

December 2017

Volume 5, Issue 2

# The Dispatcher

## In this issue:

When Accidents Weren't the Drivers' Fault 1-3

*The Nader effect*

Dispatch Central 1-2

*GM Abandons Lyft*

*Mark Fields' New Job*

*Tesla keeps losing money*

*Bob Lutz on the future of the automobile*

*Ford's Stay Awake Hat*

Mediamobile 3

*Safety Related Content*

Hydrogen Fuel Cell Powered Vehicles 4

*Are they the answer or a diversion?*

Has DSRC Reached the End of the Road? 5

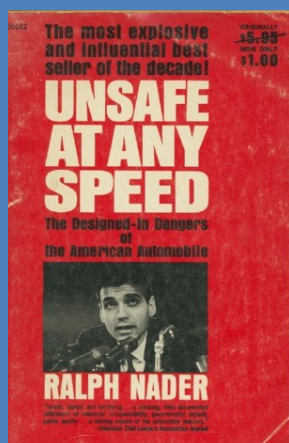
*Not the WAVE of the future*

Eye in the Sky 5

*Traffic UAVs*

Musings 6

*A Friendly Wave*



*Telematics Industry Insights by Michael L. Sena*

## When Accidents Weren't the Drivers' Fault

HOW MANY TIMES during the past week have you heard or read that 95% of all vehicular accidents are the result of the drivers and only 5% are caused by some fault with the car or truck? If only we could remove the driver from the equation, we would save a million lives per year globally. Whether it's 95% or 90% or 80% of the accidents that are caused by driver error matters little. Motorized vehicles are a lot safer today than they were in 1965 when the book, **Unsafe at Any Speed: The Designed-In Dangers of the American Automobile** by Ralph Nader, was published. The book accused car manufacturers of resisting the introduction of safety features and their general reluctance to spend money on improving safety.



Nader's 1965 book focused on the Chevrolet Corvair, which three years earlier became notorious as the car in which Ernie Kovacs died. Kovacs was, at the time, one of the more popular TV entertainers in the U.S. He was married to Edie Adams, an equally talented and popular actress and entertainer. The pair were on their way home from a Hollywood party—it was actually a baby shower for Billy Wilder's newly adopted child—Kovacs in his Corvair station wagon, and Adams following in their chauffeur-driven Rolls-Royce. Accident reports state that Kovacs turned onto Santa Monica Boulevard travelling at low speed, but made a sharp turn when he entered the road. He lost control of the vehicle (pictured above) and it slid sideways into a light pole. His rib cage was crushed and his aorta was severed. He died instantly.

The Corvair was an oddity at the time it was first sold in 1959. Gone were the fins and chrome and fighter plane noses. It was small with soft lines. It had the lines of a BMW, as I pointed out in my November 2016 issue of **The Dispatcher**. However, unlike the BMW, the Corvair had a balance problem. Its rear-engine design made it heavier in the rear than in the front. In addition, its motor was too strong in proportion to the car's size. The major problem was the car's swing axle suspension, which was prone to tuck un-



### Dispatch Central GM Abandons Lyft

*"O, swear not by the moon, the fickle moon, the inconstant moon, that monthly changes in her circle orb, Lest that thy love prove likewise variable."*

*William Shakespeare  
Romeo and Juliet*

Lyft only has itself to blame if the relationship with GM is cooling off as reported. GM invested \$500 million in Lyft for 9% of the company and a board seat. Dan Ammann, GM's president, said that when they made the investment, "a key goal was to create an autonomous, on-demand vehicle network." The idea was that GM, its Cruise division and Lyft would work together. It was never meant to be exclusive, said both companies, but it seems that when Lyft invited Ford into its living room, that was just one too many suitors for GM.

✂

### Greener Pastures: Fields Finds New Home

Ford replaced 'car guy' Mark Fields with 'furniture guy' Jim Hackett in May of this year. The jury is still out on this exchange, but Fields has moved on. He joined TPG Capital, a private equity firm, as a senior advisor. He will work with the firm's industrials team looking for ways to "create change and innovation." That's what he was doing at Ford when he sat in front of his boss, Bill Ford, who pushed a button and the trap door opened. Good luck, Mark.

✂

*Continued next page*

*Continued next page*

**Dispatch Central (cont.)****Tesla Tanks in Q3**

The stock market darling reported a \$671 million loss for the third quarter, compared to a \$22 million profit in the same quarter in 2016. It was the company's largest ever loss for a quarter. "Totally my fault!" claimed Musk. Well, since you take all the credit for everything else, it's only fair that you didn't claim your dog ate all the profits. "To restore some level of investor confidence, Tesla needs to produce and sell 5,000 Model 3 units per week by the end of the first quarter of 2018 and achieve this target without an increase in cash consumption in order to move the stock "materially higher," said Morgan Stanley's Adam Jonas in a note to investors. Or else what, Adam, your investors will lose their shirts? Tesla's stock price turned up a day later after dropping 4% on the not-so-pretty news.

⌘

**Lots of Lutz**

"We are approaching the end of the automotive era," predicts Bob Lutz. "Human driven vehicles will be legislated off the highways in 15-20 years. Big fleets will own all cars. Dealers will be o.k. for next 10-15 years, but then they will be marginalized," says Lutz. I have found there is a correlation between peoples' predictions and either the number of years until retirement or until they expect not to be around. Lutz is 85. He'll be happily driving his Chevy Volt Aston Martin until they take away the keys. Thanks for your parting words, Bob. I'll see your 15 and raise you 15.

⌘

Ford is commemorating sixty years of producing trucks in Brazil with a hat for truckers, called **SafeCap**. The hat is designed to keep drivers from falling asleep at the wheel, which is the principal reason for truck crashes. The hat senses head movements associated with drowsiness then uses lights, vibrations, and sounds to alert the driver.

**When Accidents Weren't the Drivers' Fault: (cont. from p.1)**

ner in certain situations, particularly in very curvy motorway ramps. The more Corvairs that were sold, the more accidents of this type occurred. By the time the Ernie Kovacs accident happened, GM had sold 1.1 million of the little darlings. Wrongful death suits began to pour in. GM, as car companies are wont to do, blamed the drivers. The fine print read that tire pressure in the front should be 12 psi lower than in the rear, rather than being the same front-to-back or little higher in the front. The manufacturer also offered an option, which apparently was not well advertised, consisting of upgraded springs and dampers, front anti-roll bars and rear-axle-rebound straps to prevent the tuck-under.

Enter Nader. He was then, and continues to be today at the age of 83, a bull terrier dressed in a cocker spaniel costume. He has been from the time he graduated from Harvard Law School a tireless consumer advocate and a huge pain in the butt for any company or public agency that he believes isn't doing right by consumers. A documentary film about him debuted in 2006. It was titled *An Unreasonable Man*.

Nader's book takes on GM and the entire car industry in a methodical manner. He begins with all of the Corvair's problems and then moves to the total lack of safety considerations given to design of interiors, lack of standards for the placement of gears on automatic gear shifts and the fact that the impact of an accident on the driver and passengers had been completely ignored, even though there was plenty of good research available at the time. Light poles simply pushed their way through the sides the doors, and steering wheels ended up as far back in the vehicle as the impact thrust them. He devoted one chapter of the book to the automobile's impact on air pollution, a subject that was not widely discussed at the time. He spent another chapter on pedestrian safety, and how all of the aggressive chrome details functioned as murder weapons. Finally, he skewered the federal government for spending hundreds of millions on highway beautification, but peanuts on highway safety measures.

The book ends with a call for the government to "pay greater attention to safety in the face of

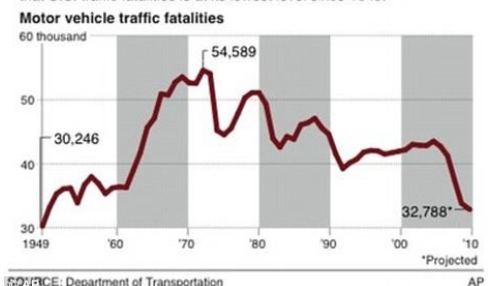
evidence that deaths can be prevented by applying the science that is well-known to the vehicle industry.

Nader and *Unsafe* received little attention from the public when the book first came out. But then GM did what companies should not do: counterattack. It hired private investigators to look into Nader's financial and private life in hopes of smearing his reputation. According to court reports, Nader discovered the investigation and publicly denounced GM's tactics, alleging that the "investigators" had even hired several young women to lure him (unsuccessfully) into sexual liaisons." Nader sued GM for harassment, and GM settled the court case for \$425,000. That money went toward funding the establishment of his consumer rights organizations for the past fifty-two years.

GM stopped manufacturing Corvairs in 1969. It was too late for Ernie Kovacs and all the others who were killed as a result of the poor safety design of the vehicle, but Nader's advocacy of automobile safety and the publicity generated by the publication of *Unsafe at Any Speed*, along with concern over escalating nationwide traffic fatalities, contributed to Congress' unanimous passage of the 1966 *National Traffic and Motor Vehicle Safety Act*.<sup>1</sup> The Act established the National Highway Traffic Safety Administration (NHTSA), and it was claimed that this marked "an historic shift in responsibility for automobile safety from the consumer to the government." The legislation mandated a series of safety features for automobiles, beginning with safety belts and stronger windshields.

**Traffic fatalities decline**

A statistical projection by the Department of Transportation shows that U.S. traffic fatalities is at its lowest level since 1949.



What was the situation back in 1965 when Nader wrote his book? Traffic fatalities in the

Continued next page



## When Accidents Weren't the Drivers' Fault: (cont. from p.2)

U.S. were rising quickly to their highest level ever. As the chart above shows, they peaked in 1972 and have been falling ever since.

There are groups who are proud to take a portion of the credit for the drop in deaths, including people against drunk driving because their protests have had a positive effect and road authorities who have added safety to beautification. Not unsurprisingly, the car industry has been subdued in seeking the limelight. If they take the credit for the reduction, they are, in a sense, admitting that they were culpable for the rise. They talk about seat belts and air bags, but putting the crumple zone in front of the dashboard instead of inside the passenger compartment has saved many, many lives. Here are photos of a crash test of a 1959 Chevy Bel Air compared to a 2009 Chevy Malibu provided by the Insurance Institute for Highway Safety. A seat belt would not have kept the steering column from crushing the driver's chest in the Bel Air.



I've done some hunting to find the most important safety improvements, and here is my list in order of the most important:<sup>2</sup>

1. Three point safety belt, introduced by Volvo in 1959. Fifty years later, studies showed that at least a million lives had been saved as a result.
2. Crumple zone
3. High-strength steel (not fiberglass)
4. Airbags
5. Anti-locking Braking Systems (ABS)
6. Safety glass
7. Disc brakes

8. Collapsible steering wheel (U.S. DOT mandated them in 1968, but Formula 1 did not make them standard until after Ayrton Senna's tragic death in 1994.

9. Electronic Stability Program (ESP)

### Refresher Course

Thirty-two years after Nader's book was published, when significant progress had been made by the auto manufacturers on safety improvements, a test in an unused airfield close to central Stockholm of a new small car developed by Mercedes-Benz showed that it was still possible to produce an unsafe car. The Mercedes-Benz A-Class was being introduced as the company's smallest model. It didn't look like a Mercedes-Benz, and, as it turned out, it didn't act like one either.

Swedish magazine, *Teknikens Värld*, decided to perform its own set of standard tests before writing about the new car. One of them was the evasive maneuver test, which became known as the 'moose test' after *Süddeutsche Zeitung*, reporting on the results, gave it the name. It is a misnomer because the test is intended to avoid a backing vehicle or a child running into the road; a moose will always continue across, so the best maneuver brake hard or to turn to the right if possible. In any case, the MB A-Class flipped. MB was shocked and, at first (yes, you guessed it) counterattacked. It claimed the test was rigged and there was nothing wrong with the car. There was. German testers reproduced the same results.

MB recalled the few thousand cars that were on the roads and stopped all sales until they fixed the problems. The fixes have made all cars better with electronic stability control, stiffer chassis, modified shock absorbers and a lower center of gravity.

In 2016, Ralph Nader took his place beside other Automotive Hall of Fame inductees when he accepted its invitation to join them. Apparently, his reaction when being told of the honor was to ask if they had called the wrong person. Bob Lutz, a Hall of Famer since 2013, said of Nader: "I don't like Ralph Nader and I didn't like the book, but there was definitely a role for government in automotive safety." Indeed. Does that mean if Nader had not written his book, we would still be driving cars that are unsafe at any speed?

### Mediamobile

#### Safety related content

*SAFETY CAN MEAN many different things for each of us. How do we approach safety when we prepare to travel somewhere by car. We may check the tires and clean the windows from ice and snow, but how do we prepare ourselves for the actual trip, in particular, the driving conditions and weather along the way or at the destination? What if I could find this information in the car, always up-to-date and for free?*

*V-Traffic's Road Weather warning system has been developed in cooperation with the Finnish Meteorological Institute starting in 2006. It is in use today in all Nordic countries and Poland. Warnings are sent for the road segments where a significant change will occur within the next hour. Originally, there were different types of winter weather warnings (e.g., icy road, heavy snowfall), but in the last few years the product has been developed further and delivers all types of weather warnings twelve months a year, not only winter seasons. The latest development is cross wind warning where both direction of the road and the wind is taken account. Road Weather warnings are sent now over 550,000 times a year in the Nordics.*

*Large animals (e.g., moose, wild boar) are plentiful in the Nordic countries and pose a severe traffic risk. Encounters with moose occur 10 000 times a year. V-Traffic Dynamic Animal Warning divides animal warnings in two levels: high risk based on accident statistics and animal behavior analyses; and, very high risk based on online data or real road level observations. Moose and reindeer warnings are now operational in Sweden and Finland.*

*Both Road Weather and Animal Warnings are based on widely used standards (RDS-TMC, DAB TPEG and Connected Http/ TPEG). All animal and road weather incidents have their own global TMC or TPEG codes. Mediamobile believes that safety belongs to everyone. Nearly 80% of the cars in the Nordic markets are more than four years old and have no or very limited modern connectivity. That is why it uses the robust and reliable broadcasted network offered by TMC/TPEG).*

[www.mediamobile.com](http://www.mediamobile.com) / [www.v-traffic.fi](http://www.v-traffic.fi)

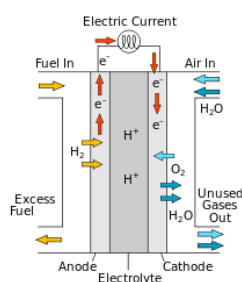
### Hydrogen Fuel Cells The Basics Hydrogen

1	← atomic number
H	← element symbol
Hydrogen	← element name
1.008	← atomic weight

Hydrogen (Latin: Hydrogenium) is the simplest, lightest, most common and earliest-built element in the universe. At standard pressure and temperature, hydrogen is a two-atom, odorless, colorless and tasteless gas, but it is extremely flammable. Hydrogen gas was first artificially produced in the early 16th century by the reaction of acids on metals. In 1766–81, Henry Cavendish was the first to recognize that hydrogen gas was a discrete substance. When burned it produces water, the property for which it was later named: in Greek, hydrogen means "water-former".

#### Fuel Cell

A Fuel Cell is a device that continuously changes the chemical energy of a fuel (such as hydrogen) and an oxidant (such as oxygen) into electrical energy.<sup>3</sup> Fuel cells can produce electricity continuously for as long as fuel (hydrogen) and oxygen are supplied. Fuel cells consist of an anode, a cathode, and an electrolyte that allows positively charged hydrogen ions (protons) to move between the two sides of the fuel cell. At the anode, a catalyst causes the fuel to undergo oxidation reactions that generate protons (positively charged hydrogen ions) and electrons. The protons flow from the anode to the cathode through the electrolyte after the reaction. Electrons are drawn from the anode to the cathode through an external circuit, producing direct current electricity. This drives a motor.



## Hydrogen Fuel Cell Powered Vehicles

I THOUGHT THAT some of my readers might be as much in the dark about hydrogen fuel cell powered vehicles as I was, so I decided to help us all out. If you are already an expert, you can read this with a critical eye and offer your suggestions for improvements. The first thing I learned was there are three points of view on the subject. There is an extremely small group of enthusiastic supporters led by Toyota. There is a slightly larger group who see fuel cells as a threat to their beloved battery electric vehicles. There then there are the rest of us, comprising about 99.9999% of the world who either don't know or don't care.

The sidebar provides the basics. Fuel cells were invented in 1838. There are a number of different types that are in active use for both primary and backup power for commercial and residential applications. Fuel Cell Electric Vehicles (FCEVs) are one of these applications. Three automotive OEMs are currently selling or leasing FCEVs: Toyota, Honda and Hyundai. Pictured below is the Toyota *Mirai*, which means 'future' in Japanese.



When you read about the advantages of FCEVs, it seems like it's no brainer. You take the most common element on earth, combine it with air, and generate electricity that powers a motor that drives a vehicle. Refilling the tank with hydrogen gas takes the same amount of time as filling up with petrol or diesel, and one tank takes you 480-650 km, twice as far as most BEVs. The best part is there are zero emissions from the vehicle except water.

So what's the catch? For one, producing the hydrogen. The U.S. Department of Energy *Alternative Fuels Data Center* says the following: Although abundant on earth as an element, hydrogen is almost always found as part of another compound, such as water (H<sub>2</sub>O), and

must be separated from the compounds that contain it before it can be used in vehicles. Hydrogen is produced from fossil fuels (natural gas or coal), biomass (ethanol) or with water electrolysis (i.e., zapping water with electricity). The least expensive, most efficient and most common method is natural gas reforming in which natural gas is reacted with high-temperature steam. Electrolysis using renewable energy sources, such as solar or wind, has the potential to make the hydrogen production process renewable, but producing enough electricity in order to produce enough hydrogen requires a technological breakthrough that has not yet been achieved. We have the same problem with BEVs because most of the electricity used to charge their batteries is not coming from renewable sources.

Another problem with hydrogen is getting it from where it is produced to the pumps that will fill up the cars' tanks. In the U.S., hydrogen is produced in quantity in three states, California, Louisiana and Texas, and it is used for petroleum refining, treating metals, producing fertilizer and processing foods. Hydrogen pipelines would be the least expensive distribution method, but the current network is very limited and it will be expensive to build out. High-pressure tube trailers for transporting the compressed gas (like the tankers that transport petrol and diesel) are expensive, principally because hydrogen gas is extremely flammable. Another breakthrough is needed to be able to build many hydrogen production facilities.

Then there is the cost of the fuel cells and the cars that use them. A Toyota Mirai costs over twice that of a Toyota Prius. Currently, the most efficient catalyst used in hydrogen fuel cells is made of platinum. This precious metal is ten times rarer than gold and trades at around the same price per ounce. 80% of it is mined in South Africa, which has most of the world's deposits.

Finally, there is 'Hydrogen Anxiety'. In 2017, there are 39 hydrogen gas fueling stations in the U.S. of which 35 are in California.<sup>4</sup> Europe had 25 stations at the end of 2016. Germany has a goal of having 100 hydrogen stations by 2018.

**With FCEVs, we are definitely not there yet.**



## Has DSRC Reached the End of the Road?

ONE YEAR AGO I began work on a survey and report for the *International Telecommunication Union (ITU)* on the roadblocks to implementing vehicle-to-everything (V2X) communications. I reported on the results in the March 2017 issue of *The Dispatcher*. When I began the study, the U.S. Department of Transportation was still under the direction of the Obama administration, and it was preparing to recommend in the second quarter of 2017 that WAVE (Wireless Access in Vehicular Environments), a DSRC-based solution using the same standards as products marked as Wi-Fi, be made mandatory in all new vehicles in a phase-in schedule beginning in 2019.<sup>5</sup>

The study's principal findings were:

- A slight majority of the respondents stated that WAVE is a known quantity, that it has been proven in multiple tests over a decade to deliver dependable connectivity between vehicles and to and from infrastructure, and that it is ready for deployment. These same respondents understood and accepted the shortcomings (i.e., limited range, restricted bandwidth and potential security issues), but felt that its proven advantages outweighed the possible disadvantages. Japan had already deployed a DSRC-based solution, Europe's CAR 2 CAR Communications Consortium had committed to do so and the U.S. government would mandate it—barring a complete change of direction by the incoming administration.

- A slight minority stated that cellular V2X is close to being ready now for implementation, and that it has significant advantages over the DSRC-based alternative in communications range, bandwidth and types of services that can be offered. Most importantly, they felt that it solves the security issue in a more reliable fashion without the need for a new road-side infrastructure.

Secretary of Transportation, Elaine Chao, has been very quiet on the topic of mandating WAVE since taking over from former Secretary Anthony Foxx at the beginning of this year. Then, in October, her department issued the Strategic Plan for FY 2018-2022, and it contained no mention of vehicle-to-vehicle communication or vehicle connectivity. Why is this important? The Strategic Plan “establishes the strategic goals and objectives for the

DOT for each new term of an Administration.” It presents “the long-term objectives the agency hopes to accomplish at the beginning of each new term, and includes the actions the agency will take to achieve those objectives.” The White House Office of Management and Budget prepared a list of regulations that are actively under consideration, and mandating V2X is not among them. The topic has been relegated to a long-term agenda list.

There has been a strong lobbying effort by the information/entertainment industry to kill WAVE so that all or at least part of the dedicated 5.9 GHz spectrum set aside for transportation technologies could instead be used for wireless applications. The Federal Communications Commission has been conducting tests on sharing the spectrum, but so far these have not been conclusive.

Automotive OEMs do not like mandates from government because mandates always end up adding costs to their vehicles, which then have to be passed on to consumers or result in reducing their already thin margins even further. However, OEMs dislike uncertainty even more than mandates because in order to be prepared for a possible mandate, the OEMs need to modify their new platforms to accommodate possible additions. This adds cost without any functionality attached to those costs. OEMs who are in favor of V2X can always incorporate the technology in their vehicles, but the results would be limited. GM has incorporated V2V in its Cadillac CTS brand, but how often to two of them meet? Laws or regulations are usually accompanied by a standard, and standards would allow all cars to communicate with each other.

When asked for a comment on whether these moves indicate that mandating WAVE is off the table, Secretary Chao's office issued a statement that NHTSA is “still reviewing more than 460 comments on the proposed mandate before deciding its next step, and that no final decision has been made.” What can we make of this? To paraphrase Mark Twain when he learned there were rumors he had died: *The report of WAVE's death is an exaggeration.* So don't uncork the champagne if you are among those who want to celebrate, and don't send sympathy cards if you are an admirer. *It ain't over 'till it's over.*

### Eye in the Sky

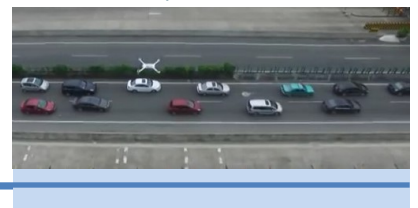
*YOU'RE DRIVING ALONG and suddenly a jerk in a white van appears from nowhere, cuts you off and starts weaving through the lanes ahead. Where's a cop when you need one, you say to yourself. Catching one of these drivers in the act is very difficult, and they know it—which is why it happens so often. Well, it's not so difficult anymore.*

*Police in the south of France are testing the use of unmanned aerial vehicles (aka drones) to spot the scofflaws and take a photo of them that will be used in court.<sup>6</sup> The police monitor the UAV from a hidden position and relay a message to a motorcycle patrol further along the road who pull over the offender and direct them into an off-road control lane where tickets are issued and fines paid. After four months of operation, the police report they have issued 'hundreds' of fines for tailgating, passing in no-passing zones, dangerous driving. They have not yet been able to figure out a way to use the UAVs to gauge speed, but if they can stop one head-on collision all their efforts will be well worth it.*

*There are people who are objecting to this initiative as just one more government effort to spy on them. A lobby group called Forty Million Drivers calls it an “unwelcome escalation”, referring to speed cameras as one step too far. The head of the group, Pierre Chasseray, complains that “...instead of encouraging drivers to keep their eyes on the road, we now have to look at the side of the road for speed cameras and in the air for drones.”*

*Well, no Pierre! Drivers who obey the speed limits and don't drive dangerously, imperiling other drivers, pedestrians, poodles and property, can keep their eyes fixed firmly on the road ahead and don't have to worry about where the speed cameras or eyes in the sky are located.*

*Here is a photo of a drone in highway patrol action taken by another drone at a higher elevation. The image is of a highway in China. The surveilling drone is low enough to read the vehicles' license plate numbers.*



## Michael L. Sena Editor

SUNDBYVÄGEN 38

SE-64551

STRÅNGNÄS

SWEDEN

PHONE:

+46 733 961 341

E-MAIL:

[ml.sena@mlscab.se](mailto:ml.sena@mlscab.se)

[www.michaellsena.com](http://www.michaellsena.com)

### Footnotes:

1. The National Traffic and Motor Vehicle Safety Act was enacted in the U.S. in 1966 to empower the federal government to set and administer new safety standards for motor vehicles and road traffic safety. It was the first to establish mandatory federal safety standards for motor vehicles.

2. Ezra Dyer. Why Cars Are Safer Than They've Ever Been. Popular Mechanics (11 Sept. 2014)

3. Fuel Cell definition by Merriam-Webster

4. U.S. Dept. of Energy, Alternative Fuels Data Center (Nov. 12, 2017)

5. WAVE is an approved amendment to the IEEE 802.11 standard. WAVE is also known as IEEE 802.11p.

6. <https://www.marketplace.org/2017/11/13/world/france-drones>

### Driving in the Future



Instead of getting into the car and driving to the store to pick up a loaf of bread and a container of milk (or tofu slices and seaweed juice) Joe and Josephine will sit at their comfortable control consoles and watch their robot cars make the journey, ready to take over if James or Julie gets in trouble along the way. How much safer can driving be? But then, a bit further into the future, since everything will be delivered to everyone's home, there won't be any need for James or Julie or their robot car friends to drive to the local store. Maybe we should start planning for a guaranteed minimum wage for redundant robot cars as well as for humans. Something more to think about.

## Musings of a Dispatcher: A Friendly Wave

THE BUS RIDE from Göteborg Central Railroad Station to Lindholmen Science Park takes about ten minutes. Crossing the Göte River Bridge is the slowest part of the journey because the buses and trolleys that share the two dedicated lanes in the middle of the roadway have to slow down to a crawl as they trundle over the section of the bridge that opens for the big freighters to pass under. One of the advantages of the slow speed is that those few passengers who are not mesmerized by what is flashing on their mobile phones have a wonderful view up and down the river. Another is that the drivers of the buses and trolleys have extra time to wave to each other as they steer their public transport vehicles in opposing directions. As I stood right behind the driver during a rush hour ride across the span, I counted nine waves from my driver, and not a single passing driver did not return the gesture.



We had trolleys and buses in Scranton, PA where I grew up. Scranton is known as **Electric City**, in part because it had the first electric street car system in the country that ran exclusively on electric power. It was introduced by E.B. Sturges in 1886.

### About Michael L. Sena

Michael Sena works hard for his clients to bring clarity to an often opaque world of vehicle telematics. He has not just studied the technologies and analyzed the services. He has developed and implemented them. He has shaped visions and followed through to delivering them. What drives him—why he does what he does—is his desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel efficient vehicles.

This newsletter touches on the principal themes of the industry, highlighting what is happening. Explaining and understanding the how and why, and developing your own strategies, are what we do together.

The trolleys were retired around 1951, but the Scranton Transit buses continued until the early 70s, eventually replaced by a public service called COLTS (County of Lackawanna Transit System). I'm sure the trolley drivers waved to each other. I can vouch for the fact that The Scranton Transit bus drivers always waved, and the COLTS drivers still do, without fail.

According to *Västtrafik* in Göteborg and COLTS in Scranton, there is no official policy on waving. No one receives credits for a wave, nor gets extra-degree-of-difficulty points for making an over-the-top gesture. There are also no demerits for demurring. Everyone has an off day.

I've done a lot of searching to find out when and why the practice started. It seems to have begun at a time when both vehicles and roads were not all that dependable, and a wave signaled that for now, everything's alright. Deana Halhead on Answers.com provides a good explanation to why the practice has continued: *In a sea of fast paced, high volume, rain and shine traffic situations, it's comforting to get a little wave of recognition from a fellow who shares your outlook on safety and defensive driving. A wave says, "I'm with ya, buddy!"*

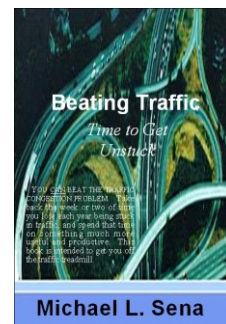
I have thought about my daily journeys, the number of times I wave and the reasons I do so. When I am about to enter a 'zebra' crosswalk, I make eye

contact with the driver approaching to my left (to my right when I'm in the U.K., Japan or Down Under), and make sure they are going to stop. I give them a wave as I cross just to thank them for doing the right thing. Then I repeat the practice to cross the other lane of traffic.

Where we live, there are a number of schools and so-called 'traffic calming' places where one driver must stop to allow the other to pass. It's voluntary, so we both stop and one waves to the other to pass, and then we wave to thank each other. I wave to every car I meet when I am taking my long walks along roads in the farmlands surrounding our little city of Strängnäs. The drivers usually wave back. When I am on a highway and find myself approaching a slow moving truck and put on my turn signal to pass, and a car that is already in the passing lane slows down to allow me to enter, I definitely give him a wave as a gesture of thanks.



We humans have different ways of communicating with each other, both verbal and nonverbal. The wave is one of the most versatile nonverbal forms of communication, and acknowledging another individual's presence with a wave is one of the most important tools we have for the safe operation of motorized vehicles, both inside and outside of them.



Download your copy of Beating Traffic by visiting  
[www.michaellsena.com/books](http://www.michaellsena.com/books)