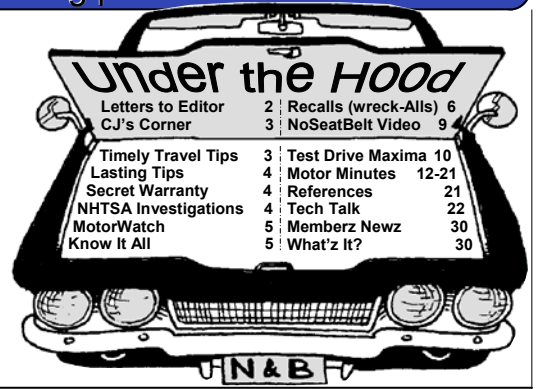





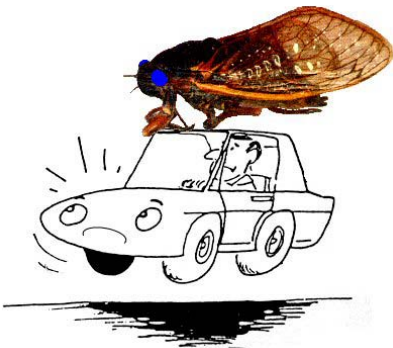
America's Consumer Technical Travel & Transportation Newzletter




Car Care Tips



 **The spare tire** is the one tire in the car that requires the most air. When the tires are aired up, always inflate the spare a few pounds more than the other tires because it is likely to be the most neglected. Putting some extra air in the spare will help insure that it isn't flat when needed.



 **The 17-year Cicada** is expected to return to the northeastern US states this summer and will cost many car owners significant damage to their vehicle's paint finishes. Vehicles parked in the vicinity of trees being attacked by Cicadas will be exposed to droppings from these large insects. The Cicadas suck tree sap. Their fecal droppings—combined with moisture in the air—cause damage to the vehicle's paint finish on all upward facing panels such as the roof, hood, and trunk.

Unless removed by the owner with a pressure sprayer washer, the Cicada droppings can lodge in seams, and build up in the vehicles' joints and crevices. The best advice is to not park in the vicinity of trees. If it can't be avoided, be sure to use a car cover.

LifeSaver Award



THE TECHNOLOGY

It had to happen as history marches along. Technology eventually catches up with safety allowing the future to be anticipated and perhaps preventing it from becoming a reality. This technology has the ability to record what is taking place and then examine the details to determine what precisely transpired.

Event Data Recorders (EDR) have been around since the early 70's as the "black box" recorder buried inside an aircraft tail section. The device records the audio from the cockpit and documents the reading on important gauges during the final 30 minutes before a crash. Officials can then establish events that occurred leading up to the crash.

Modern aircraft utilize several EDRs placed in strategic places around the aircraft. More sophisticated than their early predecessors, the modern aircraft EDR measures and records hundreds of parameters. The result has been tantamount in helping investigators uncover the causes of aircraft crashes.

In the early 90's, EDR's made their debut on domestic vehicles. Data gathered a few seconds before, during, and just after a crash severe enough to deploy the airbag is stored in the airbag computer. Depending on the sophistication of the vehicle and number of sensors available, data about vehicle speed, seatbelt use, braking, steering wheel angle, and deceleration forces became available for post-crash examination.



Continued on page 8

(LifeSaver Award continued from page 1)

ABOUT DRIVECAM

In 1998, the company DriveCam (originally known as I-Witness) was formed. It was inspired by Gary Rayner after an incident he experienced driving in San Bernardino, California when an enraged motorist threw a brick through the windshield. As an engineer and inventor, the incident inspired Rayner to build a device that could capture an event experienced by a driver.

DriveCam has continued to expand its products and services, introducing the *HindSight 20/20 Driving Performance Evaluation* software in 2001. DriveCam's Fleet Safety Services, including the DriveCam Academy and DriveCam Protected Certification, were added in 2002. In addition, DriveCam has received four patents for its innovative design.

HOW DRIVECAM WORKS

The DriveCam video event data recorder is the heart of the complete Driving Feedback System that has been demonstrated to improve driving safety and reduce operating costs for commercial fleets. Driver education offers a three-part approach: *hardware, software, and education.*

DriveCam is a palm-sized video recorder that monitors driving activity and records sights and sounds inside and outside a vehicle. When a triggering "event" happens - an accident, hard acceleration, stop, or turn - the images and sounds are stored to be later downloaded and analyzed to determine what happened. The recorded data video display has a date and time stamp. The USB port on the unit connects to a computer allowing management personnel to view and analyze the driving events and/or driving performance.

The DriveCam unit is mounted inside the vehicle in the center of the windshield. A forward facing lens gives a wide field of vision while a microphone picks up sounds inside and outside the vehicle. A second, optional lens with a 120-degree field of vision views the vehicles interior. A panic button (red button on the bottom of the unit) allows the driver to manually activate it.



BENEFACTORS

More than 200 fleets have installed DriveCam. The DriveCam recorder in these vehicles captures accidents and/or any sharp jolt. The digital recording is used by managers, who are trained and certified to monitor drivers using Hindsight 20/20 software. This enables management to determine how alert their drivers really are. DriveCam's Fleet Safety Services also provide complete safety programs for commercial fleets.



By recording and viewing the driver's behavior, DriveCam encourages the reduction of erratic driving. This decreases the frequency and severity of collisions, resulting in less bodily injury. At the same time, it lowers liability costs, speeds insurance processing and reduces fleet operation and maintenance costs. The Hindsight 20/20 software makes it possible for recorded events to be emailed directly to insurance carriers to help facilitate claim settlement.

Using Hindsight 20/20 software, DriveCam records images and sounds into a digital looping memory buffer. It typically records for 10 seconds before re-setting itself and repeating the sequence. Once triggered, it saves another 10 seconds following the trigger point, creating and saving a 20 second event that not only shows what happened, but shows why it happened.

The DriveCam unit is always on when the vehicle is operating. It's camera and microphone can capture multiple incidents in color and with sound. Sensitivity of the trigger sensors can be adjusted to record and "save" such events as rapid acceleration or braking, a bump, a hard turn, jerky driving, jackrabbit starts, hard braking—or anything else that produces significant G-forces—such as a jolt or collision. It can also be triggered by a bump—for instance if a heavy passenger fell in the door while loading.

REWARDS

The largest airport shuttle service in San Diego used DriveCam to prove that one of its drivers was not at fault in an accident. After viewing the video of the accident that was recorded, a

DriveCam units are being used right now on nearly 8,000 commercial vehicles — from cable TV trucks to airport parking buses:

- Empire International Ltd., the third largest provider of chauffeured transportation in the US, has reduced collisions by 62% since protecting 350 vehicles in its fleet with the DriveCam Driving Feedback System.
- REMSA, a fast growing emergency services provider, is now running less than 0.4 accidents per 100,000 miles driven for its entire fleet since implementing the DriveCam program.
- Cloud 9 Shuttle experienced a 47% reduction in collisions and saved \$10,000 a month in operating expenses in the first year of using the DriveCam program.
- Time Warner Cable reduced preventable collisions by 41% using the DriveCam program. In addition, the company experienced a more than five times increase in positive call-ins for its Driver Awareness Program.
- Ampco System Parking, a leader in parking management systems, installed the DriveCam Driving Feedback System in 320 vehicles. Without making any other changes, at fault collisions were reduced by 56% in one year.

highway patrol officer went back and changed his report.

- A driver for a large ambulance company in San Francisco was involved in a multi-vehicle collision. At first, the driver was partially blamed for the incident, with an estimated settlement cost of \$8,000. However, the DriveCam recording clearly showed that the driver was not at fault.
- A Burbank, California express limousine service used DriveCam to help uncover fraud. In the summer of 2001, the limo company became a victim of a common insurance scam where criminals stage a collision involving two or more vehicles and then make false claims for damage and injuries. The video helped the police nab the perpetrators. (See *MotorMinutes* page 15 "Event Data Recorders")
- A large ambulance company in San Francisco realized the importance of a smooth ride for transporting critically ill patients. The company adjusted the trigger sensitivity to its lowest setting on all DriveCam units in order to record erratic driving behaviors. Since using DriveCam, the recorded number of erratic driving events have decreased significantly.

COST

The DriveCam program including software licensing and training cost approximately \$1,000. This is very reasonable when you consider that the economic costs of motor vehicle crashes to employers are staggering. In the time period between 1998—2000, injuries on and off the job cost employers almost \$60 billion a year. Some \$16.3 billion of the employer costs were for health-related fringe benefits, \$8.6 billion were for sick leave, life and disability insurance, and another \$7.7 billion were for actual medical costs.

Studies have shown that fleets operated by safe drivers can reduce annual fuel consumption by an average of 18% per year and reduce maintenance expenses by 20%. These studies also indicate the benefits of added vehicle life expectancies of 1-3 years. But, best of all, DriveCam produces an average 45% reduction in accidents.

A bump or other input triggers the DriveCam accelerometer sensor(s) — activating its buffer to store the last 10 seconds of data into memory. Then it records for another 10 seconds. When the vehicle is returned, the manager uses the Hindsight 20/20 software to play the 20-second video in order to see what triggered the DriveCam event data recorder. The video shows the vehicle driven at high speed over a speed bump.

Nutz and Boltz has posted this eye-opening video on our website for safety reasons (see *noseatbelt.avi* video at www.motorwatch.com). We believe that just seeing it will motivate drivers and occupants of motor vehicles to use their seat belts.

The video also tells another story. Driving while drowsy causes 100,000 police-reported crashes, 1,550 deaths, 71,000 injuries, and \$12.5 billion in monetary losses every year. You can clearly see how a short micro-sleep can rapidly turn into a disaster as the car

rolls over only a few seconds after the camera records the driver nodding off.

According to NHTSA, the two most effective countermeasures in reducing the economic

burden caused by vehicle crashes are increased seatbelt use and to eliminate driving under the influence (DUI).

The staff at Nutz and Boltz believe the DriveCam video system is an excellent weapon in the fight against DUI and will serve to remind drivers to buckle their seatbelt. And we also believe that continuous driver monitoring offers the best form of feedback for driver self-improvement.

Wearing seatbelts and driving totally aware of our surroundings are integral parts of saving lives. Since the major mission of Nutz and Boltz is to provide safety information to both our members—as well as the motoring public—we created the LifeSaver Award.



We give this award to the person, place, or thing that helps further our mission. This year, 2004, we bestow the LifeSaver Award to DRIVECAM for bringing life saving technology to our automotive world.

For more info: www.DriveCam.com 866-419-5861



THE LIFESAVER AWARD

On May 17, 2003 a video from a DriveCam camera captured an unbelted driver falling asleep at the wheel. The video, called *noseatbelt.avi* shows a driver fall asleep, lose control, roll the car, get tossed out of his seat, and break out the right rear car window glass with his head.

Without permission, a copy of the *noseatbelt.avi* video leaked out of the company that was operating the DriveCam unit that recorded it. While the company doesn't give permission, its distribution has become so widespread they aren't able to halt it.



CAPTURED SECONDS

Freeze Frame No.	Elapsed Seconds
1. The driver nods off.	1 – 10
2. The driver loses control.	10 – 14
3. Driver is thrown out of his seat.	14 – 15
4. Driver is thrown to the rear of the passenger compartment.	15 – 16
5. His head shatters glass window.	16 – 17
6. Driver's outcome?	18 – 20

The freeze-frames shown above look pretty bad. Did the driver get killed when the car rolled? Was his head crushed—or decapitated when it went out the window? You'll find the answer at www.motorwatch.com

These photos did not come from DriveCam Inc.