7	54
-REDACTED-	East	5	43	3	0	51
-REDACTED-	East	3	43	0	2	48
-REDACTED-	Surveys	0	29	5	3	37
-REDACTED-	Surveys	0	20	1	2	23
-REDACTED-	East	0	12	2	7	21
-REDACTED-	East	0	15	3	0	18
-REDACTED-	West	0	7	2	3	12
-REDACTED-	Surveys	0	9	0	2	11
-REDACTED-	East	0	10	0	1	11
-REDACTED-	Surveys	0	8	1	1	10
-REDACTED-	West	0	4	1	2	7
-REDACTED-	West	0	6	1	0	7
-REDACTED-	West	0	5	1	0	6
-REDACTED-	East	0	5	0	1	6
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	West	1	1	2	0	4
-REDACTED-	West	0	4	0	0	4
-REDACTED-	West	0	2	0	1	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	West	0	2	1	0	3
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	West	0	2	0	1	3
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	East	0	2	0	1	3
-REDACTED-	West	0	1	1	0	2
-REDACTED-	Surveys	0	2	0	0	2

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	2	0	0	2
-REDACTED-	East	0	1	1	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	East	0	1	1	0	2
-REDACTED-	East	1	0	0	0	1
-REDACTED-	Surveys	0	0	1	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	0	0	0	0

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Dec 2007 To 01 Jan 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	2	40	6	3	51
-REDACTED-	Surveys	0	37	2	4	43
-REDACTED-	West	0	34	1	5	40
-REDACTED-	West	0	34	0	3	37
-REDACTED-	East	8	15	6	0	29
-REDACTED-	East	0	18	5	3	26
-REDACTED-	East	0	20	1	0	21
-REDACTED-	West	4	3	0	7	14
-REDACTED-	Surveys	0	10	0	3	13
-REDACTED-	Surveys	0	9	0	2	11
-REDACTED-	West	0	10	0	0	10
-REDACTED-	East	0	7	1	2	10
-REDACTED-	East	0	6	4	0	10
-REDACTED-	East	0	4	1	2	7
-REDACTED-	East	1	3	2	0	6
-REDACTED-	East	0	2	4	0	6
-REDACTED-	West	0	4	2	0	6
-REDACTED-	Surveys	0	3	2	0	5
-REDACTED-	West	0	3	1	0	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	West	2	1	0	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	East	0	2	0	1	3
-REDACTED-	East	0	2	1	0	3
-REDACTED-	West	0	1	0	2	3
-REDACTED-	West	0	3	0	0	3
-REDACTED-	Surveys	0	1	0	2	3

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	East	0	1	0	1	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	West	0	1	1	0	2
-REDACTED-	West	0	1	0	1	2
-REDACTED-	Surveys	0	0	0	2	2
-REDACTED-	East	0	0	0	2	2
-REDACTED-	West	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Jan 2008 To 01 Feb 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	51	19	21	91
-REDACTED-	West	1	55	3	7	66
-REDACTED-	East	0	13	1	1	15
-REDACTED-	East	4	10	1	0	15
-REDACTED-	West	0	7	5	0	12
-REDACTED-	Surveys	0	7	3	1	11
-REDACTED-	East	0	6	3	1	10
-REDACTED-	West	0	8	0	2	10
-REDACTED-	East	0	5	3	0	8
-REDACTED-	Surveys	0	5	1	1	7
-REDACTED-	East	0	5	1	0	6
-REDACTED-	Surveys	0	5	0	1	6
-REDACTED-	West	0	4	0	2	6
-REDACTED-	West	0	3	0	3	6
-REDACTED-	Surveys	0	4	1	1	6
-REDACTED-	West	0	4	1	0	5
-REDACTED-	Surveys	2	2	0	1	5
-REDACTED-	East	0	3	1	1	5
-REDACTED-	West	0	4	0	1	5
-REDACTED-	West	0	1	2	1	4
-REDACTED-	West	0	4	0	0	4
-REDACTED-	West	0	3	0	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	0	1	1	2
-REDACTED-	Surveys	0	1	1	0	2
-REDACTED-	East	1	1	0	0	2
-REDACTED-	East	0	1	1	0	2

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	1	0	1	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	Surveys	0	0	0	0	0

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Feb 2008 To 01 Mar 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	4	53	1	0	58
-REDACTED-	West	0	31	13	11	55
-REDACTED-	West	1	42	0	6	49
-REDACTED-	East	0	25	1	1	27
-REDACTED-	Surveys	0	18	1	2	21
-REDACTED-	Surveys	0	12	1	1	14
-REDACTED-	West	0	11	2	1	14
-REDACTED-	East	0	7	0	1	8
-REDACTED-	Surveys	0	5	0	1	6
-REDACTED-	Surveys	0	4	2	0	6
-REDACTED-	West	0	5	1	0	6
-REDACTED-	East	1	4	0	0	5
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	West	0	2	0	1	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	West	0	3	0	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	West	0	2	0	1	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	West	0	3	0	0	3
-REDACTED-	West	0	3	0	0	3
-REDACTED-	Surveys	0	2	0	1	3
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	0	2	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	1	1	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	1	0	1	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	0	1	0	1
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	0	0	1	1
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	0	0	0	0

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Mar 2008 To 01 Apr 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	46	8	8	62
-REDACTED-	Surveys	0	46	9	3	58
-REDACTED-	West	0	38	4	2	44
-REDACTED-	East	1	27	4	0	32
-REDACTED-	Surveys	0	19	1	5	25
-REDACTED-	Surveys	0	11	7	3	21
-REDACTED-	East	3	15	1	0	19
-REDACTED-	West	0	14	0	1	15
-REDACTED-	East	2	7	3	1	13
-REDACTED-	East	0	7	3	2	12
-REDACTED-	Surveys	0	9	0	1	10
-REDACTED-	Surveys	0	9	0	0	9
-REDACTED-	East	0	8	0	1	9
-REDACTED-	West	0	6	2	0	8
-REDACTED-	East	0	5	1	0	6
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	Surveys	1	3	0	0	4
-REDACTED-	West	0	4	0	0	4
-REDACTED-	East	0	3	0	1	4
-REDACTED-	East	0	3	0	1	4
-REDACTED-	Surveys	0	2	2	0	4
-REDACTED-	Surveys	0	3	0	1	4
-REDACTED-	West	1	2	1	0	4
-REDACTED-	West	1	1	1	0	3
-REDACTED-	Surveys	1	2	0	0	3

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	3	0	0	3
-REDACTED-	Surveys	0	2	1	0	3
-REDACTED-	East	0	1	0	2	3
-REDACTED-	West	0	3	0	0	3
-REDACTED-	East	0	2	1	0	3
-REDACTED-	East	1	1	0	0	2
-REDACTED-	East	0	1	1	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	0	1	0	1
-REDACTED-	East	0	0	0	1	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Apr 2008 To 01 May 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	60	12	17	89
-REDACTED-	West	0	57	4	11	72
-REDACTED-	East	6	37	22	5	70
-REDACTED-	East	0	20	0	0	20
-REDACTED-	Surveys	0	19	0	1	20
-REDACTED-	Surveys	0	17	0	2	19
-REDACTED-	Surveys	0	15	3	1	19
-REDACTED-	West	0	14	0	1	15
-REDACTED-	Surveys	0	10	1	0	11
-REDACTED-	Surveys	0	8	0	1	9
-REDACTED-	Surveys	0	8	0	0	8
-REDACTED-	East	1	5	1	1	8
-REDACTED-	East	0	8	0	0	8
-REDACTED-	Surveys	1	6	0	0	7
-REDACTED-	Surveys	0	7	0	0	7
-REDACTED-	East	0	5	0	0	5
-REDACTED-	Surveys	0	2	1	1	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	West	0	4	0	0	4
-REDACTED-	West	2	2	0	0	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	Surveys	0	1	2	1	4
-REDACTED-	East	0	3	1	0	4
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	West	0	4	0	0	4
-REDACTED-	Surveys	0	3	1	0	4
-REDACTED-	East	0	1	1	1	3
-REDACTED-	East	0	2	0	0	2

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	1	0	1	2
-REDACTED-	East	0	1	0	1	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	Surveys	0	0	0	2	2
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1

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SMARTDRIVE™
Drive Safe, Drive Smart.™

Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 May 2008 To 01 Jun 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	33	1	2	36
-REDACTED-	West	0	18	2	8	28
-REDACTED-	West	0	21	3	2	26
-REDACTED-	East	3	21	1	0	25
-REDACTED-	Surveys	3	19	1	1	24
-REDACTED-	Surveys	0	24	0	0	24
-REDACTED-	East	0	20	0	2	22
-REDACTED-	Surveys	4	11	1	2	18
-REDACTED-	East	0	8	1	3	12
-REDACTED-	Surveys	0	11	0	0	11
-REDACTED-	West	4	3	4	0	11
-REDACTED-	West	0	8	1	1	10
-REDACTED-	Surveys	0	6	1	1	8
-REDACTED-	Surveys	0	6	0	1	7
-REDACTED-	East	0	6	0	0	6
-REDACTED-	East	0	6	0	0	6
-REDACTED-	East	0	3	2	0	5
-REDACTED-	Surveys	1	4	0	0	5
-REDACTED-	East	0	4	1	0	5
-REDACTED-	Surveys	0	5	0	0	5
-REDACTED-	West	1	2	0	1	4
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	Surveys	1	2	0	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	Surveys	0	2	0	1	3
-REDACTED-	West	0	1	1	1	3
-REDACTED-	East	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	0	1	0	1
-REDACTED-	Surveys	0	0	0	1	1
-REDACTED-	East	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	0	0	0	0

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Jun 2008 To 01 Jul 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	60	2	0	62
-REDACTED-	West	0	48	3	3	54
-REDACTED-	East	3	27	14	4	48
-REDACTED-	West	0	24	4	0	28
-REDACTED-	Surveys	0	22	3	1	26
-REDACTED-	West	0	16	5	1	22
-REDACTED-	Surveys	0	17	1	0	18
-REDACTED-	East	0	18	0	0	18
-REDACTED-	West	3	14	0	1	18
-REDACTED-	Surveys	1	11	3	1	16
-REDACTED-	Surveys	0	14	0	1	15
-REDACTED-	Surveys	0	14	0	1	15
-REDACTED-	Surveys	2	12	1	0	15
-REDACTED-	Surveys	0	12	0	2	14
-REDACTED-	West	2	10	0	2	14
-REDACTED-	East	0	8	0	4	12
-REDACTED-	Surveys	0	8	0	1	9
-REDACTED-	East	1	8	0	0	9
-REDACTED-	East	2	4	1	1	8
-REDACTED-	Surveys	0	7	0	0	7
-REDACTED-	West	0	5	0	1	6
-REDACTED-	East	0	5	1	0	6
-REDACTED-	East	0	6	0	0	6
-REDACTED-	East	0	5	0	0	5
-REDACTED-	Surveys	0	4	0	1	5
-REDACTED-	Surveys	0	3	1	0	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	East	0	3	0	0	3
-REDACTED-	East	0	2	0	1	3

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	West	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	East	0	2	0	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	0	2	0	2
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	1	0	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	East	0	0	0	1	1
-REDACTED-	East	0	0	0	1	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Jul 2008 To 01 Aug 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	39	1	2	42
-REDACTED-	East	7	32	0	0	39
-REDACTED-	West	0	23	2	3	28
-REDACTED-	Surveys	0	25	1	1	27
-REDACTED-	East	0	16	3	1	20
-REDACTED-	Surveys	0	18	2	0	20
-REDACTED-	West	0	11	1	2	14
-REDACTED-	West	0	11	0	3	14
-REDACTED-	East	1	13	0	0	14
-REDACTED-	Surveys	0	10	0	1	11
-REDACTED-	Surveys	0	8	0	1	9
-REDACTED-	East	0	8	1	0	9
-REDACTED-	Surveys	1	7	0	1	9
-REDACTED-	East	0	7	0	1	8
-REDACTED-	East	0	6	1	0	7
-REDACTED-	Surveys	0	5	2	0	7
-REDACTED-	East	0	6	0	0	6
-REDACTED-	Surveys	0	4	0	0	4
-REDACTED-	East	0	4	0	0	4
-REDACTED-	Surveys	0	3	1	0	4
-REDACTED-	Surveys	0	2	0	2	4
-REDACTED-	East	0	3	0	1	4
-REDACTED-	East	0	3	0	0	3
-REDACTED-	East	0	2	1	0	3
-REDACTED-	Surveys	0	3	0	0	3
-REDACTED-	West	1	2	0	0	3
-REDACTED-	West	1	2	0	0	3
-REDACTED-	Surveys	1	2	0	0	3
-REDACTED-	Surveys	0	2	1	0	3

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	East	0	2	1	0	3
-REDACTED-	West	0	2	0	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	0	1	1	0	2
-REDACTED-	Surveys	0	1	1	0	2
-REDACTED-	Surveys	0	1	1	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	East	0	1	0	1	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	1	1	0	2
-REDACTED-	East	1	0	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	1	0	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	West	0	0	0	1	1
-REDACTED-	West	0	0	0	1	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1

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Corporation Name: CalTrans **Division Name: MAIN**

Driver Report from 01 Aug 2008 To 01 Sep 2008 for CalTrans

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	6	52	6	5	69
-REDACTED-	West	0	41	4	0	45
-REDACTED-	East	7	35	1	0	43
-REDACTED-	East	7	21	7	5	40
-REDACTED-	West	0	13	9	13	35
-REDACTED-	West	0	26	2	4	32
-REDACTED-	East	0	19	4	4	27
-REDACTED-	East	4	15	4	0	23
-REDACTED-	East	6	11	3	0	20
-REDACTED-	East	3	15	0	0	18
-REDACTED-	East	1	16	1	0	18
-REDACTED-	Surveys	0	13	1	2	16
-REDACTED-	East	1	5	8	1	15
-REDACTED-	West	0	11	2	1	14
-REDACTED-	East	0	9	1	2	12
-REDACTED-	East	1	8	2	1	12
-REDACTED-	Surveys	1	9	0	1	11
-REDACTED-	Surveys	1	8	2	0	11
-REDACTED-	Surveys	2	6	2	0	10
-REDACTED-	Surveys	1	7	1	1	10
-REDACTED-	Surveys	2	7	0	0	9
-REDACTED-	East	0	7	0	0	7
-REDACTED-	East	0	7	0	0	7
-REDACTED-	West	0	5	1	0	6
-REDACTED-	East	1	4	1	0	6
-REDACTED-	East	0	5	1	0	6
-REDACTED-	West	0	5	0	0	5
-REDACTED-	West	0	3	2	0	5

Driver Name	Division Name	Category 1	Category 2	Category 3	Category 4	Total
-REDACTED-	West	0	4	0	1	5
-REDACTED-	East	0	4	0	0	4
-REDACTED-	East	0	3	0	0	3
-REDACTED-	Surveys	0	1	2	0	3
-REDACTED-	East	0	3	0	0	3
-REDACTED-	Surveys	1	2	0	0	3
-REDACTED-	West	1	2	0	0	3
-REDACTED-	East	1	0	1	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	1	0	1	0	2
-REDACTED-	Surveys	0	2	0	0	2
-REDACTED-	Surveys	1	0	1	0	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	2	0	0	0	2
-REDACTED-	West	0	0	0	2	2
-REDACTED-	West	0	2	0	0	2
-REDACTED-	East	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	1	0	0	0	1
-REDACTED-	East	0	0	1	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	East	0	1	0	0	1
-REDACTED-	West	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	1	0	0	1
-REDACTED-	Surveys	0	0	0	0	0

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Aug 2007 To 01 Sep 2007

Cause	Frequency
Cause :Severity	
Category 4	22
Category 3	7
Category 2	101
Category 1	3
Cause :Unsafe and Improper	
Turn	1
Cause :Unprofessional Driving	
SmartDrive Tampering	14
Cause :Speeding	
In Excess- < 10 Miles Per Hour	72
In Excess- > 10 Miles Per Hour	3
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	2
Cause :Inattention	
Not Scanning Far Ahead	1
Not Checking Mirrors	1
Cause :Fatigue	
Yawning	2
Cause :Failure To	
Make Complete Stop at Stop Sign	1
Driver Seatbelt Unfastened	25
Cause :Distraction	
Cell Phone - Hand Held	6
Manifest, Map, Navigation	1
Other Work/Task	2
Loud Audio (Music or Talk)	24
Food	4

	Cause	Frequency
	Beverage	5
	From Passenger	1
	Smoking	2

16 Oct 2008 11:18 hrs

Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Sep 2007 To 01 Oct 2007

Cause	Frequency
Cause :Severity	
Category 4	126
Category 3	85
Category 2	490
Category 1	7
Cause :Unsafe and Improper	
Lane Change	1
Turn	4
Braking	1
Cause :Unprofessional Driving	
SmartDrive Tampering	87
Cause :Speeding	
In Excess- < 10 Miles Per Hour	343
In Excess- > 10 Miles Per Hour	8
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	10
Cause :Possible Collision	
With Curb	1
Cause :Inattention	
Not Scanning Intersection	1
Not Checking Mirrors	5
Cause :Fatigue	
Yawning	12
Cause :Failure To	
Make Complete Stop at Stop Sign	19
Make Complete Stop at Light	1
Maintain Lane Control	1
Driver Seatbelt Unfastened	75

	Cause	Frequency
	Passenger(s) Seat Belt Unfastened	1
-	Cause :Distraction	
	Cell Phone - Hand Held	80
	Manifest, Map, Navigation	1
	Other Work/Task	27
	Loud Audio (Music or Talk)	103
	Food	41
	Beverage	27
	Smoking	2

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Oct 2007 To 01 Nov 2007

Cause	Frequency
Cause :Severity	
Category 4	74
Category 3	56
Category 2	590
Category 1	18
Cause :Unsafe and Improper	
Lane Change	1
Passing	1
Merging	1
Turn	10
Braking	2
Cause :Unprofessional Driving	
SmartDrive Tampering	15
Cause :Speeding	
In Excess- < 10 Miles Per Hour	332
In Excess- > 10 Miles Per Hour	8
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	31
Cause :Professional Driving	
Captured hazardous roadway event	9
Cause :Possible Collision	
With Curb	3
Cause :Inattention	
Not Scanning Far Ahead	2
Not Checking Mirrors	3
Cause :Fatigue	
Yawning	23
Cause :Failure To	

	Cause	Frequency
	Make Complete Stop at Stop Sign	31
	Make Complete Stop at Light	1
	Maintain Lane Control	1
	Driver Seatbelt Unfastened	145
-	Cause :Distraction	
	Cell Phone - Hands free	7
	Cell Phone - Hand Held	53
	Manifest, Map, Navigation	3
	Other Work/Task	17
	Loud Audio (Music or Talk)	127
	Food	43
	Beverage	49
	From Passenger	1
	Smoking	12

16 Oct 2008 11:17 hrs

SMARTDRIVE™
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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Nov 2007 To 01 Dec 2007

Cause	Frequency
Cause :Severity	
Category 4	144
Category 3	36
Category 2	395
Category 1	11
Cause :Unsafe and Improper	
Turn	9
Braking	2
Cause :Unprofessional Driving	
SmartDrive Tampering	94
Cause :Speeding	
In Excess- < 10 Miles Per Hour	311
In Excess- > 10 Miles Per Hour	16
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	6
Cause :Possible Collision	
With Curb	1
Cause :Inattention	
Not Scanning Far Ahead	1
Not Scanning Intersection	1
Cause :Fatigue	
Yawning	23
Cause :Failure To	
Make Complete Stop at Stop Sign	27
Make Complete Stop at Light	1
Driver Seatbelt Unfastened	85
Cause :Distraction	
Cell Phone - Hands free	3

	Cause	Frequency
	Cell Phone - Hand Held	36
	Manifest, Map, Navigation	4
	Other Work/Task	8
	Loud Audio (Music or Talk)	22
	Food	37
	Beverage	37
	Smoking	9
	Grooming/Applying Make up	1

16 Oct 2008 11:17 hrs

SMARTDRIVE™
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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Dec 2007 To 01 Jan 2008

Cause	Frequency
Cause :Severity	
Category 4	384
Category 3	52
Category 2	359
Category 1	17
Cause :Unsafe and Improper	
Turn	38
Braking	1
Following Distance - Tailgating	2
Cause :Unprofessional Driving	
SmartDrive Tampering	338
Cause :Speeding	
In Excess- < 10 Miles Per Hour	310
In Excess- > 10 Miles Per Hour	15
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	14
Cause :Possible Collision	
With Curb	3
Cause :Fatigue	
Yawning	23
Cause :Failure To	
Attempt Stop at Stop Sign	1
Make Complete Stop at Stop Sign	34
Make Complete Stop at Light	1
Driver Seatbelt Unfastened	69
Cause :Distraction	
Cell Phone - Hands free	3
Cell Phone - Hand Held	39

	Cause	Frequency
	Manifest, Map, Navigation	4
	Other Work/Task	9
	Loud Audio (Music or Talk)	4
	Food	34
	Beverage	25
	Smoking	8

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SMARTDRIVE™
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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Jan 2008 To 01 Feb 2008

Cause	Frequency
Cause :Severity	
Category 4	496
Category 3	59
Category 2	337
Category 1	9
Cause :Unsafe and Improper	
Lane Change	2
Turn	49
Braking	1
Following Distance - Tailgating	6
Cause :Unprofessional Driving	
SmartDrive Tampering	587
Cause :Speeding	
In Excess- < 10 Miles Per Hour	292
In Excess- > 10 Miles Per Hour	28
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	7
Cause :Professional Driving	
Captured hazardous roadway event	1
Cause :Possible Collision	
With Fixed Object	1
With Another Vehicle	2
Cause :Inattention	
Not Scanning Far Ahead	4
Cause :Fatigue	
Yawning	26
Cause :Failure To	
Attempt Stop at Stop Sign	1

	Cause	Frequency
	Make Complete Stop at Stop Sign	38
	Make Complete Stop at Light	2
	Maintain Lane Control	1
	Keep With Direction of Traffic	1
	Driver Seatbelt Unfastened	43
-	Cause :Distraction	
	Cell Phone - Hands free	1
	Cell Phone - Hand Held	35
	Manifest, Map, Navigation	2
	Other Work/Task	8
	Loud Audio (Music or Talk)	20
	Food	18
	Beverage	25
	Smoking	2

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SMARTDRIVE™
Drive Safe, Drive Smart.™

Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Feb 2008 To 01 Mar 2008

Cause	Frequency
Cause :Severity	
Category 4	55
Category 3	39
Category 2	457
Category 1	6
Cause :Unsafe and Improper	
Passing	3
Turn	27
Following Distance - Tailgating	6
Cause :Unprofessional Driving	
SmartDrive Tampering	269
Cause :Speeding	
In Excess- < 10 Miles Per Hour	340
In Excess- > 10 Miles Per Hour	28
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	8
Cause :Possible Collision	
With Curb	3
Cause :Inattention	
Not Scanning Far Ahead	4
Cause :Fatigue	
Yawning	20
Cause :Failure To	
Make Complete Stop at Stop Sign	27
Make Complete Stop at Light	1
Maintain Lane Control	3
Keep With Direction of Traffic	1
Driver Seatbelt Unfastened	34

	Cause	Frequency
−	Cause :Distraction	
	Cell Phone - Hands free	5
	Cell Phone - Hand Held	28
	Manifest, Map, Navigation	3
	Other Work/Task	16
	Loud Audio (Music or Talk)	38
	Food	40
	Beverage	30

16 Oct 2008 11:16 hrs

Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Mar 2008 To 01 Apr 2008

Cause	Frequency
Cause :Severity	
Category 4	61
Category 3	94
Category 2	758
Category 1	11
Cause :Unsafe and Improper	
Lane Change	8
Passing	2
Merging	1
Turn	22
Following Distance - Tailgating	16
Cause :Unprofessional Driving	
Rude Hand Jesture	1
SmartDrive Tampering	691
Cause :Speeding	
In Excess- < 10 Miles Per Hour	683
In Excess- > 10 Miles Per Hour	18
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	6
Cause :Possible Collision	
With Curb	1
Cause :Inattention	
Not Scanning Far Ahead	1
Cause :Fatigue	
Yawning	28
Cause :Failure To	
Make Complete Stop at Stop Sign	47
Maintain Lane Control	12

	Cause	Frequency
	Driver Seatbelt Unfastened	73
−	Cause :Distraction	
	Cell Phone - Hands free	2
	Cell Phone - Hand Held	38
	Other Work/Task	16
	Loud Audio (Music or Talk)	29
	Food	46
	Beverage	78
	Smoking	5

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Apr 2008 To 01 May 2008

Cause	Frequency
Cause :Severity	
Category 4	70
Category 3	91
Category 2	705
Category 1	11
Cause :Unsafe and Improper	
Lane Change	4
Turn	24
Braking	2
Following Distance - Tailgating	38
Cause :Unprofessional Driving	
SmartDrive Tampering	672
Cause :Speeding	
In Excess- < 10 Miles Per Hour	584
In Excess- > 10 Miles Per Hour	30
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	20
Cause :Possible Collision	
With Curb	1
Cause :Inattention	
Not Scanning Far Ahead	4
Cause :Fatigue	
Yawning	20
Cause :Failure To	
Make Complete Stop at Stop Sign	39
Attempt Stop at Stop Light	2
Make Complete Stop at Light	2
Maintain Lane Control	6

	Cause	Frequency
	Driver Seatbelt Unfastened	42
-	Cause :Distraction	
	Cell Phone - Hands free	8
	Cell Phone - Hand Held	42
	Manifest, Map, Navigation	3
	Other Work/Task	20
	Loud Audio (Music or Talk)	26
	Food	51
	Beverage	44
	Smoking	10
	Grooming/Applying Make up	2

16 Oct 2008 11:15 hrs

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 May 2008 To 01 Jun 2008

Cause	Frequency
Cause :Severity	
Category 4	42
Category 3	57
Category 2	501
Category 1	17
Cause :Unsafe and Improper	
Lane Change	2
Passing	1
Merging	1
Turn	11
Following Distance - Tailgating	8
Cause :Unprofessional Driving	
SmartDrive Tampering	332
Cause :Speeding	
In Excess- < 10 Miles Per Hour	416
In Excess- > 10 Miles Per Hour	17
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	14
Cause :Possible Collision	
With Fixed Object	1
Cause :Inattention	
Not Scanning Far Ahead	1
Cause :Fatigue	
Yawning	28
Cause :Failure To	
Make Complete Stop at Stop Sign	35
Make Complete Stop at Light	1
Maintain Lane Control	1

	Cause	Frequency
	Driver Seatbelt Unfastened	65
	Passenger(s) Seat Belt Unfastened	2
-	Cause :Distraction	
	Cell Phone - Hands free	5
	Cell Phone - Hand Held	21
	Manifest, Map, Navigation	2
	Other Work/Task	7
	Loud Audio (Music or Talk)	16
	Food	22
	Beverage	27
	Smoking	21

16 Oct 2008 11:15 hrs

Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Jun 2008 To 01 Jul 2008

	Cause	Frequency
	Cause :Severity	
	Category 4	30
	Category 3	44
	Category 2	522
	Category 1	15
	Cause :Unsafe and Improper	
	Lane Change	6
	Passing	1
	Merging	2
	Turn	12
	Following Distance - Tailgating	27
	Cause :Unprofessional Driving	
	SmartDrive Tampering	57
	Cause :Speeding	
	In Excess- < 10 Miles Per Hour	331
	In Excess- > 10 Miles Per Hour	3
	Cause :SmartDrive Camera/System	
	Unnecessary Use of Panic Button	8
	Cause :Possible Collision	
	With Fixed Object	2
	Cause :Fatigue	
	Yawning	44
	Cause :Failure To	
	Make Complete Stop at Stop Sign	12
	Maintain Lane Control	4
	Driver Seatbelt Unfastened	78
	Passenger(s) Seat Belt Unfastened	4
	Cause :Distraction	

	Cause	Frequency
	Cell Phone - Hand Held	35
	Manifest, Map, Navigation	2
	Other Work/Task	21
	Loud Audio (Music or Talk)	20
	Food	52
	Beverage	17
	Smoking	15

16 Oct 2008 11:15 hrs

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Jul 2008 To 01 Aug 2008

Cause	Frequency
Cause :Severity	
Category 4	24
Category 3	24
Category 2	441
Category 1	15
Cause :Unsafe and Improper	
Lane Change	1
Turn	3
Following Distance - Tailgating	3
Cause :Unprofessional Driving	
SmartDrive Tampering	104
Cause :Speeding	
In Excess- < 10 Miles Per Hour	319
In Excess- > 10 Miles Per Hour	8
Cause :SmartDrive Camera/System	
Unnecessary Use of Panic Button	4
Cause :Possible Collision	
With Fixed Object	1
Cause :Fatigue	
Yawning	23
Cause :Failure To	
Make Complete Stop at Stop Sign	13
Make Complete Stop at Light	1
Maintain Lane Control	4
Keep With Direction of Traffic	1
Driver Seatbelt Unfastened	57
Passenger(s) Seat Belt Unfastened	3
Cause :Distraction	

	Cause	Frequency
	Cell Phone - Hands free	2
	Cell Phone - Hand Held	30
	Manifest, Map, Navigation	3
	Other Work/Task	14
	Loud Audio (Music or Talk)	25
	Food	22
	Beverage	28
	Smoking	2

16 Oct 2008 11:14 hrs

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Corporation Name: CalTrans Division Name: MAIN

Cause Analysis Report from 01 Aug 2008 To 01 Oct 2008

Cause	Frequency
Cause :Severity	
Category 4	50
Category 3	85
Category 2	516
Category 1	54
Cause :Unsafe and Improper	
Lane Change	4
Passing	3
Turn	115
Following Distance - Tailgating	9
Cause :Unprofessional Driving	
SmartDrive Tampering	156
Cause :Speeding	
In Excess- < 10 Miles Per Hour	170
In Excess- > 10 Miles Per Hour	27
Cause :Fatigue	
Yawning	34
Cause :Failure To	
Make Complete Stop at Stop Sign	63
Attempt Stop at Stop Light	1
Make Complete Stop at Light	2
Maintain Lane Control	5
Driver Seatbelt Unfastened	81
Cause :Distraction	
Cell Phone - Hands free	6
Cell Phone - Hand Held	55
Manifest, Map, Navigation	4
Other Work/Task	42

	Cause	Frequency
	Loud Audio (Music or Talk)	24
	Food	82
	Beverage	58
	Smoking	6
	Grooming/Applying Make up	1