

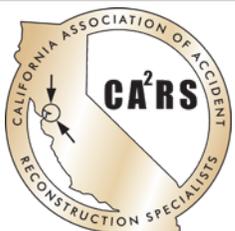
SKIDEMARKS

THE OFFICIAL PUBLICATION OF THE CALIFORNIA ASSOCIATION OF ACCIDENT
RECONSTRUCTION SPECIALISTS



TRAVELING AT THE SPEED OF LIFE

do we move about at an unsafe speed for daily conditions?



VOL. 19, NO. 3

SEPTEMBER 2017

CA2RS.com



We are preparing to wrap up the 2017 calendar year as we approach the Annual Conference in Anaheim. We look forward to another great year as we begin to plan for 2018.

We had a successful 3rd quarter training presented by Dan Vomhof III in August. He split the training day into morning and afternoon sessions. Dan's morning session was about crush: crush measurement, stiffness values, and force balance with practical applications. In the afternoon, Dan covered traffic signal timing plan elements, basics in deciphering traffic signal timing plans, and steps to determine "who had the green" through case examples.

The 2017 Annual Conference is fast approaching and will be held from October 26th through the 28th. We will again be in Southern California at the Embassy Suites, located at 400 North State College Boulevard in the City of Orange. The ACTAR examination will be on October 25, the day prior to the conference.

Topics at this year's conference will include motorcycle accident reconstruction and dynamics, rollover reconstruction, Toyota AEB and Techstream demonstration and download analysis, roadway drag factor evaluation, critical speed yaw (CSY) analysis, and CA2RS Motorcycle Crash Test review.

Presenters will include David King, Steve Anderson and Cole Young of MEA Forensic, Jeff Bell of the California Highway Patrol (CHP), Lou Peck of Lightpoint Scientific and Dial Engineering, and Bill Focha of North Coast Truck Inspections.

Also prior to the conference will be a class presented by Rich Consulting on "Using Microsoft Excel for Traffic Crash Reconstruction".

Since we are always seeking topics of interest to the membership, let us know what your thoughts and ideas may be.

John Crews
CA2RS Board of Directors

— John

CONTACTS

CHAIRPERSON
CHRIS KAUDERER
chairperson@ca2rs.com

VICE-CHAIR
JAHNA BEARD RINALDI
vice-chair@ca2rs.com

MEMBERSHIP
JOHN CREWS
membership@ca2rs.com

LIAISON TO ACTAR
LOUIS PECK
ACTAR@ca2rs.com

TREASURER
NICHOLE HANLEY
treasurer@ca2rs.com

NEWSLETTER
TIM NEUMANN
editor@ca2rs.com

BOARD OF DIRECTORS

ROMAN BECK

DAVID CAMERON

JOHN CREWS

BILL FOCHA

SEAN SHIMADA



Mansfield Bars On Trucks Aren't All Terrifying Garbage Anymore



Underride bars, or “Mansfield bars,” as they’re more popularly known, got their epithet from one of Hollywood’s more gruesome car crashes. They seemed to have actually been mostly cosmetic for many years, but lately it looks like there have been huge improvements made to stop you from getting scalped.

The IIHS announced yesterday that it was awarding five semi-trailer manufacturers its new TOUGHGUARD award for enhancing the safety of underride bars. These bars perform a hell of a lot better than they used to.

Mansfield bars got their name from legendary actress Jayne Mansfield, who was tragically killed in an incident in which the car she was in slammed into the rear of the truck in front of it. These sorts of collisions are particularly not for the squeamish, as the *Snopes* description of Mansfield’s death details (WARNING: feel totally free to scroll past this bit, trust me on this one):

The precise nature of the injuries inflicted in this accident would not usually bear thinking about, but rumors about the death of one of the passengers was turned into the stuff of contemporary lore when it became “common knowledge” that Jayne Mansfield had been decapitated. It is because this belief is as widespread as it is that this topic merits study, and it is due to the nature of the rumor that the discussion needs to be as detailed as it does.

Although Mansfield’s actual mode of death was gruesome, she was not beheaded. According to the police report on the accident, “the upper portion of this white female’s head was severed.” Her death certificate notes a “crushed skull with avulsion (forcible separation or detachment) of cranium and brain.” One thinks of a beheading as the neck’s being sliced through, causing the head to be separated from the body, but that is clearly not what happened here. Scalping is perhaps a closer description of Mansfield’s fate, but even that word does not accurately reflect the cranial trauma she suffered, because scalping victims at least retain an intact skull. The Angel of Death did not afford Mansfield this luxury: Her skull was cracked or sliced open, and a sizeable piece of it was carried away.



Even though Mansfield died in 1967, and the federal government mandated the bars that bear her name shortly after, most of them didn’t actually do much of anything, as the IIHS pointed out three years ago. And all of this wasn’t just for some gruesome tales or chilling video, as the IIHS points out.

In 2015, 427 of the 2,646 passenger vehicle occupants killed in large truck crashes died when the fronts of their vehicles struck the back of trucks. That is up 39 percent from 2011 when 260 of the 2,241 passenger vehicle occupants killed in large truck crashes died in impacts with the rear of a large truck. Gaps in federal crash data make it difficult to pinpoint exactly how many of these crashes involve underride.

In a 2012 IIHS study of fatal crashes between large trucks and passenger vehicles, an estimated 15 percent involved the rear of the truck. An IIHS analysis of a smaller sample of fatal crashes found that 82 percent involving the rear of the truck produced underride.

But once the bars started getting a little bit of publicity from the IIHS, it looks like their makers have finally gotten around to fixing some of the problem.

Now we just need similar equipment for the sides of semi-trailers.

Stiffness Coefficients & Traffic Signals

presented by Dan Vomhof, III

On two warm late-summer days, Daniel Vomhof (often self-referred to as DV3) of 4N6XPRT Systems presented in Glendora and Alameda. Almost 100 members attended the two training sessions. The Glendora Police Department once again provided us an excellent training location with plenty of room, air conditioning and coffee. DV3 discussed many aspects of determining stiffness coefficients as part of determining delta-V and impact speeds.

Right from the outset, Dan made it clear that crush measurements do not have to be taken in equally-spaced intervals, but rather at "inflection points." Although he believes that the Tumbas Protocol is still valid, Dan has developed his own (with an emphasis on consistent use of whichever protocol the investigator relies on). After discussing the differences between free space and air gap (and the importance of removing free space from calculations and always measuring to the bumper bar), the Glendora attendees took a short break to watch the eclipse. Thankfully, a few people brought those special sunglasses to share.

Dan recognized that there are many sources for "free" stiffness coefficients, but made the salient argument that the free stuff often becomes expensive in time lost to make it useful for a case. His StifCalcs program isn't free, but will give the investigator a useful and time-saving database for front, rear and side stiffness coefficients. After discussing pole impacts and John Daily's work on the subject, Dan suggested that investigators use 60% of the Crush Factor. He noted a general trend that vehicles are getting stiffer, which makes staying up to-date on crash testing so important. Another point that Dan clearly presented is that BEV is not the same as delta-V. When using the force-balance method, Dan emphasized using the maximum (rather than average) crush factor.

After lunch, Dan talked about traffic signals and the importance of having at least two signal heads (should one fail) as well as the different types of signals: fixed time, semi-actuated, and fully actuated. This discussion included examples and locations where such different types would be expected. Dan provided excellent Power Point presentations, which provided definitions of key terms. He also presented examples of signals that don't meet vertical view requirements (not only can traffic signals be installed too high, they can also create confusion when intersections are close together. Dan then discussed reading timing sheets.

Case studies involved a skateboarder in the King case, and a pedestrian in the Eskildson file. Both cases involved traffic signal phasing factors. Although witness statements are often unreliable, Dan presented a case wherein the witnesses had correct observations, despite the fact their orientation was off. The presentation was lively and engaging, resulting in many questions and thoughts by the audience.

Review courtesy of Roman Beck





13C	23Na	24Mg	31P	32S	34S	39K	43Ca	44Ca	55Mn	56Fe	57Fe	63Cu	64Zn	65Cu
0	8871	294700	0	133	4901	3067	3801	170100	131	1117	1000	8471	267	67
341	8671	292300	0	0	4001	2867	3734	172500	1500	8004	1200	10070	67	67
383	8337	280700	0	67	5001	3601	3201	165900	1400	12610	1000	8471	267	67
325	8938	287700	133	0	4101	4858	3201	168300	900	8804	1200	10070	67	67
367	8270	283400	0	0	4001	3867	4201	164900	900	8004	1267	8671	333	133
309	8738	281100	67	0	3201	2667	2667	173500	800	8704	1000	8804	133	0
301	9138	285700	0	0	5201	3467	3801	173500	1200	8604	1200	9872	67	67
393	7670	288100	0	0	4401	3734	3067	171800	1000	10210	467	9071	333	200
335	7803	285500	67	67	2900	3134	4601	166500	1500	10210	1000	10870	67	133
318	5668	365300	1133	133	2300	2200	3067	440300	3000	7303	467	8804	0	0
309	5402	362800	333	0	2100	3134	3934	434400	4301	7803	667	7603	400	67
301	5135	358600	733	400	2400	2934	2000	420300	2600	7703	267	6803	333	200
343	5201	372700	1133	133	2200	3401	3201	442100	2200	9205	467	8804	133	200

UPCOMING COURSE OFFERING

Using Microsoft Excel for Traffic Crash Reconstruction

When: Monday, October 23 - Wednesday, October 25, 2017

Where: Anaheim Police Department East Station
8201 E Santa Ana Canyon Road
Anaheim, CA 92808

Cost: \$475

This class is now open for member or non-member enrollment. This class will be held the three days prior to the 2017 CA2RS Fall Conference. Reduced hotel rates are available and the CA2RS Fall Conference Host Hotel. Space is limited.

Class registration link: [click here](#):

Embassy Suites Anaheim Orange reservations: [click here](#)

Hotel: Embassy Suites by Hilton Anaheim Orange
400 North State College Boulevard
Orange, CA 92868

Rates available until the group block is sold out

Hosted by CA2RS



Course pre-approved for 24 ACTAR CEUs

Side Underride Crashes Kill 200 People a Year. Will Congress Act?

Ronan Farrow, Rich McHugh and Tracy Connor / NBC News / February 17, 2017



Durso started researching the side guards and came to a heart-breaking conclusion— if the truck her daughter's car collided with had been equipped with them, she would still be alive.

It's one of the most devastating traffic accidents: A car slams into the side of a tractor-trailer and crashes underneath, where many of its safety features are rendered worthless. The top of the vehicle may be sheared off; in many cases, the occupants are decapitated.

Government statistics show that more than 200 people are killed this way every year – gruesome deaths that experts say could be prevented if trucks were required to have side guards to deflect cars.

The federal agency in charge of highway safety requires guards on the back of trucks, but not along the sides. And key lawmakers who have together received millions of dollars in campaign donations from the transportation industry haven't pushed for it, despite a recommendation from the National Transportation Safety Board.

"If there was a plane crash and 200 people died – the government would be all over that," said Lois Durso, whose 26-year-old daughter, Roya Sadigh (pictured left), was killed in what's known as a side underride crash.

Sadigh and her fiancé were driving during a snowstorm in Indiana in 2005 when they lost control. The car spun out, ended up under a tractor-trailer and was run over by its rear wheels. "My daughter didn't make it to the hospital," Durso said.

A year later, on a visit to Europe with her younger daughter, Durso glanced out a bus window and noticed something about all the trucks whizzing by. "They all had side guards," she said.

Durso started researching the side guards and came to a heart-breaking conclusion: If the truck her daughter's car collided with had been equipped with them, she would still be alive.

"I was very angry – with the trucking manufacturers and also the federal government," she said. "They're fully aware people are dying as a result of their trailer design. And yet they do nothing about it."

John Lannen, executive director of the Truck Safety Coalition, agrees. "I think side guards would have saved her life in that crash," he said.

The Truck Trailer Manufacturers Association, a trade association, noted the minimum standards for the side guards required in Europe target lower-force collisions involving pedestrians and cyclists, not cars – although safety experts say the guards do prevent some automobile injuries and deaths.

The catastrophic impact of underride crashes was highlighted in May, when a self-driving Tesla hit a blueberry hauler in Florida, [killing the 40-year-old occupant](#). But the danger has been well known for decades.

It was Hollywood bombshell (right) Jayne Mansfield's death on a Louisiana highway nearly 50 years ago sparked the first calls for rear and side protection. But it wasn't until 1998 that the National Highway Traffic Safety Administration (NHTSA) mandated rear guards – known as Mansfield bars – on trailers.



Jane Mansfield

Side guards are still not required, even though the NTSB, which investigates accidents, concluded that they would reduce injuries and deaths on America's roads. It issued a non-binding recommendation to the NHTSA in April 2014 that all new trailers have side protection systems.

The Truck Trailer Manufacturers Association, the industry's lobbying arm, has opposed a side guard requirement for years. It referred NBC News to a 2016 letter to the NHTSA that cited the added cost, technical challenges and concern that the guards could weaken parts of a trailer or dangerously increase their weight.

"[We] would support the implementation of side impact guards if they ever become justified and technologically feasible," the association wrote.

Aaron Kiefer, an engineer who works in accident reconstruction, has developed a lighter-weight guard that uses polyester webbing as a possible solution. He said early tests have been promising.

"I've seen the carnage that can result when a vehicle strikes an unguarded trailer," he said. Joan Claybrook, a consumer advocate who ran NHTSA in the 1970s, said technology isn't the stumbling block.

"It's very difficult politically, because the trucking industry wants to stop any safety standards that it can, because it increases the price of a truck," she said.

NHTSA has the power to issue regulations, or Congress can order the department to act – a process that starts with the Senate Commerce, Science and Transportation Committee. Safety advocates point to the money flowing from truck manufacturers to lawmakers.

Members of the Senate Commerce committee received more than \$9 million from the transportation industry overall in the last six years, according to OpenSecrets.org. The trucking sector, which is part of the transportation industry and includes both manufacturers and operators, accounted for \$1 million of that, according to OpenSecrets.org data.

Sen. John Thune, R-South Dakota, who has been committee chairman since 2015, received \$830,341 from the transportation industry overall in the most recent six-year period; the trucking sector donated \$133,250 of that amount.

side
underride
crashes
kill
200
people
a
year



Nebraska teen faces \$10G bill after driving car into newly poured concrete

Foxnews.com / May 27, 2017

A teenage motorist who got stuck after driving into freshly poured cement on a Nebraska road this week is also getting stuck with a \$10,000 bill for the damage. It took two hours to free the vehicle, a blue Honda Civic, after Wednesday's mishap, [Fox 42 Omaha](#) reports. "It was probably less than 30 minutes old when they went into it," traffic engineer Thomas Shafer told the station. "It was really not set up in any manner or fashion for a vehicle and they sunk up to the axles in it."

Shafer said the person who causes the damage is responsible for the repairs and other related costs. "This will be a bill that we will present to the driver, and I assume they will talk to their insurance company," Shafer told the station. He calculated the bill to be about \$10,000. The road work was part of a resurfacing project in Lincoln, the state capital.

The driver, Shadrach Yasiah, 19, avoided a summons, according to the station's report which aired Thursday. The police report says it wasn't obvious that the concrete wasn't dry. He drove into it between orange traffic cones placed far enough apart to cause confusion. He could not be reached for comment.



CALIFORNIA OFFICIAL WANTS TO MAKE "DISTRACTED WALKING" ILLEGAL

Using crosswalk on cell phone would be illegal

KEYT.com / September 13, 2017

SANTA MARIA, Calif. - Texting and driving have proven to be dangerous and sometimes deadly. Now a California official wants to take this law a step further. The law would make it illegal to use the crosswalk while using your cell phone. "I do mostly a lot of walking, that's my exercise, I don't like running, so I walk," said tourist Brenda Brooks, but she adds, "...my cell phone stays in my pocket." Brooks said sometimes if her phone rings, she'll stop walking and take the call, but not everyone who walks stops to safely make a call or text.

While Brooks is concerned with personal freedoms being taken away, San Mateo County Supervisor David Canepa said he is more concerned more about public safety, "I mean, people can die looking at their cell phones," said San Mateo County Supervisor David Canepa. Canepa said pedestrian accidents currently cause one-quarter of all traffic fatalities and are increasing because people walking and talking pay too much attention to their screens rather than the street. So Canepa is asking for a new ban on "distracted walking."

That law would let police give citations to pedestrians who look down at their phones while in the crosswalk. Whether it's looking at text messages, Facebook, Twitter that's what we're doing, so this is a 21st Century solution to a 21st Century problem," Canepa said.

Some people in Santa Maria, support it. "I think it's absolutely a good thing for the drivers and the pedestrians crossing the street," Santa Maria resident Lynn Colangelo said.

WAYMO IS TEACHING ITS AUTONOMOUS CARS HOW TO BETTER REACT TO EMERGENCY LIGHTS

Lulu Chang / July 11, 2017
Digital Trends



You know what to do when you hear the blaring sirens of an ambulance or the flashing lights of a police car. But does a self-driving car know the same? Here to ensure that the answer is a resounding “yes” is Waymo, which has begun improving the way its autonomous vehicles detect emergency vehicles.

While the ability to discern an approaching emergency vehicle isn’t brand new technology for Waymo (per a recently published blog post, they have actually be working on that for years), in the last month, the Alphabet-owned company noted that it has been doubling down on its efforts lately.

Thanks to a collaboration with the Chandler Police and Fire Department in Arizona, Waymo recently executed its first emergency vehicle testing day with the company’s new self-driving minivans.

“Throughout the day and into the night, our vehicles – equipped with a powerful suite of sensors – observed police cars, motorcycles, ambulances, firetrucks, and even a few undercover vehicles as they trailed, passed and led our self-driving cars,” the company wrote in a blog post. “As these emergency vehicles drove around, our sensors collected samples at various speeds, distances, and angles – all with the goal of building up a library of sights and sounds to help teach our self-driving cars to respond safely to emergency vehicles on the road.”

Per the latest tests, these autonomous vans are able to “hear” twice as far as was previously possible thanks to the cars’ new suite of sensors. Moreover, these sensors have made it possible to determine where the siren’s sounds are coming from, allowing the self-driving cars to make better decisions when it comes to their reactions. For example, one of these Waymo vehicles could pull over if it senses an emergency vehicle approaching from behind, or yield if it realizes that an emergency vehicle is coming from ahead.



AI
TECH
TALK



So what exactly are these new sensors? All the technology is said to have been developed in-house, including custom audio detection and vision systems, as well as radars and LIDARS (Light Detection and Ranging). “These advanced sensors allow us to both reliably detect emergency vehicles in real time, and collect better information to train our software,” Waymo concluded. “That way, when we’re on the road, we can recognize an emergency vehicle even if we’ve never encountered it before (or if it appears differently because of the angle or lighting conditions).”

the NEED FOR SPEED, a FLAP, and some BUBBLY...



The Ford GT supercar's wing includes all-new Ford technology – a patent-pending design that changes the shape of the airfoil for maximum efficiency when fully deployed. The unique design also includes a small gurney flap which, when combined with the shape change, results in a 14 percent improvement in overall efficiency. (dzgn.co 5/30/2017)

A Gurney Flap – often called simply a Gurney or a wickerbill in the US – is not a very sophisticated piece of kit. It is a simple length of aluminum or carbon fiber right-angle rigidly bolted, riveted or glued to a wing's trailing edge. Usually, its use on the racing car wing is intended to keep a racing car on the road improving wing efficiency, although the Gurney Flap does also see some aircraft use (on Apache AH-64 helicopter tail planes for example). Actually, Apache has a couple of G-flaps (upward, on the starboard wing; downward on the port wing). The G-flaps improve performance during high-powered climb. The device is also applied to other helicopters for stabilization purposes.

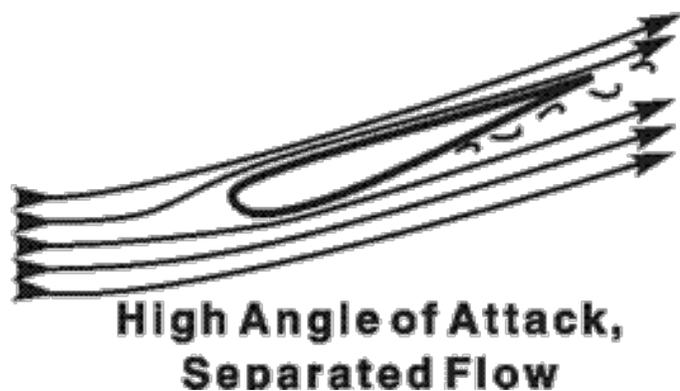
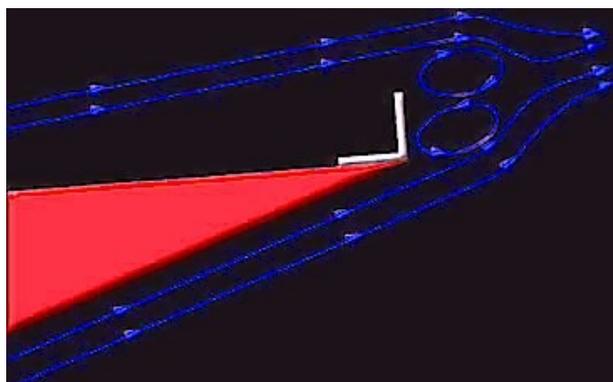
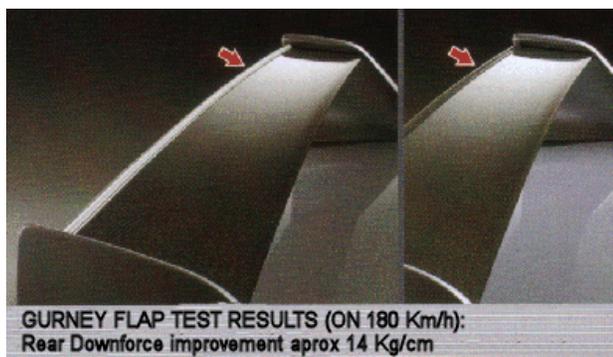
The McDonnell Douglas 300 seat large airliner MD-11 has this device on the full span of its main wing. The shape is not L shaped as on race cars, but the reason for this modification is simply structural and it works the same, and they call it the "Gurney Flap". Since its invention the Gurney flap has been used to enhance the aerodynamics performance of subsonic and supercritical airfoils, high-lift devices and delta wings.

Crude as it looks, it serves essentially the same purpose as the complex flaps on an aircraft wing. It increases lift on aircraft or, in racing car case, downforce. Wind tunnel test showed 30 percent downforce increase with a very small drag penalty in some extreme cases. These results could not be reproduced in all cases, and in fact, in some conditions the G-flap does give rise to a drag penalty. Birth of the gurney flap, in Dan Gurney's own words, was a classic example of necessity being the mother of invention. It happened in 1971 while his AAR (All American Racing) team was testing its new USAC car at Phoenix, prior to the season's first race there. The car was too slow and everyone knew it. Towards the end of the third and last day of testing, driver Bobby Unser challenged 'the boss' to come up with a solution, and Gurney suggested the flap.

Dr. Bob Liebeck of McDonnell Douglas was participating in this test. You may have seen his name in many aerodynamic textbooks, since he is a leading, renowned person in the aerodynamic field. He told Gurney that he thought flap would not work at that time. Gurney has seen the success Richie Ginther had had experimenting with spoilers on Ferrari sport scars and wondered what would happen if a small spoiler was fitted along a wing's trailing edge.

In 45 minutes or so, the first Gurney Flap was fabricated and attached to the car's rear wing, and Unser went out again. Within a couple of laps it was clear he was circulating no faster than before and everyone in the pit assumed the flap was a failure. But when Unser came in he called Gurney over and quietly asked him whether anyone was around to spy on what they were doing. Once Gurney had confirmed they were alone, Unser told him the rear was now so well planted that the car was understeering badly, and that was the reason for poor lap times. All they needed to do was restore the aerodynamic balance by adding more front-end downforce and the car would be transformed.

For most of that first season, none of the other teams understand really what Gurney had achieved. Anyone who asked was told that the flap was a purely structural feature to strengthen the wing's trailing edge and prevent injuries on hands when pit crew push the car. Taken in by this, some teams tried fitting Gurneys on the underside of the wing with predictable results: they lost lap time or worse. Eventually word got around that the Flap was an Eagle secret weapon and everybody started using it, whether they understood its function or not.



And, surprisingly, nobody, Gurney included, didn't understand it properly. As Carroll Smith observed in his book "Tune To Win", "It was a case of monkey see monkey do".

Gurney, meanwhile, get access to a McDonnell Douglas old wind tunnel in which he can test it. This shape is very contradictory because it runs in opposite direction to most aerodynamic devices which are smoothly shaped and sharply ended. Especially for wing profiles, it seems to destroy all carefully calculated sensitive shapes.



The device basically operates by increasing pressure on the pressure side of the wing, decreasing pressure on the suction side, and helping the boundary layer flow stay attached all the way to the trailing edge on the suction side of the airfoil. At the same time, a long wake downstream of the flap containing a pair of counter-rotating vortices can delay or eliminate the flow separation near the trailing edge on the upper surface (aircraft wing) or lower surface (racing car wing). Correspondingly, the total suction on the airfoil is increased.

For the Gurney flap to be effective, it should be mounted at the trailing edge perpendicular to the chord line of airfoil or wing. The flap height must be of the order of local boundary layer thickness or typically 1% to 4% of the wing chord length.

The first picture shows a racing car wing which generates downforce or negative lift as it moves through the air. The air has to accelerate to go around the lower side of the wing and loses pressure when it speeds up. Remember Bernoulli? The slower air on top is at a higher pressure and presses down on the wing surface. The force a wing produces depends on the airfoil shape, the area of the wing, and the square of its speed through the air.

On the second picture is a racing car wing at a high angle of attack.

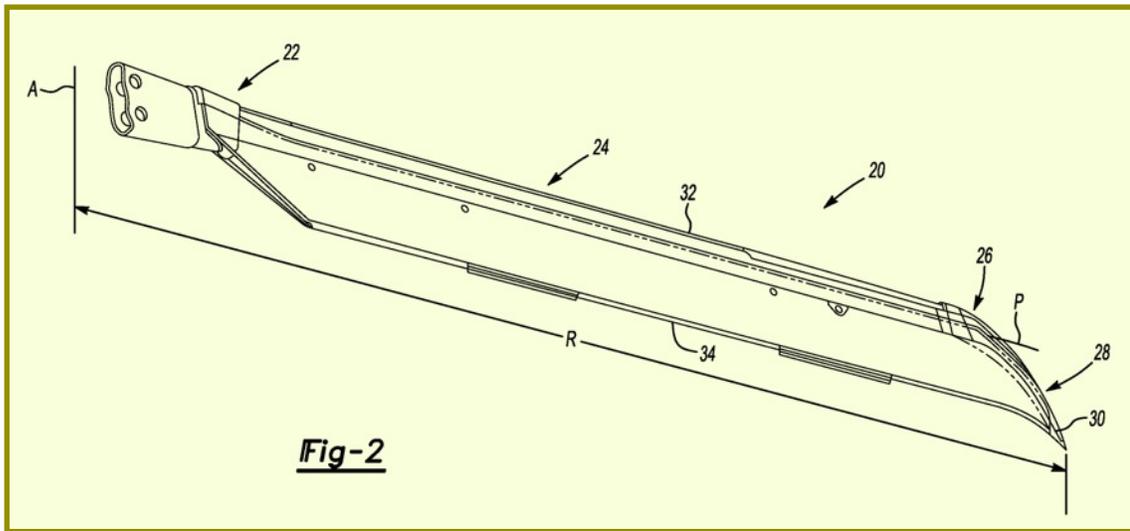


Fig-2

At high angles of attack, air is unable to follow the contour of the lower wing surface and can detach (stall), lowering the efficiency (downforce) of the wing and adding drag.

A small lip on the trailing edge, shown in the third picture, causes a lower pressure just behind it which sucks the lower flow back up to the wing surface. The Gurney flap causes some extra drag, but the wing can be run at a higher angle of attack and produces more downforce.

Designers can only use limited amount of the wing on a racecar because of rules limiting the number and dimensions of wings. Sidepods and tires get in the way and they just can't be left out. A designer has to get all the downforce possible out of the wing surfaces used. With Gurney flaps you can get more downforce from the allowable wings because you can run them at higher angles of attack.

Although common in US single seat racing, rear wing adjustments during the race are not common in F1.

However rear downforce can also be tuned via the gurney flap.

By switching the gurney for a taller or wider strip, downforce can be increased. These strips are attached simply by adhesive tape, so are quickly removed. However fitting one is impractical because it does take time.

Because of that, in the race teams are largely faced with the only option of removing a gurney and not adding one. Typically teams will add a more powerful gurney for a wet race, if the race dries then the teams will remove it. Removing a gurney is a relatively simple process, as the strip is taped to the wing only via its leading edge. The mechanic standing behind the wing pushes the gurney forwards and then rips its off at an angle, taking the tape with it.

Who is Dan Gurney?

The best American road racer of his generation and, of course, the only competitor that Jim Clark truly feared, Gurney was most at home in the 1.5-litre era of the early 1960's where his sympathy with the highly-fragile machinery counted for much. Despite winning races for Porsche and Brabham, his greatest triumph was victory in the 1967 Belgian Grand Prix in his own car, the Anglo-American Racers-run Eagle-Weslake, making him the only man to take maiden world championship race wins for three different constructors.

Daniel Sexton Gurney was born April 13, 1931, in Port Jefferson, Long Island, to John Gurney, a Metropolitan Opera star, and his wife Roma Sexton. Following high school, his family moved to Riverside, California. He graduated from Menlo Junior College and served two years with the United States Army, most of that time overseas in the Korean War. Young Dan quickly became caught up in the California hot rod culture. At age 19, he built and raced a car that went 222 km/h (137.9 mi/h) at the Bonneville Salt Flats. He then became an amateur drag racer and sports car racer.

Dan has had three very successful careers. He was, and still is a racing driver, race car manufacturer and inventor and long term team owner at racing's highest levels since 1958.

Gurney also won races in the Indy Car, NASCAR, Can-Am, and Trans-Am Series. Gurney is the first driver to win races in Formula One (1962), NASCAR (1963), and Indy Car (1967). The other two are Mario Andretti and Juan Pablo Montoya.

In 1967, after winning the 24 hours of Le Mans together with A.J. Foyt, he spontaneously sprayed champagne while celebrating on the podium. **Apart from starting this tradition, he also was the first to put a simple extension on the upper end of the rear wing.**



Gurney was particularly noted for an exceptionally fluid driving style. On rare occasions, as when his car fell behind with minor mechanical troubles and he felt he had nothing to lose, he would abandon his classic technique and adopt a more aggressive (and riskier) style. This circumstance produced what many observers consider the finest driving performance of his career, when a punctured tire put him nearly two laps down halfway through the 1967 Rex Mays 300 Indycar race at Riverside, California. He produced an inspired effort, made up the deficit and won the race (with a dramatic last-lap pass of runner up Bobby Unser).



His racing career, which started with a Triumph TR2 in 1955, spanned 15 years. During that time he became the top road racing star in America, as well as one of the most popular F1 Grand Prix drivers ever. Gurney etched himself a place in racing lore with exciting battles against drivers like Stirling Moss, Jimmy Clark, John Surtees, Jack Brabham, Graham Hill, Phil Hill and many others on the classic road courses of the Nuerburgring, the Targa Florio and Monte Carlo. He remains the only American who win a Formula 1 Grand Prix with car of his own construction.

Gurney began racing in West Coast sports car events before competing at Le Mans for the first time in 1958. By 1960 he had gained a place in the works Ferrari F1 team, but it was not until 1962 that he won his first F1 race for Porsche in the French Grand Prix. Between 1963 and 65, Gurney drove for Jack Brabham's F1 team, consistently proving himself a match for Clark and his Lotus whilst repeatedly let down due to trifling mechanical failures. With the advent of the 3-liter F1 regulations in 1966, he started his own team, Anglo American Racers, and won the 1967 Belgian Grand Prix at the wheel of the Eagle-Weslake. Underlining his versatility, Gurney also won Le Mans in 1967, sharing his 7-liter Ford with Indy 500 winner A.J. Foyt.

On June 18, 1967, Gurney took a historic victory in the Belgian Grand Prix. Starting in the middle of the first row, Gurney initially followed Jim Clark's Lotus and the BRM of Jackie Stewart. A muffed start left Gurney deep in the field at the end of the first lap. Clark encountered problems on Lap 12 that dropped him down to ninth position. Having moved up to second spot, Gurney set the fastest lap of the race on Lap 19. Two laps later, he and his Eagle took the lead and came home over a minute ahead of Stewart.

This win came just a week after his surprise victory with A.J. Foyt at 24 hours of Le Mans, where Gurney spontaneously began the now-familiar winner's tradition of spraying champagne from the podium to celebrate the unexpected win against the Ferraris and the other Ford GT40 teams. Gurney said later that he took great satisfaction in proving wrong the critics (including some members of the Ford team) who predicted the two great drivers, normally rivals, would break their car in an effort to show each other up.

LE MANS CHAMPAGNE STORY

"I was so stoked that when they handed me the Magnum of MOËT ET CHANDON , I shook the bottle and began spraying at the photographers, drivers, Henry Ford II, Carroll Shelby and their wives. **It was a very special moment at the time, I was not aware that I had started a tradition that continues in winner's circles all over the world to this day**" - Dan Gurney

What happend to the bottle that started a tradition? Among the friends on the podium was distinguished LIFE photographer Flip Schulke, who managed to avoid being sprayed because Dan had pulled him up on stage before he aimed the bottle at those in front. "I took one photo and then ducked" Schulke says. "When it was over, Gurney handed me the bottle and autographed it". Schulke kept it for a decade and another decade and another. All those years it had reposed as a lamp base in his house in Florida. "Then a few years ago, I went back to visit him in Southern California and gave it back" says Schulke. "After all, he is the one who should have it". (From "All American Racers" web site)



A member of various Motorsports Halls of Fame, Gurney has been a pioneer of racing innovations. In 1971 he developed the Gurney Flap (wickerbill), an invention which has been adopted by the automobile racing and aviation industries throughout the world. He was the first race car driver to introduce a full-face helmet to Indy Car racing as well as Grand Prix racing. He was instrumental in launching the rear-engine revolution in Indianapolis in 1963.

One of the original founders of Championship Auto Racing Teams (CART), Gurney came up with the name and acronym. He was instrumental in bringing Monte Carlo-type street car racing to the United States and became a co-founder of the Long Beach Grand Prix in 1974, where he continued to serve on its Board of Directors for 24 years.

Gurney is no stranger to Hollywood either. A member of the Screen Actors Guild since 1965, Gurney has appeared in such motor racing films as 'Winning', 'A Man and a Woman', and 'Grand Prix'. His win of the 'Cannonball Run' across the United States in 1971 inspired his friend and co-pilot Brock Yates to write the screenplay for the 'Cannonball Run' movie. His long term relationship with Toyota started in 1982 when Dan was hired by the company to do TV commercials for the introduction of the Supra. This relationship has resulted in three Drivers and three Manufacturers championships for the auto maker.

An avid reader of political and military history, Gurney loves old movies, opera, cigars, traveling to historical places and riding motorcycles. Gurney and his wife, Evi, who was a junior executive in the public relations/press department of Porsche in Stuttgart and a well-known motorsports journalist in Germany during the sixties, have two sons. Dan has four grown children from his first marriage and five grandchildren. They live in Newport Beach, California.

http://www.formula1-dictionary.net/gurney_flap.html Accessed 9/20/2017

A road sign points towards the small town of Hell, Gregory,



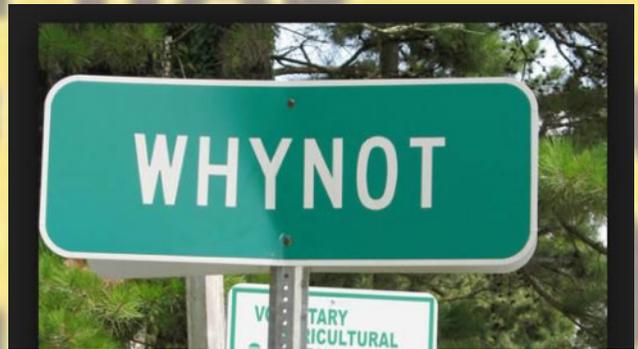
Why call a town "Why?" This teeny-tiny community near the US-Mexico border is named after the Y-shaped intersection of two nearby highways. But because of an Arizona law requiring place names have at least three letters, "Y" became the much more existential "Why."



Just makes any kid (in age or at heart) want to climb on the rocks and the slopes!!



Grammar matters...



The town of **Whynot, North Carolina** has its name because as residents were arguing over a name for the town, someone stood up and said "**Why not** name the town **Why Not** and let's go home?" And so they did.



Saturday, June 28, 2014

Jayne Mansfield

It was 47 years ago tonight, at 2:25 in the morning, that Jayne Mansfield lost her life in a traffic accident on this lonely stretch of Highway 90 east of the Rigolets Bridge in Louisiana. She was en route to New Orleans for an early morning television interview having just concluded an engagement the evening before in Biloxi, Mississippi.



A large semi-truck and trailer had slowed down for a smaller truck that was spraying mosquito fogger. The car plowed into and underneath the truck, instantly killing the three adults in the front seat. Jayne's three children, lying down in the back seat, survived with minor injuries.

Despite Jayne's public sex symbol image as a dumb blonde bombshell (largely a product of the movie and entertainment industry) Jayne had a high IQ and spoke five different languages. She was 34 at



the time and today little is left to remember her by, her movies long since forgotten. She doesn't even have a memorial at the death site. I thought that sad.

The accident scene was so horrific (there are gruesome photos on the Internet) that the National Traffic Safety Administration soon thereafter made it mandatory that all trucks be outfitted at the rear with an under-ride bar or bumper. To this day it is



still know as the Mansfield Bar. So, next time you are driving down the highway behind a big rig truck, you will see this and think of Jayne Mansfield.

Originally posted at:

<http://hwyfly.blogspot.com/2014/06/jayne-mansfield.html?m=1>



BUGATTI INSPIRES DISCUSSION OF TIRES AND MASCOTS

BUGATTI



The Bugatti Chiron
can't go over 300 MPH
because no tire can handle it

Sean Szymkowski
Motor Authority
thebusinessinsider.com
June 24, 2017



Unlike the Bugatti Veyron, the Chiron's tires don't cost \$42k per set

The Bugatti Chiron had big shoes to fill when it arrived to replace the beloved Veyron. So far, it's showed it has the credentials to be a proper follow-up act. However, no one has been able to fully experience the true speeds the 1,480-horsepower hypercar is capable of.

That's because no tire is capable of handling the car at speeds in excess of 280 mph, Bugatti test driver Andy Wallace told *Popular Mechanics*.

He should know a thing or two about top speeds. He's the man that set top speed records in the Jaguar XJ220 and McLaren F1 during the 1990s. Oh, he's also won overall at the 24 Hours of Le Mans. Right now the Chiron is electronically limited at *only* 261 mph and currently wears the stickiest, grippiest set of Michelin rubber available to handle 1,480 horsepower. And 261 mph is only possible by inserting the "top speed key."

If 261 mph sounds like a good idea, the driver inserts a special key into the slot on the doorsill. Its kind of like the multi-million dollar version of Dodge's now famed red key for the SRT Hellcats. The Chiron then quickly performs a safety check, lowers its suspension,

and angles its rear wing appropriately. If the car detects more than a quarter turn of the steering wheel, the top speed mode is disengaged – Bugatti says this is for straight-line use only. Without the key, the Chiron is actually limited to 237 mph.

Wallace said the Chiron easily reaches 261 mph, **so going considerably faster shouldn't be an issue for it, assuming it has the right set of tires.** According to Wallace, **Michelin is currently developing a tire that will be able to stand the loads experienced at just over 280 mph. The rubber should be ready in 2018**

when Bugatti will set an official top speed for the Chiron.

Reaching 300 mph will still be unachievable, though. **The forces at 300 mph are "devastating,"** Wallace explained. It will be interesting to see what Hennessey Special Vehicles will be able to do **with its Venom F5.** Company founder John Hennessey is confident of hitting a speed approaching 300 mph with his own car, due later this year.



We look forward to seeing this battle played out.



They go by a number of different names, but radiator mascots have largely disappeared from modern automobiles, thanks to safety and aerodynamic concerns. That's a shame, because these proud mascots – on both the rarest and the most common cars – are a special form of artistry, and are worthy of collecting on their own.

The name "radiator mascot" is a lot more indicative of what a "hood ornament" actually is. In the early days of automotive production, the radiator was housed outside the engine compartment, and was as decorative as it was functional. It featured a polished shell, sometimes polished grillework to protect the delicate fins from stone damage, and a radiator cap mounted on the top of the radiator. Early on, those caps were purely functional, keeping coolant inside the radiator under pressure. The idea of a radiator mascot is often credited to Lord Montagu who, in 1896, placed a bronze statuette of Saint Christopher – the patron saint of travelers – on the hood of his four-cylinder Daimler. Soon, car owners began having their own unique radiator mascots constructed, and an entire radiator mascot industry cropped up, and the automotive industry itself took notice. As radiators moved inside the engine compartment, the radiator mascots became unnecessary, but they were so prized that they became purely ornamental sculptures affixed to the hood itself. These vestigial radiator mascots became known as hood or bonnet ornaments, and were common well into the 1990s. Some radiator mascots became icons. Some were constructed by the world's most recognized artisans. And still others were as common and utilitarian, but were still artful and unique in their own way.



Aside from Jaguar's "Leaper," probably the most recognizable radiator mascot is one of the last ones still extant. The Rolls-Royce Spirit of Ecstasy (above) – also known as "Emily," the "Silver Lady" or the "Flying Lady" – was originally designed by sculptor Charles Robinson Sykes, and has appeared on Rolls-Royce models since 1911. Modern Rolls-Royce models still feature the Spirit of Ecstasy, and to prevent theft or injury to pedestrians if struck, the Flying Lady is spring mounted and completely retractable. Ra was ancient Egypt's solar deity.

The name "radiator mascot" is a lot more indicative of what a "hood ornament" actually is. In the early days of automotive production, the radiator was housed outside the engine compartment, and was as decorative as it was functional

The name's etymology is unclear, but it may have represented the word for "creator," or "creative power." Creative power was certainly on display in products from the great American car builder Stutz, which utilized a stylized, Art Deco depiction of the sun god as its radiator mascot between 1926 and 1935 (above left). The Stutz Ra features a Neo-Egyptian helmet, rather than the traditional solar disc that is associated with the Egyptian deity. Note the serpent head on the front of the helmet, similar to that worn on the headdress of King Tutankhamun.

The Heron mascot has to have some kind of record for the most delicate radiator mascot ever produced. It's a gorgeous design featuring wingtips that reach six inches over the level of the hood. The Heron was used on both Cadillac and LaSalle models between 1930 and 1932. It was designed by John W. Hession, Jr.



Cadillac went through a number of radiator mascots in the 1930s. It started with the Art Deco heron, but several other auto manufacturers had similar mascots, including Packard's pelican and Hispano-Suiza's stork. For V16 Cadillacs produced between 1930 and 1932, the manufacturer selected this flowing goddess, which was the work of William Schnell, who received a patent for its design.

French luxury automaker Delage utilized the talents of artist René Lalique – the premier glassmaker and sculptor of his day – to accentuate the beauty of its cars, only after Lalique had created radiator mascots for several individual owners. Victoire, or "Spirit of the Wind" is one of Lalique's most prized and appreciated radiator mascots. When RM Auctions sold a lot of 30 Lalique mascots in 2012 -- including a Victoire from a Delage -- the collection sold for \$805,000.

Not all elegant radiator mascots appear on fine luxury automobiles. Like the Mack bulldog, fine mascots can appear on heavy trucks, as well. That's the case with this stylized elephant head that appeared on French Latil trucks in the 1920s (above right). The radiator mascot was the work of artist Frederick Bazin, who was also responsible for the gorgeous Art Deco stork that appeared on Hispano-Suiza's cars.

All images (except for the Spirit of Ecstasy) courtesy Jonathan Ward



Victoire, or "Spirit of the Wind" is one of Lalique's most prized and appreciated radiator mascots. When RM Auctions sold a lot of 30 Lalique mascots in 2012 – including a Victoire from a Delage – the collection sold for \$805,000.



From time to time, I am asked a question about commercial vehicles. The answer to the questions could benefit more than just the person who asked the question. I have decided to write a column for the CA2RS newsletter answering commercial vehicle related questions. If you have a question feel free to contact me at wfocha@comcast.net



This will be the majority of the hay squeezes you will encounter. The key thing to remember about these vehicles is they may not be registered as a commercial vehicle but the operator is subject to the Hours of Service Rules and the vehicle is subject to the of the rules pertaining to maintenance and inspections. Because they are not registered as a commercial vehicle they cannot be operated to transport hay on the forks.

QUESTION: *I have attached a photo of an interesting vehicle I saw recently. What is it? Thanks – TN*

ANSWER. TN – Great question and thank you for sending it. The vehicle is a hay squeeze. A hay squeeze is used to load and unload truckloads of baled hay. A hay squeeze is, by the California Vehicle Code (VC) definition, a forklift. It is built on a two axle commercial truck tractor chassis. There are two different operator's stations (driver's seats). One faces towards the front for highway use and the second faces towards the rear for forklift operations.

In my inspection business, I have several customers who have hay squeezes in their fleet. After you sent me your question, I started looking at them a little closer and asked a few questions. One thing I noticed is some appear to have no registration, others have a Special Equipment (SE) plate, some have a non-commercial license plate, and some have a commercial license plate.

The hay squeezes without any license or SE plate can only be operated on private property or incidentally to cross highways.

If the owner of the hay squeeze is a farmer and uses the hay squeeze to load and unload his own products, the hay squeeze will have an SE plate. The SE plate allows the farmer to operate the hay squeeze on public roadways in an unladen condition.

The hay squeezes with a non-commercial license plate are usually owned by a company that transports hay or operates as broker of hay sales.



Figure 1: Photo submitted to Bill by reader

The hay squeezes with a commercial license plate are just that a commercial vehicle, and it has to be treated as such. All the licensing, operating, maintenance and inspections rules that apply to a regular commercial truck apply to a commercially licensed hay squeeze. A commercially licensed hay squeeze can be operated on a public highway with a load of hay provided it is loaded safely.





There are two very important caveats in my answer to your question:

1. Before you get out your ticket book and put pen to paper to cite the driver of a hay squeeze be sure you understand the laws in the Vehicle Code and the explanations in the California Highway Patrol (CHP) Registration Enforcement Manual (HPM 82.5), which states: "Hay Squeeze: A baled hay squeeze loader or "hay squeeze," as referred to in Section 36101(g) CVC, is a vehicle specially designed for lifting and moving large stacks of baled hay in a single movement. These vehicles are frequently built on a chassis similar to a truck tractor. They are equipped for highway use and are capable of freeway speeds. Vehicles of this type are forklift trucks by definition and are subject to registration, equipment requirements and exemptions."
2. For law enforcement folks: If you encounter a hay squeeze as part of a collision investigation, it would be a good idea to seek the assistance of a Commercial Officer or your local CHP Motor Carrier Specialist to assist you in determining the rules that apply (or don't apply) to the vehicle. For non-law enforcement folks, seek the assistance from a commercial vehicle and farm machinery expert as part of your investigation.

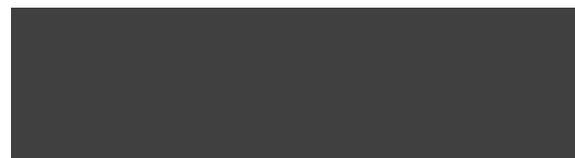
A final thought, when dealing with Implements of Husbandry (Farm Equipment) like most Commercial Vehicles, the rules are easy it is the exemptions that are complicated.

If you have a question about commercial vehicles you can send it to me at wfocha@comcast.net

Thanks, TN.



Section 36101(g) CVC:
A forklift truck, operated by a farmer not for compensation. For purposes of this section, a hay-squeeze shall be deemed a forklift.



CAARS 2017 Annual Conference

ORANGE, CALIFORNIA

OCTOBER 26-28, 2017

The Embassy Suites in Anaheim-Orange is back by popular demand for this year's conference. Call the hotel or go online to register. This year's conference will be held from October 26–28. As per our custom, we will be hosting the ACTAR Examination on October 25, just prior to the Conference. We hope to see you there for this one-of-a-kind opportunity to gather, learn, explore new topics, and discuss collision reconstruction and investigation topics as a specialized community. This conference has been approved for 17 ACTAR CEUs.

TRAINING TOPICS & PRESENTERS:

Motorcycle Accident Reconstruction & Dynamics

Steve Anderson (MEA Forensic) and Lou Peck (Lightpoint Scientific and Dial Engineering)

Rollover Reconstruction

David King and Cole Young (MEA Forensic)

Toyota AEB and Techstream Demonstration and Download Analysis

MEA Forensic Staff

Roadway Drag Factor Evaluation

Jeff Bell (California Highway Patrol)

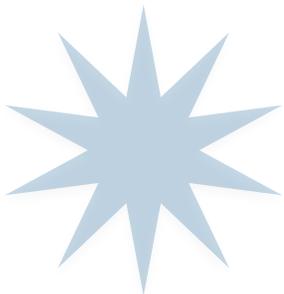
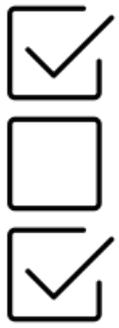
Critical Speed Yaw Analysis

David King and Cole Young

CA2RS Motorcycle Crash Test Review

Lou Peck and Bill Focha (CA2RS BOD)





The following positions on the CA2RS BOD are open for election this year at the Annual CA2RS Conference:

- Vice-Chairperson**
- Director at Large**
- Director at Large**
- Director at Large**

Any member is eligible to run for the open positions or to nominate someone for the open position(s).

The election will take place at the Annual CA2RS Conference October 28, 2017, in Anaheim/Orange CA.

Thank you,

Chris Kauderer





ADVERTISE WITH CAARS

Your ad will reach over 400 CAARS members, their families, acquaintances, and business partners via e-mail. Also, as Skidmarks is posted on the CAARS website, **anyone** viewing the website **can view** the newsletter and **your advertisements**. Advertisers supply their own copy along with this form and a check payable to "CAARS" with the amount selected below. Electronic submissions to "CAARS Editor" at editor@ca2rs.com in jpg, gif, png or pdf. Ad copies and payments submitted to the Treasurer and Editor by the due dates listed below. CAARS reviews product for professional subject matter. E-mail the Editor at editor@ca2rs.com with any questions regarding your ad.

Company Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Contact Person: _____ Phone Number: _____

Fax Number: _____ e-mail address: _____

E X P A N D I N G Y O U R B U S I N E S S
J U S T G O T E A S I E R *anyone can view your advertisement*
 get the most out of your advertising with CAARS today

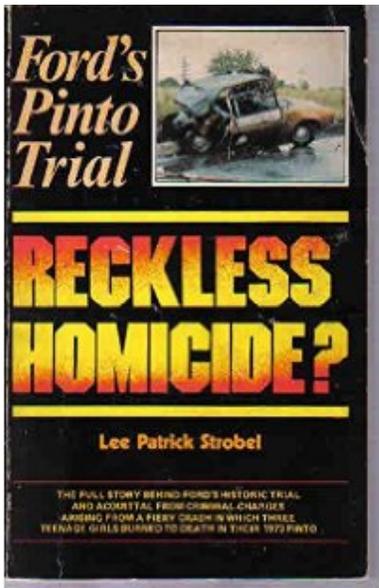
CHOOSE YOUR AD SIZE & NUMBER OF ISSUES			CHOOSE YOUR START ISSUE	
Size	1 Issue	4 Issues	Issue	Ad and Payment Due Date
Business Card	<input type="checkbox"/> \$25	<input type="checkbox"/> \$60	<input type="checkbox"/> March	February 1
Quarter Page	<input type="checkbox"/> \$50	<input type="checkbox"/> \$160	<input type="checkbox"/> June	May 1
Half Page	<input type="checkbox"/> \$75	<input type="checkbox"/> \$260	<input type="checkbox"/> September	August 1
Full Page	<input type="checkbox"/> \$100	<input type="checkbox"/> \$360	<input type="checkbox"/> December	November 1
			First issue for ad appearance: _____	

Special Notes:

Make checks payable to "CAARS" and mail with this completed form to "CAARS Treasurer," 4632 Second Street, Suite 100, Davis, CA 95618, Re: Newsletter Ad. Additionally, e-mail ad copy to the newsletter editor at editor@ca2rs.com.

C O M P L E T E D B Y C A A R S

Date check received: _____ Check/PO Number: _____ Amount: _____



Read it (if You Can Find It!!!)

The Devil's Hatchback: The horrifying true story of the Ford Pinto.

by Sean Munger (seanmunger.com) Originally posted November 13, 2014

I am not an aficionado of cars (though I do own one, as most people do), but I know a lemon when I see one. Historically speaking, with the possible exception of the Ford Edsel, another infamous product by that company, the Pinto, is likely to go down in history as the worst car of all time. That's not just because it was ugly and poorly designed. Clearly it was that. Indeed, the Ford Pinto could well qualify as Satan's favorite subcompact, due to the horrifying circumstances under which it gained its reputation in the late 1970s as an exploding firetrap on wheels.

The story of the Pinto begins in the late 1960s with a Ford executive, Lee Iacocca, who was later to become Ford's president and a popular figure in the 1980s. Iacocca's idea was to offer a very small, light, inexpensive car, costing less than

\$2,000, to compete both with new American subcompacts being offered, like the Chevy Vega, and European imports such as the VW Beetle. The basic design of the Pinto was finished in December 1968, and Iacocca wanted it on the market for the 1971 model year. To keep it light the Pinto had an inline-four engine, and just about everything was scaled down to make it very, very small. Ford hoped this would be a good consumer car in an era when increasing political and economic instability was causing gas prices to rise and (potentially) wages to fall.

The Pinto first went on sale on September 11, 1970. A fastback coupe was at first the only model available, but the hatchback version, which would become the most popular, came out a few months later. Sales were pretty good. *Consumer Reports* ranked the Pinto in the middle of the pack of new subcompact cars, worse than the Vega, but better than the AMC Gremlin, which in some impossible twist of fate actually managed to be uglier than the Pinto. The early 1970s were the nadir of the U.S. auto industry, at least until 2009; in that depressing environment the Pinto was not doing too badly. Then things literally went up in smoke.

In May 1972, a woman named Lily Gray was driving down a California freeway in a 1972 Pinto. Her passenger was a 13-year-old boy, Richard Grimshaw. The Pinto had engine trouble and stalled. It was struck from behind by another vehicle. The Pinto's flimsy bumper crumpled like tinfoil, and poorly-placed bolts under the car punctured the gas tank. The car exploded in a fireball that left Gray dead and Grimshaw horribly burned over most of his body—and permanently disfigured. **The Grimshaw case was not the only one.** Numerous other people – no one is certain how many – were also killed and injured in Pintos that turned into lethal incendiary bombs in crashes that should not have been nearly that bad. An investigation uncovered the culprit: the Pinto's fuel tank was placed *behind* the rear axle instead of *over* the rear axle, as was customary in most cars. Furthermore, the super-flimsy bumper and the lack of "crush space," because the car was so small, made the gas tank especially vulnerable in rear-end collisions.

The Devil's Hatchback: The horrifying true story of the Ford Pinto

It got worse. Much, much worse. The Grimshaw lawyers ultimately uncovered a damning memo in Ford's files, attached to a routine regulatory filing, which showed that the Ford company knew about the defects in the gas tanks before accidents started happening, but had decided not to do anything about it because it was too expensive. Ford figured that the costs of paying damages in wrongful death lawsuits was less than the cost of recalling the cars and putting safety measures on the gas tanks. What was the cost of putting safety measures on the gas tanks? \$11 per car.

The outrage that accompanied these revelations, published by *Mother Jones* magazine in 1977 as the Grimshaw case went to trial, swamped Ford in a firestorm of controversy. The jury was so offended that when they decided the case in 1978, not only did they give Richard Grimshaw every penny of the \$2.5 million damages he asked for, but they socked it to Ford in the kisser by levying a staggering \$125 million in punitive damages against the company. This figure was later reduced on appeal, but Ford still had to pay more in punitive damages than it did to Grimshaw; a judge who upheld the verdict called the company's behavior "reprehensible in the extreme." Ford's feeble arguments that trading lives for dollars was a rational exercise in "cost-benefit analysis" went unavailing. In a later case, also involving an exploding Pinto, the state of Indiana tried to prosecute the Ford company for negligent homicide. That attempt failed, but the damage was already done. Ford reluctantly recalled the Pinto and finally had to shell out its measly \$11 per car to fix the design flaws.



IN ADDITION TO EXPLODING SPECTACULARLY AT THE SLIGHTEST TOUCH, THE FORD PINTO WAS OFFERED IN ATTRACTIVE COLORS LIKE THIS. HOW CHARMING!

Ford continued to offer the Pinto after the gas tank cases ended, but sales never recovered. The car, now derided as immoral as well as ugly and poorly-designed, was quietly withdrawn from the market in 1980 and never reintroduced. Lee Iacocca was fired from Ford in 1978 (though it did not have to do solely with the Pinto) and ultimately rebuilt his career at Chrysler, where he turned the company around from near-bankruptcy. By some estimates as many as 200 people were killed by Ford Pintos, though that number is almost undoubtedly too high; nevertheless, given Ford's callous disregard for human life, under these circumstances even one death is too many.

The Ford Pinto and the Grimshaw case are now classic curriculum in law school classes. I remember learning about it when I was in law school more than 20 years ago. One law scholar wrote, in the early 1990s, an article arguing that the moral outrage of the case is based on "myth," and that there were extenuating circumstances that made it not look so bad for Ford as it did at first glance. I read this article as part of my research for this blog (it's here, if you want to read it). Let me just say that not only I was not persuaded, but I find the analysis contained in that article especially amoral, disgusting and unacceptable.

The bad press of the Ford Pinto will trail it until the end of the auto industry. By the 2000s, various trade publications had repeatedly named the Pinto one of the worst, if not *the* worst, car of all time. It was widely lampooned in popular culture, such as the 1984 film *Top Secret* where a low-speed fender-bender sparks a Pinto to explode into a fireball. All gags aside, many real people were killed and maimed by this detestable vehicle and the appalling corporate decision-making process that brought it into being. If a chunk of steel, glass and rubber could be called evil, it's safe to say they're driving Ford Pintos in Hell.



ACTAR EXAMINATION DATES

DECEMBER 2017

6 LATHAM, NY: SPONSORED BY NYSTARS. APPLICATION SUBMITTED BY OCTOBER 7, REGISTER BY NOVEMBER 6. HELD AT COLONIE FIRE TRAINING CENTER, 100 WADE ROAD. STARTS AT 0800 HOURS.

7 BLYTHEWOOD, SC: SPONSORED BY SCHP. APPLICATION SUBMITTED BY OCTOBER 8, REGISTER BY NOVEMBER 7. HELD AT SC DPS, 10311 WILSON BOULEVARD. EXAM STARTS AT 0800 HOURS.

21 EDISON, NJ: SPONSORED BY NJAAR. APPLICATION SUBMITTED BY OCTOBER 22, REGISTER BY NOVEMBER 21. HELD AT THE MIDDLESEX COUNTY PROSECUTOR'S OFFICE TRAINING CENTER ON NORTH PATROL ROAD. EXAM STARTS AT 0800 HOURS.

JANUARY 2018

31 LINCOLN, NE: SPONSORED BY ACTAR. APPLICATION SUBMITTED BY DECEMBER 2, REGISTER BY JANUARY 1. HELD AT THE LANCASTER COUNTY COURTHOUSE, 575 SOUTH 10TH STREET, TRAINING ROOM C. EXAM STARTS AT 0800 HOURS

FEBRUARY 2018

NO EXAMINATIONS SCHEDULED AT THIS TIME

GO TO ACTAR.ORG FOR ADDITIONAL DETAILS/INFORMATION

parting shot
parting thought

According to a 2013 NHTSA study, 82% of people killed in crashes involving large trucks (3,327 people), were either driving a vehicle other than a large truck or weren't in a vehicle at all.

Crashes involving large trucks in California accounted for 243 of those deaths, making it the second deadliest state, behind only Texas.



FOLD HERE TO MAIL

CA2RS Headquarters
4632 Second Street
Suite #100
Davis, CA 95618



Deliver To:

74 Ford Pinto
2014 Ford Motor Company



California Association of Accident Reconstruction Specialists

4632 Second Street, Suite 100, Davis, California 95618

www.CA2RS.com

