



April 7, 2016

Honorable Anthony R. Foxx
U.S. Department of Transportation
Office of the Secretary
West Building, 9th Floor
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Honorable Mark R. Rosekind, Administrator
National Highway Traffic Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
West Building Ground Floor, Room 12-140
Washington, D.C. 20590

RE: ***Google's Proposed Assault on America's Auto Safety Laws: Ten Questions About Robot Cars Google Must Answer***

Dear Secretary Foxx and Administrator Rosekind:

We are in receipt of Google's March 11, 2016 letter informing you that Google plans to seek federal legislation permitting it to "expedite" safety evaluations, remove "regulatory roadblocks" and "overcome many technical regulatory barriers that stand in the way of autonomous vehicles," and inviting you to join Google's campaign. Though couched in euphemisms and poll-tested terminology, Google's ploy is obvious. It plainly hopes to obtain a congressional bailout from the nation's automobile safety laws, enforced by DOT and NHTSA, which require that automobile manufacturers demonstrate the safety of their vehicles through a transparent process that permits American taxpayers, consumers and vehicle suppliers to monitor and participate in the agency's decision-making process.

Google seeks to replace this open and accountable regulatory process with a fast-track system that will favor Google's business and marketing plans at the expense of consumers and the marketplace by permitting the company to collude with DOT and NHTSA behind closed doors and out of sight of the public and the news media. As this letter will explain, such a process threatens the public's health, safety and security.

What is most striking about Google's request – a total of three pages long – is that it is utterly devoid of any justification. In its quest to escape a safety system that is based on scientific evidence, Google has characteristically avoided providing any evidence that manufacturers of driverless vehicles either need or deserve such special legal treatment. Indeed, at the same time that Google wants to evade federal safety requirements, Google steadfastly refuses to provide information that would enable the public and policymakers to assess the safety and security of its autonomous cars.

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 2 of 10

As the most highly visible, not to mention politically active, promoter of driverless vehicles in the United States, and as the author of the proposal to exempt them from the current safety system, Google should be required to answer 10 questions concerning its driverless vehicles. We ask that you present these questions to Google and publish its answers within 30 days so that the public may comment on them before NHTSA takes any further action.

1. Google Has Proven that *Driverless Cars Are Dangerous.*

No driverless vehicle is in production in the United States today, nor is any such vehicle close to production. Indeed, contrary to the propaganda emanating from Google, it will be decades (if ever) before robots will be capable of driving human beings on American streets and highways in vehicles that do not need steering wheels, brakes and do not require that humans be able to instantaneously seize control.

Google itself has been forced to acknowledge that its “driverless” test vehicles – a prototype two seat, golf-cart sized machine with a top speed of 25 mph and a retrofitted Lexus – are dangerous.

- In January 2016, the California DMV released a report showing that between September 2014 and November 2015, Google’s robot driver failed 272 times, requiring the supposedly unnecessary human being to take immediate control of the “driverless” vehicle. During that period, the human driver felt compelled to seize control of the vehicle from the robot an additional 69 times in order to avoid a collision. On average, the Google robot “disengaged” 22.7 times a month. Google’s robot technology quit 13 times because it couldn’t handle the weather conditions. Twenty-three times, the driver took control because of reckless behavior by another driver, cyclist or pedestrian. The report said the robot car technology disengaged for a “perception discrepancy” 119 times. Google defines such a discrepancy as occurring when the car’s sensors don’t correctly perceive an object, for instance over-hanging tree branches. The robot technology disengaged 55 times for “an unwanted maneuver of the vehicle.” An example would be coming too close to a parked car. The human took over from Google’s robot car three times because of road construction. In 2.3% of the disengagements, Google’s technology incorrectly predicted the behavior of others.

- Last summer, Google’s vehicle became confused by a cyclist and froze in the middle of an intersection in Austin, Texas for nearly two minutes.¹ Google’s technology is easily confused by such commonplace “threats” as potholes, rain, wind and trees.

¹ “Google’s Driverless Car Got Confused By a Cyclist,” Smithsonian.com, September 1, 2015 (<http://www.smithsonianmag.com/smart-news/googles-driverless-car-got-confused-cyclist-180956465/?no-ist>).

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 3 of 10

• In February, a Google robot car sideswiped a city bus in northern California, disabling the bus and requiring its passengers to evacuate. Google claimed that the accident was a “misunderstanding” (apparently by the robot driver) and a “learning experience.”² It is clear that there are many everyday routine traffic situations with which Google’s self-driving robot cars can’t cope.

Google insists that its “only interest” is in “ensuring that the U.S. is able [sic] safely and rapidly deploy safety innovations like fully self-driving cars that can help transform the lives of millions of people.” Science fiction and rosy self-serving projections aside, it is clear from the problems Google’s own vehicles have experienced that as of this date, robot cars are *not safe*. Indeed, Google has repeatedly refused to disclose to the public important details, including videos and other data, of the accidents and near misses its robot cars have been involved in.

The single greatest danger to the safety of America’s motor vehicle transportation system today is Google’s arrogant demand that it be permitted to deploy robot technologies without complying with federal rules of the regulatory road that have helped keep the nation’s streets and highways safe for the last half a century. The federal mandatory safety standards are the heart of NHTSA’s safety authority. Indeed, it has studied their effect and reported several years ago that they have saved over 600,000 lives since 1960 and countless horrible injuries.³

In its letter, Google claims that driverless cars will *reduce* automobile crashes and the human toll: “[w]e strongly *believe* that self-driving cars have the potential to prevent large numbers of crashes, injuries and deaths that occur every day on U.S. roads.” (Emphasis added.) But in its proposal to evade Federal Motor Vehicle Safety Standards (FMVSS), Google says that manufacturers would only need to show that the deregulated technology “would provide a level of safety equal to or greater than the level of safety provided for by any relevant FMVSS.” In other words, Google wants its technology to be measured by the current levels of carnage – and fast-tracked if it can show the same, or even one fewer, number of crashes, deaths and injuries.

However, Google offers *no evidence* that robot cars will be safer, or less expensive to maintain, than today’s vehicles. Indeed, Google’s proposal to preemptively deregulate driverless vehicle safety would allow it to *evade* the very regulatory process that will *ensure* that robot cars are safe *before* hundreds of millions of Americans are exposed to them.

2. Google Will Program Robot Cars to Make Life and Death Decisions.

² Google Self-Driving Car, Wikipedia (https://en.wikipedia.org/wiki/Google_self-driving_car).

³ Kahane, C. J. (2015, January). *Lives saved by vehicle safety technologies and associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger cars and LTVs – With reviews of 26 FMVSS and the effectiveness of their associated safety technologies in reducing fatalities, injuries, and crashes*. (Report No. DOT HS 812 069). Washington, DC: National Highway Traffic Safety Administration.

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 4 of 10

While Google is silent on its long run plans, most observers believe Google does not wish to build the hardware (cars) but hopes to corner the market on the robot vehicle software that will supposedly take the place of the human driver's brain. The experience of the airline industry and NASA, which have adopted zero tolerance accident policies, proves that no transportation system can ever be made 100% crash free. It will therefore be necessary for robot cars to make the split-second life and death decisions that human drivers make today. But humans will have to *program the robots* to do so.

Faced with imminent and unavoidable injury to pedestrians, other vehicles, or its own passengers, how will Google's "Artificial Car Intelligence" choose who becomes the victim?

NHTSA has not proposed standards to govern the writing and updating of the robot software. Indeed, we are unaware of any NHTSA request to Google or other manufacturers seeking information on the robot vehicle software the companies are currently employing.

Google has yet to disclose how it is programming its robot cars to effectuate the premeditated decisions of its programmers.

3. Driverless Technology is Extremely Vulnerable to Hackers, Criminals and Privacy Invasions

Even assuming that robot cars can be made to operate safely, they are considered extremely vulnerable to external threats such as hacking. After two security researchers managed to remotely hack into a 2014 Jeep Cherokee from a laptop ten miles away and disable critical functions such as the accelerator – paralyzing the car – the F.B.I. issued a warning to manufacturers on March 17, 2016, stating: "it is important that consumers and manufacturers are aware of the possible threats and how an attacker may seek to remotely exploit vulnerabilities in the future."⁴ The F.B.I. pointed out that hackers could gain access through a vehicle's cellular, USB, Bluetooth, or Wi-Fi internet connections: "An attacker making a cellular connection to the vehicle's cellular carrier – from anywhere on the carrier's nationwide network – could communicate with and perform exploits on the vehicle via an Internet Protocol (IP) address." Worst case scenarios range from criminals commandeering cars for smuggling or kidnapping to terrorists literally grinding commerce to a halt by orchestrating traffic jams.

More prosaic but equally controversial is the matter of privacy of the owner and occupants of robot cars. Again, Google's current practices are cause for alarm. Google is first and foremost an advertising company; 90 percent of its \$74 billion in revenue comes from advertising, and the more personalized the marketing the better. Google's entire business model is based on building digital dossiers about our personal behavior and using them online to sell the most personal advertising to us. "You're not Google's customer; you are its product – the one it sells to corporations willing to pay any price to reach you." Indeed, Google's Executive Chairman Eric

⁴ "Motor Vehicles Increasingly Vulnerable To Remote Exploits," Federal Bureau of Investigation, March 17, 2016 (<http://www.ic3.gov/media/2016/160317.aspx#fn1>).

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 5 of 10

Schmidt has said, “We don't need you to type at all. We know where you are. We know where you've been. We can more or less know what you're thinking about.”

The last time Google deployed high tech vehicles around the world, the result was Wi-Spy, the biggest wire-tapping scandal in history: the company's Street View cars sucked up data from tens of millions of private Wi-Fi networks, including emails, health information, banking information, passwords and other data. The company paid \$7 million to settle the case brought by the attorneys general from 38 states and Washington, D.C..⁵ A consumer class action suit is pending in federal court.⁶ The Federal Trade Commission imposed a \$22.5 million penalty on Google for violating a consent agreement and hacking around privacy settings on Apple's Safari browser, which is used on iPads and iPhones.⁷ Simply put, there is no reason to believe Google when it claims to be concerned about privacy.

Autonomous vehicles will be able to gather unprecedented amounts of information about the use of those vehicles. Who will own it? How will it be used? Just as we are now tracked around the Internet, will Google and other purveyors of driverless car technology now be looking over our shoulders on every highway and byway? Will the data be provided to insurance companies for underwriting purposes or to third parties that develop some kind of a driving score related to where and when individuals travel? Will it be used to serve in-car advertisements or advertisements through other venues in the Google suite of products? Will it be used to track our movements and those of surrounding cars and mobile devices so that Google's advertisers can better locate us? Google has refused to commit to using the data it gathers from robot cars only to navigate the vehicle.

4. Current Agency Procedures and Regulations Are Fully Capable of Keeping up with Advances in Driverless Technology.

Google's proposal to detour existing federal safety rules is premised on the supposition that complying with federal law is going to delay or slow down the safe deployment of new driverless technologies. But Google offers *not a shred of support for that argument*.

As noted above, robot cars are not idling in parking lots, waiting for permission to hit the streets; truly driverless vehicles are decades away. The only question is how to ensure the orderly development and deployment of the advanced technologies that will precede that date. So what, exactly, is the robot vehicle rush? Google never explains.

⁵ “Attorney General Announces \$7 Million Multistate Settlement With Google Over Street View Collection of WiFi Data,” March 12, 2013 (<http://www.ct.gov/ag/cwp/view.asp?Q=520518&A=2341>).

⁶ *In Re: Google, Inc. Street View Electronic Communications Litigation*, Case No.: 5:10-MD-02184 JW, United States District Court, Northern District of California.

⁷ Federal Trade Commission (<https://www.ftc.gov/enforcement/cases-proceedings/google-inc>).

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 6 of 10

Federal law provides NHTSA with ample authority to investigate and respond to advances in driverless vehicle technologies. The agency is not required to certify any particular technology. It must simply establish safety performance standards that apply to all vehicles, including robot vehicles.⁸

Under the law, the special arrangements Google is requesting are unnecessary because under the law NHTSA issues safety *performance* standards—not *design* standards. Thus, the measure of compliance is how the vehicle performs, not how it is designed, allowing manufacturers ample flexibility to develop and propose safety innovations.

Further, in reviewing this law, a 1972 decision by the Sixth Circuit Court of Appeals made it clear that federal vehicle safety standards are intended to force innovation.⁹ Congress intended that compliance with the federal standards would be appropriate to regulate new technologies, the court concluded.

There is no evidence that the agency is not capable of this task. Nor is there any evidence that the agency cannot secure the resources from the Congress to do this. Instead of deploying its vast federal lobbying force – for which it spent \$16.6 million in 2015 alone – to undercut American auto safety laws, Google could support the agency’s request and urge Congress to enhance the agency’s budget.

Absent any evidence that NHTSA cannot do its job, the only conclusion to be drawn from Google’s letter is that Google itself *cannot or does not want to* comply with the law. America’s automobile industry has had its share of challenges. Back in the day, it too resisted safety regulation; but having now acceded to it, the industry learned to thrive. Although it frequently pushes for longer lead times or lesser requirements to save costs, the industry does not claim duress when complying with safety requirements. Nor is there any indication that Google’s potential competitors in the tech sector are struggling to meet auto safety standards.

Perhaps Google wants to proceed in a hasty and precipitous manner because it does not presently have the ability to comply with the law. Or perhaps it merely seeks a shortcut around the regulatory expertise of its competitors. Whether because it is unable or unwilling to compete on the same terms as the rest of the industry, Google stands alone at this time in seeking a

⁸ Each federal safety standard that NHTSA prescribes “shall be practicable, meet the need for motor vehicle safety, and be stated in objective terms.” (49 USC 30111.) Motor vehicle safety is defined as “the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of accidents occurring because of the design, construction, or performance of a motor vehicle, and against unreasonable risk of death or injury in an accident, and includes nonoperational safety of a motor vehicle.” (49 USC 30102.) A federal motor vehicle safety standard is defined as a “minimum standard for motor vehicle or motor vehicle equipment performance.” (49 USC 30102.)

⁹ *Chrysler Corp. v. Department of Transp.*, 472 F.2d 659, 671 (1972).

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 7 of 10

regulatory bailout. But if Google sets a precedent of avoiding compliance with federal safety standards, other companies will surely want to follow for competitive and cost savings reasons.

5. Limits on Disclosure, Transparency and Public Participation Are Also a Threat to Public Safety and Security.

As American taxpayers have learned only too well, secrecy is itself a threat to the public safety, particularly when government and private industry is colluding in the shadows. Google is the world's most voracious collector of private information on other businesses and on individuals. Yet, as noted above, it has steadfastly refused to make public its own studies and data concerning driverless vehicles, information that would permit taxpayers, consumers, regulators, policymakers and law enforcement to assess the safety of Google's technology.

This is particularly problematic when it comes to vehicles that will be operated by robots with no human participation or intervention, based on technologies that have yet to be proven safe – or even invented.

It is precisely what Google seeks to avoid disclosing that DOT, NHTSA and the American people must know.

Finally, we must recognize that actions taken by each of you in the preceding months are at least partly responsible for Google's audacious demand, if not a direct inspiration for it.

In January 2016, DOT & NHTSA issued a "Policy Statement" pledging to develop a model self-driving car policy for the states within six months; yet to date the only actions the agency has taken is to schedule two informational hearings later this month – hardly a thorough inquiry if the deadline remains July.

On February 4, NHTSA sent a letter to Google responding to a November 12, 2015 request by the company that, among other things, the hardware and software in Google's robot car be treated as a "driver" for purposes of federal motor vehicle safety standards. Google argued that a driver is "the entity that operates the vehicle's controls, which in the context of a [driverless vehicle] is a computer-controlled self-driving system, not a human 'seated immediately behind the steering control system.'"

NHTSA stated that "[w]e agree with Google [that] its (self-driving car) will not have a 'driver' in the traditional sense that vehicles have had drivers during the last more than one hundred years." But NHTSA nevertheless agreed to Google's request. No public process of any kind preceded NHTSA's unprecedented determination, with its vast and profound implications, *none of which had been previously raised or discussed with the public*. Rather, NHTSA explained, it was simply categorizing its decision as an "interpretation" of existing law. In an unmistakable signal to Google that the agency was prepared to avoid the required formal rulemaking process,

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 8 of 10

NHTSA said it “further understands that the time it takes to conduct rulemakings may, in some instances, make such proceedings ill-suited as first-line regulatory mechanisms to address rapidly-evolving vehicle technologies.” To address this, NHTSA suggested that Google consider petitioning for “exemptions” from auto safety regulations. NHTSA offered no evidence in support of its critique of its own process.

Then, on March 17, 2016, the agency announced that it had secretly negotiated a Memorandum of Understanding with twenty auto manufacturers under which they agreed to deploy a markedly limited version or lowest common denominator of an existing set of safety technologies NHTSA itself has recognized as critically important, known as Automatic Emergency Braking, but not until the 2023 model year for cars, and the 2026 model year for trucks and vans – a full ten years from now. Not only were the public, automotive suppliers (who are often primary innovators in the automobile sector) and press excluded from this process, but the agreement is not mandatory (auto manufacturers can choose to comply with it or not at any time, or for any vehicle) and it cannot be enforced by the agency. Politico reported: “‘We’re getting these safety systems into vehicles much faster than what would have been otherwise possible,’” [Mr. Rosekind] said, referring to the lengthier formal rulemaking process that would have been more legally binding.”¹⁰

This latest action, permitting the industry to regulate itself as to the introduction of life-saving new safety features, is also an unprecedented departure from NHTSA’s statutory responsibilities. Congress enacted the National Traffic and Motor Vehicle Safety Act in 1966 “to reduce traffic accidents and deaths and injuries resulting from traffic accidents.” The analysis of the proposed legislation in 1966 by the U.S. Senate in its Committee report explained its necessity, stating that:

The promotion of motor vehicle safety through *voluntary standards* has largely failed. The unconditional imposition of mandatory standards at the earliest practicable date is the only course commensurate with the highway death and injury toll.¹¹

Agency officials have issued inaccurate and conflicting estimates of how long it would take the agency to comply with existing laws and promulgate formal standards that would require manufacturers to demonstrate the safety of the technologies. Relying on informal estimates to avoid the regulatory system is irresponsible: they undermine the agency’s credibility, and your own as leaders of the agency and the two Obama Administration officials directly responsible for auto safety. NHTSA and DOT’s job is not to help Google’s lobbyists and lawyers circumvent the

¹⁰ Politico Morning – Transportation, March 18, 2016 (<http://www.politico.com/tipsheets/morning-transportation/2016/03/faa-patch-ping-pongs-back-to-the-house-nhtsa-strikes-agreement-with-automakers-on-brake-technology-inhofe-calls-for-natural-gas-inclusion-in-vw-fix-213288>).

¹¹ Committee Report on S. 3005, The Traffic Safety Act of 1966, June 23, 1966, at 274 (Emphasis added).

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 9 of 10

nation's auto safety laws. Nor is it your job to make sure driverless vehicles are instituted quickly. Your responsibility is set forth in NHTSA's enabling legislation: "to reduce traffic accidents and deaths and injuries resulting from traffic accidents." It is troubling that as NHTSA celebrates the 50th anniversary of its establishment by The Traffic Safety and Motor Vehicle Safety Act of 1966 quoted above, we find it necessary to remind you of your mission and the core principles that the American people have entrusted you with.

We urge you to reject Google's invitation to join with it in seeking ways to weaken the agency's public safety mandate, and to oppose such legislation. Further, we urge you to require Google to answer the following questions concerning the safety and security of its robot vehicles within thirty days, and publish Google's answers on NHTSA's web site:

1. We understand the self-driving car cannot currently handle many common occurrences on the road, including heavy rain or snow, hand signals from a traffic cop, or gestures to communicate from other drivers. Will Google publish a complete list of real-life situations the cars cannot yet understand, and how you intend to deal with them?
2. What does Google envision happening if the computer "driver" suddenly goes offline with a passenger in the car, if the car has no steering wheel or pedals and the passenger cannot steer or stop the vehicle?
3. Your programmers will literally make life and death decisions as they write the vehicles' algorithms. Will Google agree to publish its software algorithms, including how the company's "artificial car intelligence" will be programmed to decide what happens in the event of a potential collision? For instance, will your robot car prioritize the safety of the occupants of the vehicle or pedestrians it encounters?
4. Will Google publish all video from the car and technical data such as radar and lidar reports associated with accidents or other anomalous situations? If not, why not?
5. Will Google publish all data in its possession that discusses, or make projections concerning, the safety of driverless vehicles?
6. Do you expect one of your robot cars to be involved in a fatal crash? If your robot car causes the crash, how would you be held accountable?
7. How will Google prove that self-driving cars are safer than today's vehicles?
8. Will Google agree not to store, market, sell, or transfer the data gathered by the self-driving car, or utilize it for any purpose other than navigating the vehicle?
9. NHTSA's performance standards are actually designed to promote new life-saving technology. Why is Google trying to circumvent them? Will Google provide all data in

The Honorable Anthony R. Foxx
The Honorable Mark R. Rosekind
Re: Self-Driving Cars
April 7, 2016
Page 10 of 10

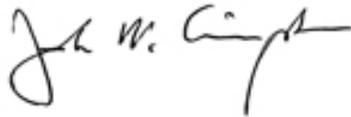
its possession concerning the length of time required to comply with the current NHTSA safety process?

10. Does Google have the technology to prevent malicious hackers from seizing control of a driverless vehicle or any of its systems?

Sincerely,



Harvey Rosenfield



John Simpson