

# Comment about CA DMV AV Regulatory Proposal

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Allow me to comment on the DMV's proposed autonomous car regulations. My comments will include my opinions, but I like to think that they are well founded opinions. I have been commenting and lecturing on autonomous vehicles for several years. My comments may also, at times, be blunt – perhaps too blunt. Please forgive. I would be more tactful, but there is too much at stake.

Allow me also to offer my condolences that the legislature dropped this task on you. As you have noted on several occasions, your core competence lies in vetting drivers, not cars.

Let me start with some general observations before moving into comments about the blackletter regulations.

These regulations fall very wide of the mark. They will needlessly send countless drivers and pedestrians to emergency rooms or to their graves. This is because they unduly retard safer vehicles, and they prohibit the safest vehicles yet developed.

AVs are not being introduced into a vacuum, but into a real world where cars driven in “conventional mode” kill 33,000 to 35,000 people per year and send 2.5 million per year to emergency rooms. And that is just in the U.S. Driver error is responsible for about 93% of these deaths and injuries. Of course, you know all of this.

This means the choice is not between introducing AVs, which will present some level of risk, or not introducing them and sparing the public the risk of being injured or killed by automobiles. The latter risk is already here, and the one-year death rate in the U.S. alone is three times the total of those who have died worldwide from Ebola.

## The appropriate standard for safety

This brings me to my first substantive point. Section 38750 requires that the DMV adopt a certification program to ensure that AVs “are safe to operate on public roads.” Subsection (e)(1). The section, however, does not define “safe.” The proposed regulation merely carries this language forward. 227.62(e). See also 227.74(b)(6) permitting revocation of a Permit to Deploy if the vehicles are not “safe.”

As a metric, this is a nonsensical standard. No dangerous product, be it car or peanut butter, is “safe.” The question is whether it is safe enough, and that requires elements of comparison, probabilities, and judgment. The regulations appear to require perfection before AVs can be introduced into a world already encumbered with the carnage of imperfection. That is contrary to sound public policy.

Compare this requirement with what the DMV licenses today. The last behind-the-wheel test I took was when I was 16 years old. I am now 73. Both my wife and I recently renewed our licenses and had to take the written test (along with reading the eye chart). Of the few questions asked, I am pleased to report that I got a perfect score. My wife (she has given me permission to report this) missed two questions. I do not know the substance of the two questions, but she could have chosen the minimum speed in a school zone as 95 mph or the double yellow line means safe to pass. It would have made no difference, we both got our licenses! Six or fewer errors is a pass for original applicants, 3 or fewer is a pass for renewal applicants. But a self-driving car has to be perfect! I would hazard the speculation that any autonomous vehicle offered for deployment will have a comprehensive knowledge of the Vehicle Code surpassing that of the vast majority of CHP officers.

As the old saying goes, licensing people who only know most of the rules of the road, then requiring a perfection of AVs is swallowing the camel only to choke on the gnat.

Since 38750 does not define “safe,” and 38750 requires the DMV to adopt implementing regulations, the DMV can articulate the standard of safety required of AVs prior to deployment. I would suggest that you include a definition of “safe” in your definition section. The standard should be one promoting the saving of lives and injuries. If AVs will result in fewer deaths or fewer or less severe injuries, than they should be deployed. This is for the reason that they will save real lives. These are people, not just numbers.

Let me give two examples plucked from the flotsam of the river or death and injury on which we presently float. At 12:30 in the morning on May 6, 2006, young Marcus Keppert made a choice that proved to be his last. Mark, who was 6’7” and weighed approximately 260 pounds, was dressed in dark clothing. He began crossing Almaden Expressway at Camden Avenue in San Jose. He was crossing against the light. He only made it part way. As he stepped into the No. 1 lane next to the left turn lane, he was struck and killed by a car driven by Mr. George Constantine Xinos.

The speed limit was 45 mph. Mr. Xinos may have been traveling between 50-55 (according to eyewitnesses, and a safe speed according to the investigating officer) or 69-76 according to a reconstruction extracted from the vehicle’s SDM. He was also under the influence – perhaps as high as 0.22.

Had Mr. Xinos’ SUV been autonomous, Mark would be alive today. And Mr. Xinos would not have faced the unpleasant prospect of prison. Two tragedies averted. See *People v. Xinos*, 192 Cal. App 4<sup>th</sup> 637, 121 Cal. Rptr.3d 496 (2011).

On New Year 's Eve, 2013, the Liu family was enjoying an outing in San Francisco. As they entered the crosswalk on Polk Street, an Uber driver, while apparently consulting his cell phone, struck and killed their daughter, six-year-old Sophia, and injured other members of the family. See: <http://time.com/3625556/uber-manslaughter-charge-san-francisco/> Had the Uber driver been driving an AV, Sophia would be alive today and the Uber driver would not have faced manslaughter charges. Multiple tragedies averted. This tragedy directly resulted in California's enactment of legislation governing transportation network companies such

Put another way - If unnecessary delay today postpones 95% deployment of AVs for one year (say from 2030 to 2031, just to pick a date), then during that arc of time, one might expect 33,000 needless deaths and 2.5 million needless injuries. Double that if the delay is two years. OK, even with full deployment there will still be some deaths. Even with current capabilities, AVs cannot yet cope with snow and seriously bad weather. Cut the number in half (a recent Casualty Actuarial Society study suggests that about one-half is the best that can be expected with current technology), and still the number of people who will be spared so that they and their families may go with their lives is enormous. See: Casualty Actuarial Society study - "49% of accidents contain at least one limiting factor that could disable the technology or reduce its effectiveness."

[http://www.casact.org/pubs/forum/14forum/CAS%20AVTF\\_Restated\\_NMVCCS.pdf](http://www.casact.org/pubs/forum/14forum/CAS%20AVTF_Restated_NMVCCS.pdf)

While reducing the number and severity of accidents per VMT below current levels should be enough to justify deployment, the appropriate standard of safety for AVs, as for any product, is that it be made as safe as it reasonable may be made to be. This, however, is a fluid standard and not readily amenable to the clumsy, and often ill-informed, regulatory process.

After the gathering of substantial data, agencies from time to time promulgate specific safety standards. NHTSA does this for cars. The Consumer Product Safety Commission does it for many other products. There are, of course, others more specialized agencies that do likewise. Outside these specific instances of regulation, the products liability system also creates the incentive on the part of commercial entities to advance safety to reasonable standards. Thus, there is already a regulatory system in place to advance safety, when reasonably possible, beyond that of the average pool of drivers.

This all suggests that these proposed regulations are not overly cautions. Indeed, by largely perpetuating the dangerous status quo, they may be quite dangerous.

#### The proposed regulations are two much too late

The proposed regulations do not regulate the deployment of NHTSA Level 3 and Level 4 automobiles, as intended. They simply ban Level 4 automobiles, which are the safest vehicles in development today, and purport to regulate the future deployment of vehicles that are in fact already on the road. Put another way, while the DMV was pondering these regulations in the slow lane, technology passed the DMV on the right. The DMV is now looking into technology's tail lights.

This is for two reasons. First, the regulation defines those vehicles requiring pre-deployment certification as “vehicles equipped with technology that has the capability of operating or driving the vehicle without the active physical control or monitoring of a natural person.” 227.02(d) [Emphasis added]. Even the enhanced safety and driver assistance exclusion from the definition does not include vehicles capable of driving or operating without the active physical control or monitoring of a natural person.

The difficulty with this definition is that cars fitting this definition are already on the road. Tesla’s Autopilot, Cadillac’s Super Cruise and others are capable of driving the car under conditions for which they were designed without the physical control of the driver. In fact, there are some rather notorious examples both here and in Europe of foolish drivers climbing into the back seat while the car drove itself. Although these features are marketed as safety enhancing or driver assisting features, and it is expected that drivers will monitor these vehicles at all times, the simple fact is that they are “capable” of driving themselves.

Secondly, the regulation also requires that the driver monitor the vehicle for safe operation at all times (227.84(c)), these regulations do not regulate self-driving cars. They have converted Level 3 vehicles to something more like Level 2.5. This requirement also strips much of the utility from AVs in that Level 3 vehicles should require the driver to take control only when the vehicles requests it.

This requirement also displays an almost naïve regard for the efficacy of human monitoring. Studies at Stanford and other experience suggests that once vehicles drive themselves, drivers become confident, their attention wanders, and they often begin to doze. In fact, similar studies have shown that doing other task (reading a book, texting, etc.) keeps the driver more alert. See: <http://www.dailymail.co.uk/sciencetech/article-3339387/Could-self-driving-cars-send-motorists-SLEEP-Experts-warn-drivers-need-distracted-illegal-activities-reading-watching-TV-stay-alert.html> These activities, however, are currently banned in California. Nevada, Florida and Michigan have no texting ban while a vehicle is in autonomous mode.

I had an opportunity to participate in a Stanford study by driving their AV simulator while they asked me to do various tasks. The simulator threw various challenges at me during the hour or so of driving. One challenge presented a car or two swerving into my lane while the vehicle was in autonomous mode. I instinctively grabbed the wheel, turned it and slammed on the brakes. I expect (although I do not know – it was a simulation and they did not kill me) that this was exactly the wrong thing to do. This intervention would likely have left me overturned in a ditch. Had the vehicle been left to react as programmed, I expect it would have either avoided or greatly mitigated any collision. My point is that in a well programmed vehicle, human intervention may well be the poorer option.

This brings me to my next point. This regulation would ban the safest vehicles in development today – the fully autonomous vehicle. Let’s start with the obvious. The leading developer, Goggle (Alphabet?) is advancing a car that goes only 25 miles per hour. Not only is the alert reaction time and the unexpected reaction time cut to nearly zero, but at that speed it can stop in very few feet (braking distance at 20 mph is about 20 feet). And it is soft. And, although it is

occasionally bumped from behind, it has a perfect driving record. And the vehicle's utility (remember why we tolerate vehicles at all) surpasses other AVs in the areas where it is programmed to operate.

I have not heard a persuasive argument against these vehicles. Consumer Watchdog has asserted that, since they have no steering wheel or pedals, if the vehicle pulled over for some reason, the passenger would be "at the mercy of Goggle." They do not explain what this rather sinister sounding assertion means. Is it that Goggle will try to sell Marcie, our passenger, laundry detergent? Kidnap Marcie for ransom? I would submit that what will happen is that Goggle will dispatch the nearest available AV to Marcie, and she will be on her way. Or, when she contacts them, they will tell her that the vehicle has stopped at its destination. Marcie will say, "Oh, I typed in A Street when I meant to enter B Street." "OK, Marcie, just reenter B Street and push 'Go' and you will be there in a few minutes. It is only 2 miles away." Or, they will dispatch the equivalent of AAA.

Compare this with what happens when you are at the mercy of General Motors. I was driving my GM pickup up Highway 9 above the town of Saratoga when the radiator hose parted. Surrounded in pungent clouds of coolant, I pulled over in a turnout. I walked about a mile to get cell phone reception and called my wife, Bonnie (remember, she is the one that missed two questions on her driving test). She arrived with water and tools, I reconnected the hose, and I went on my way after about an hour and one-half. During that time I was at the mercy of GM, and GM showed me no mercy.

So, the question is, which do you prefer?

There has been some suggestion in the blogosphere that developers of Level 3 and Level 4 cars may now abandon California, the cradle of innovation, leaving Californians to die in unacceptable numbers and leaving the elderly to rely on charity, friends, or relatives to go to medical visits. This would be a shame.

### Beware of Sheep's Clothing

While arguments against moving forward with deployment will be expressed in terms of safety, be aware that there may be other agendas beneath the surface.

Many OEMs may wring their hands about overregulation, but quietly they may be pleased that these regulations allow them to continue business as usual. Their preferred business plan is gradually to increase the features of vehicles, while keeping responsibility on the drivers. As long as vehicle utility is suppressed because drivers must pay 100% attention to monitoring the vehicle, they can sell many more vehicles. "Puleese, don't through me in the briar patch!"

They will be especially pleased that these regulations eliminate pressure from their main competitor, Goggle. There is nothing more likely to move a family from a two car family to a one (or no) car family than the availability of a service as cheap and convenient as a fully autonomous AV. Also, by stalling Goggle, this gives other competitors, like Ford, the opportunity catch up. This is like suspending the sale of Apple while Microsoft catches up. Or vice versa, depending on which you consider to be ahead at the time.

Insurers of passenger automobiles will also be pleased. A number of insurers have noted in their SEC filings that AVs present an existential threat. These regulations guarantee that they can continue with business as usual for the foreseeable future. There will simply be no Level 3 or Level 4 AVs in the near future.

Consumer groups that fund themselves by intervening in insurance rate filings will be pleased. I know of only one group, but they have been crowing that these proposed regulations are somehow a great victory for consumers. Tell that to Mr. Keppert, if he were alive to hear, or the parents of Sophia Liu. Tell that to the drivers facing possible prison because of these needless collisions. Consumer Watchdog and other opponents consistently refer to AVs as “robot cars.” I expect this is to trigger an irrational response to creepy robots. So long as passenger auto insurance is vibrant, so is their funding source.

The DMV may overweigh the inevitable criticism they will receive following the first serious injury or fatality from an AV. The political reality is that, since a name and face may be put to the victim, the DMV will not be properly credited with the nameless and faceless people who have escaped death or injury because of AVs. While this is an awkward political reality, it can lead to very poor public policy.

Municipalities may fear loss of traffic ticket revenue. Making operators responsible without fault for traffic violations committed only by the AV is one way to tax AV drivers. More on this later.

### 51 shades of Deployment?

In the absence of overarching federal standards, AV developers have lived in fear of a 51 jurisdiction patchwork or regulations. California’s proposed regulations make that fear a reality.

For example, all third-party certification testing must take place in California. 227.58(d)(5). Should California’s regulations prove a template for the 50 other states and the District of Columbia, then all third-party certification driving would have to be done in each of them. This would be great business for third-party certifiers, but unnecessarily burdensome for the deployment of lifesaving technology.

One can appreciate that a certification system that extends certification in one state to all states may create a race to the bottom. A self-certification system, as is used for NHTSA’s various requirements, avoids this problem. If a third-party certification procedure is to be used, it should be either federally sanctioned or generalized through something like interstate compacts. Perhaps reciprocity could be extended to one or more states whom all agree are sufficiently rigorous.

What is not acceptable is that a vehicle certified in California could not even cross the state line at Lake Tahoe. It is hard to imagine something more debilitating to the deployment of safer vehicles.

### Am I? Am I not?

Much turns on whether an AV is or is not in autonomous mode. Liability, responsibility for citations (in my view), and how other drivers may react. Many news articles and blog posts have been devoted to the fact that older people like me (73) drive very much like AVs – carefully, conservatively and cautiously. If so, so? No one has suggested banning me. At least not yet. Impatient and more aggressive drivers are not entitled to the road to themselves.

Nevertheless, it would be helpful to others to know that a vehicle is in autonomous mode. Just as drivers adjust to bicycles, pedestrians, farm equipment and trucks, it would be helpful to know that a car is in conservative, careful and law-abiding mode. Again, like me.

In England student drivers put a large, red “L” in the window to help other drivers adjust. One occasionally sees similar notices here. Until AVs are commonplace, a similar indicator would be in the public interest.

Apparently students at the University of Washington have developed a proposal for a system of indicator lights surrounding the license plate that would indicate when the vehicle is in autonomous mode. [Uniform Law Commission, Study Committee on State Regulation of Driverless Cars, Revised Report of the Subcommittee, p. 11 (2015)]. I understand that AV developers resist this and the proposed regulations do not mention an indicator. I would urge the DMV to revisit this issue.

### The blackletter

227.02(d)--The definition of autonomous vehicle is defective for the reasons stated above. Combined with 227.84 (c) (must monitor at all times) and 227.52(a)(5)(no fully autonomous vehicles), these regulations do not regulate autonomous vehicles. They prohibit them. The DMV should either do what it was charged to do or tell the legislature that it respectfully declines.

227.02(h)—The definition of critical driving error in combination with the testing regulation section 227.58(d)(6) leads to unacceptable results. If the autonomous vehicle performs a crucial driving error, then the test is a failure and the test is to be stopped immediately. This is because driving error is defined as any maneuver that requires an emergency disengagement or even evasive action by another vehicle or pedestrian. If an oncoming driver comes into the AV’s lane, and the AV driver take control, this is a “critical driving error.” In addition, if the oncoming car brakes, this is “evasive action” and constitutes a critical driving error on the part of the AV. If a cement truck forces the AV to move out of its lane and another driver slows to allow the AV room to avoid the collision, that is a critical driving error. If another driver pulls in front of the AV, causing the AV to slow down (a maneuver), and the car following the AV also slows down (evasive action), that is a critical driving error.

This section needs to be more tightly defined to include only those instances where the action, if done by a human, would be faulty.

I would also point out that when I took my behind the wheel driving test at 16, I do not think I scored 100%. I wonder why an AV should be held to this higher standard. Choking on the gnat again?

227.44—This provision is unworkable as written. It puts an obligation on the manufacturer to report all accidents involving, for example, damage to property (not defined). The difficulty is that the vehicles will be in the hands of the leases, not the manufacturer. The driver only has an obligation to report accidents involving property damage over \$750. This obligation, I believe, is largely ignored by the public. So there is no way that the manufacturer can know that the driver ran over a cat (property). Most of the accidents that have occurred in the hands of test drivers, rear enders, have been so minor that they were “walk aways.” This section should be revised to put the obligation to report damage only when reported to the manufacturer. Drivers should be reminded that they are obliged to report damage when more than \$750.

227.54(c)—This section refers to “vehicle owner.” Since these are only available by lease, the owner is the manufacturer. Does the DMV want to clear up this ambiguity?

227.56(a)(6)—Why limit the 30 seconds to accidents while in autonomous mode? It would be very useful to diagnose all accidents, and it may be that the accident occurred while moving to autonomous mode or immediately after disengaging autonomous mode. This is important information to have.

227.56(b)(5)(D)—“purchasing a previously-owned vehicle.” It will be previously owned by the manufacturer, but not “purchased” when it may only be leased.

227.56(b)(6)(C)—This appears to require that emergency services be alerted in all cases. As with any other car, whether emergency service should be alerted should depend on the circumstances. The car may be perfectly and safely parked with no need for emergency services. In addition, deployment of emergency services may trigger fees known colloquially as “crash taxes.

227.58(c)(1)(A) and (c)(3)(C). This section seems to include requirements for disclosure of any number of things “throughout the autonomous technology development process.” In some cases, the development process has spanned more than a decade, going back to the 2004 DARPA challenge and earlier. See: <http://www.techinsider.io/the-first-self-driving-cars-that-competed-in-darpa-grand-challenge-2015-10> If I am reading this correctly, this is a burdensome and useless requirement. It is probably impossible to fulfill. Testing information of this sort should be limited to the testing of the final version, and should be limited to a reasonable number of miles (or perhaps time). Some issue that appeared years ago and as long sense been addressed is of no use. It is like asking a college student how well he or she could read at the age of five, or asking Apple how many times the 1985 Macintoshes crashed.

227.58(c)(3)(B)—I am not sure the significance of a stop or lateral acceleration of 0.2g. Without more information, it is quite possible that the AV was avoiding careless drivers, a tree or rock in

the road, etc. I.e., the AV did just what it was supposed to do. When I recently renewed my license, I was not asked if I ever had a 0.2g stop. I expect I have, and that may be why I am 73.

227.58(d)(2)—“the autonomous technology and vehicle intended for deployment.” Unless you mean every single vehicles is to be tested, I think you mean something like “the final version of the subject autonomous vehicle that is intended for deployment.”

227.58(d)(3)—This is a very dangerous provision because it will cause manufacturers to leave unnecessarily dangerous vehicles on the road. In any sensible world, the manufacturers will be constantly updating and improving the technology. Indeed, I understand that a Goggle vehicles will not engage autonomous mode until it has received its daily update. When Tesla distributed its Autopilot, it soon discovered that a few drivers were doing foolish things with it. I understand that it then downloaded some restrictions (“changes to the autonomous vehicle’s autonomous technology,” in the words of (d)(3)). This precaution would not be permitted under this provision.

Does this section, then, create an immunity from liability for the OEM who knows of an improvement? Can they argue that when they discover an obvious hazard or a persistent misuse, they are powerless to improve the program without resubmitting the vehicle for recertification?

The problem is not made any better by 227.64(b). This section purports to forbid “material change,” but 227.58(d)(3) prohibits “any further changes.” Apart from perpetuating possible dangers, the two sections are inconsistent. In addition, 227.64(b)(2) prohibits any “new behavioral competency.” Behavioral competency is defined so broadly that it would prohibit the addition of a new and more effective way to identify a bicyclist signaling a turn, recognize a boy running into the street with a beach ball, or distinguish a piece of cardboard from a piece of plywood. Put another way, if the car read at only a 5 year old level when certified, it will likely remain that way until recertified. Indeed, artificial intelligence is moving at such a pace that cars, like people, may actually learn as they drive. This would be forbidden by these provisions.

I would suggest, if the DMV wants to keep something along the lines of control over changes, that the vehicle models that have been updated with changes be recertified every three years. An exception can be made if accidents implicating any changes emerge.

227.66—Without further definition, “defect,” like “safe,” has little useful meaning in this context. In products liability law, a course that I have had the privilege of teaching many times, much of the course is spent attempting to define in various contexts whether a danger is also a defect. A knife, though dangerous, is not defective, but a gun without a safety is defective. “Defect” needs to be further refined. I would be happy to help with this if the DMV is inclined to clarify this.

227.68(a)—Given that the proposed regulations make it extremely burdensome to improve a car’s technology, I can understand why AVs should have a 3 year sunset. This, however, is because inability to improve the program is a defect, if I may use that word, in the regulations.

227.68(c)—Why only a lease? If it is to maintain some control over the technology, that will undoubtedly be distributed on the basis of a license, or End User License Agreement (EULA).

The manufacturer will own and control it, so it should make no difference that the purchaser owns the rest of the metal.

More to the point, if these cars are safer, deployment should be encouraged, or at least not discouraged. Purchasing or leasing a car that must be retired after only three years is not economically attractive, so it is unlikely to attract many participants. Again, bad public policy.

227.68(d)—“The manufacturer shall gather data regarding the performance, usage and operation” of the vehicle. This information, however, is not limited to that required by subdivisions (1)-(4). Much of this information, along with other information, will be useful, though not “necessary” for improving the safety of the vehicle. This potentially conflicts with 227.76, which requires disclosure of the collection of information that is “not necessary for the safe operation of the vehicle.” The usual meaning of “necessary” is “absolutely needed.” Since the manufacturer is required to collect information that is not “necessary,” there must be a disclosure and “approval of the operator” in every case. It would be helpful, therefore, for the DMV to adopt a safe harbor disclosure form that can routinely be used.

It is also not possible to get approval from the operator of the vehicle because any properly licensed person can drive any AV for which the license is valid. The approval of the original purchaser/leasee must be binding on any other operator of the vehicle.

In the age of predictive analytics, a very broad range of information about usage may prove useful to improving safety. For example, it was discovered that men who purchased beer were more likely to also purchase diapers!

It should be noted that the information mandated to be collected under 227.68 goes beyond that permitted under the regulations to applicable to insurers. Insurers may collect only mileage. Cal. Code Regs. Tit. 10, sec. 2632.5(i)(5)(a)(insurer may use technological device only for “determining actual miles driven . . .”) Since manufacturers are required to insure these cars, their insurers will want access to the same usage information that their insureds are using to monitor and improve the safety of their cars. Moreover, operators have no legitimate privacy interest in this information because collection is a precondition to their acquiring an AV. This potential conflict may need to be resolved.

227.82—Why must the label be verified by the department or a dealer? Why not the manufacturer? Tesla, for example, does not have dealers.

227.84(c)—Imposing responsibility for monitoring the vehicle at all times and being able to take “immediate control” is a bad provision for the reasons stated in the introduction.

Also, what, exactly, does “shall be responsible” mean? Does it carry with it responsibility for personal liability when the automobile, through no fault of the operator, runs a stop sign or mounts the curb.

Subsection (d) (“responsible for all traffic violations”) is also very bad public policy. Fixing strict liability for tickets on innocent operators has far reaching adverse consequences. AVs not only present some utility to operators, but they also generate positive externalities that benefit

many others –e.g., pedestrians, bicyclists and others who are spared injury or death, lower congestion, and more efficient use of infrastructure and land. **[Cite to Rand study]**

The operator, however, pays the price for the technology from which these benefits flow.

Sound public policy should encourage this individual investment rather than discourage it with an arbitrary tax on innocent operators who cannot possibly be deterred (other than from adopting an AV) by the tax. It will certainly discourage the deployment of these safer vehicles because human nature does not warm to being punished for something that is the fault of others (the manufacturer). If the car runs a stop sign, there is simply nothing the operator could have done about that. In that event, there should be no citation to the operator.

What is a more sensible approach to traffic infractions by AVs? Sending a frustrated, innocent and angry operator before a court to have his pocket picked (in the operators very reasonable opinion), is not. Rather, the infraction should take the form of a notice of the apparent violation to the manufacturer with a copy to the DMV. There should be a reasonable fee based on cost assessed on the manufacturer for issuing the notice. The registrations of all AVs should have the contact information for the manufacturer for this notice. If possible, the operator should be able to bookmark the incident in the vehicle's memory and forward that information to the manufacturer. The manufacturer could, then, examine the event and determine whether the incident requires remedial action.

In this way, not only are they put on notice of a possible issue (notice may be relevant should the issue arise in the future), but, if necessary, they could fix it not only for the subject vehicle, but for the entire fleet.

Or could they? See section 227.58(d)(3) (“the manufacturer shall not make any further changes to the autonomous vehicle’s autonomous technology . . . .”) This dangerous aspect of the regulations is discussed above.

This section is, however, even more insidious. An operator who is responsible for traffic tickets incurred because of faults in the AV will incur points. These, then, will cause the operator to lose the Good Driver Discount on not only the AV (if any) but also on any other standard vehicle the operator owns. This is a nonsense result. It is much like raising the price of a person's manual vacuum cleaner because their self-driving vacuum cleaner ran over someone's foot. The situations are so different that they should have no bearing on each other.

This section presents yet a further problem. If the operator is “responsible for all traffic violations,” then if the AV violates a traffic law, this section puts the operator in violation of a statute, ordinance or regulation. Evidence Code sec. 690, then, raises a rebuttable presumption that the operator was negligent. This, then, will have to be litigated in every case even if there is no doubt the, not the operator, violated the rule of the road.

I would suggest that this section be changed. Operators should not be mulched in fines when they have done nothing wrong. It is neither fair, nor good public policy.

Failing that, I would suggest that a provision be added that nothing in these sections is intended to affect issues of civil liability. These questions can, then, be left to the courts without the burden of attempting to determine just what “responsible” means in these regulations.

Respectfully submitted,

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