

New roads: Impacts of autonomous vehicles on law and insurance

By David F. Klein, Esq., *Pillsbury Winthrop Shaw Pittman LLP**

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We are speeding into a new era of automation in personal transportation. Major automakers are driving rapidly toward offering autonomous vehicles, often in collaboration with nontraditional market players such as Google and Apple.

Major suppliers also are developing technologies to offer into the marketplace through the automakers. And players like Uber and Lyft expect to develop or use these technologies to displace vehicles driven by people. The age of the Jetsons is upon us.

Already present, driverless technology is expected to become a major force in the marketplace by 2022, and it may predominate by 2030. The benefits will be substantial. According to the National Highway Traffic Safety Administration, 94 percent of serious crashes are due to human error. In 2015 there were more than 35,000 traffic fatalities in the United States.

System errors (or the choices systems are programmed to make) will become products liability issues

In 2010, motor vehicle accidents cost \$594 billion in loss of life and decreased quality of life because of injuries, as well as \$242 billion in lost economic activity.¹

Driverless cars will offer opportunities to alleviate rush hours, reduce fuel consumption and improve independent mobility for the elderly and disabled.

As with any disruptive technology, there will be displacements. These changes will occur in the automotive marketplace, the insurance industry and the legal regimes that affect both. Of course, they will also affect the driving and riding public.

THE LONG GESTATION OF VEHICLE AUTONOMY

Automation of the driving experience is nothing new. Chrysler introduced its "Auto-Pilot," the first commercially available cruise control, in 1958, touting its benefits of assuring compliance with speed limits and saving gas.²

This new product hit the streets closer to the last model year of Ford's Model T than to the advent of Tesla's new Autopilot technology.

In recent years further incremental steps toward full automation have been taken, including warning systems for lane departures and forward collisions, automatic braking, adaptive cruise control, and self-parking capabilities. We have been traveling the road from the horseless carriage to the driverless car for decades.

Technologists and engineers have classified the stages along that road in six levels:

- Level 0 (no automation). The human driver does all the driving.
- Level 1 (driver assistance). The driver controls the vehicle, but some driving assistance features, such as cruise control or lane centering, may help the driver control the steering or maintain speed, but not both at the same time.
- Level 2 (partial automation). Automated functions like acceleration and steering are combined, but the driver must remain engaged with the driving task and monitor the environment at all times.
- Level 3 (conditional automation). The driver is not required to monitor the environment, but must be ready to take control of the vehicle upon a warning from the vehicle automation system.
- Level 4 (high automation). The vehicle can perform all driving functions under certain conditions, but the driver may have the option of overriding the computer and resuming control of the vehicle.
- Level 5 (full automation). The vehicle can perform all driving functions under all conditions. The driver may have the option to take control of the vehicle, or the steering wheel may disappear entirely, turning the driver into a mere passenger.

The implications of this changeover will be profound, but not all of them will be immediately apparent. Just as horse-driven carts



remained on the roads well into the 20th century, “people driven” vehicles will not disappear overnight.

Love of driving is strong in American culture, and it will be a long time before enthusiasts, or cars geared toward them, entirely disappear. Intimations of this reality are seen in Ford’s recent decision to stop making cars except for its iconic Mustang, a longtime driver favorite.

Human drivers will remain on the roads, driving vehicles with Level 0 through Level 5 technology, well into the middle years of the 21st century. However, they will be waging a losing battle with driverless cars for space on the public highways.

But governments and insurance companies, conscious of the benefits of nudging humans out of the driver’s seat, will adopt measures to encourage change, ranging from the installation of designated driverless car lanes (eventually a decided majority of all roads), to punitive taxes and higher licensing fees and insurance premiums for late adopters.

GETTING FROM HERE TO THERE

Autonomous vehicles are already on the streets but, given the evolutionary nature of the technology, not all human users have learned the new rules of the road.

The intersection of individual responsibility and product liability threatens to upend existing actuarial assumptions.

In the widely reported fatal accident of a Tesla with Autopilot technology, the driver crashed into a truck while allegedly ignoring more than 10 seconds of warnings from his vehicle.³ The crash demonstrated the danger of complacency rooted in a misunderstanding of the limits of the Level 3 automation available in some vehicles today.

While driverless technology is expected to eliminate 90 percent of accidents, the potential for human error will remain in most vehicles. In some situations, the potential may even be magnified by the lulling effects of a passenger-like experience, including the invitation to more distracting conversations or the opportunity to get a head start on work while commuting.

In fact, the rigidly “correct” driving habits of autonomous vehicles may alter the driving experience for human drivers who must learn to share the roads with them.

Vehicles that strictly observe speed limits or stop on cue for pedestrians may create unfamiliar traffic situations, fraught

with their own accident risks. We’re used to imperfect companions on the road.

Moral questions about the interaction between people and artificial intelligence will also be heightened as driverless technology is implemented. Like human drivers, automated vehicles will confront stark, split-second choices. Should the vehicle avoid a careless pedestrian, even at risk to its owner’s life or limb?

Surveys show most people say pedestrians should come first. But, unsurprisingly, when asked whether they want a car that puts pedestrian safety ahead of their own, respondents tend to demand greater loyalty.⁴

Importantly, this will be a deliberate programming issue and, thus, not a question of “accidents” in the traditional sense. Manufacturers will program their systems to make choices, and will face liability claims from pedestrians and owners when computers execute decisions they were programmed to make. Liability rules may have to be adapted to reflect the necessity of programming for such hard choices.

A regime of strict, but perhaps comparatively moderate, liability — something akin to workers’ compensation — may emerge to distribute the social costs of the changes fairly among all stakeholders.

IMPACTS ON THE INSURANCE MARKETPLACE

Today, a major component of the insurance market is auto liability insurance sold to individual drivers. This market is likely to contract.

Initially, the reduction in driver engagement in the act of driving, implicit in Level 1 to Level 4 vehicles, will reduce but not eliminate the need for personal liability insurance.

And there will be a move to completely eliminate the requirement for owners of Level 5 driverless cars to maintain personal liability insurance, producing popular legislation that lawmakers are likely to adopt.

Manufacturers of driverless cars and manufacturers and programmers of automation technology will become responsible for the performance of vehicle guidance systems. System errors (or the choices systems are programmed to make) will become products liability issues, within the products coverage of manufacturers’ general liability insurance.

On the auto insurance side, while accident claims constitute a “loss” item for insurers, they are associated with a corresponding premium income. If anything like the predicted reduction in accident rates occurs, liability insurance for

drivers will take a diminishing market share, and some insurers will be driven out of the marketplace.

Historically, insurers have constituted an important force to induce good driving behavior. Just as property insurers have long offered better rates to building owners who install sprinkler systems, auto insurers offer better rates to those with better driving records.

As the balance shifts from people-driven to autonomous vehicles, insurers may create incentives for drivers to hasten the shift. For example, rates for traditional drivers are likely to increase significantly, while rates for users of driverless cars will likely be far lower. These effects will accelerate as the market shifts to driverless cars, hastening the disappearance of the traditional driver.

Vehicle makers, suppliers, drivers and insurers are all in for a bumpy ride. Buckle up!

But driverless cars will not be accident-free. Programming glitches, the failure of sensors or other related systems, and even hacking will create insurable events. What is now an issue of personal liability for driver error will transform into fertile ground for products liability claims against vehicle manufacturers and their suppliers, as well as operators of autonomous vehicles.

We are likely to see coverage claims under the products coverage of general liability policies and possibly under cyberpolicies for hacking incidents. This will raise interesting questions about whether current policy forms are adequate to for these types of claims and how financial responsibility will be allocated.

As with earlier market-busting changes, we can expect to see insurers argue that older coverages were not designed to cover the new risks. General liability policies will likely be modified to exclude coverage for automobile accidents resulting from driverless system “errors,” which will be broadly defined.

Concurrently, new policy terms and endorsements will likely be offered to automakers and their suppliers for additional premiums to meet the new exposures insurers say are excluded from existing coverage.

DRIVING THE LAW INTO UNCHARTED TERRITORY

For the years autonomous and people-driven vehicles continue to share the road, there will be interesting questions of liability-sharing between individual auto liability and

product liability insureds — particularly where individual operators drive under a “no fault” regime.

And the balance between individual auto insurance and autonomous vehicles covered by products liability-type insurance will continue shifting over time, creating legal disputes and market issues.

News articles underscore this point. One story that ran in early 2018 covered two traffic stops involving Tesla vehicles equipped with Autopilot.

One driver was arrested with a blood-alcohol content nearly double the legal limit, and the other slammed into the back of a parked firetruck at high speed. Facing charges of reckless driving, these drivers claimed they weren’t driving at all because their cars were on Autopilot.⁵

Of course, Tesla’s current technology is below Level 5, requiring driver supervision, so the drivers were, in fact, driving. But the new legal defense reflects the complexity that awaits owners in the coming driverless world.

Level 5 owners may, indeed, be able to avoid legal liability for accidents in most instances. But the answer will be different for the drivers of Level 3 and Level 4 vehicles. And how will the law assess liability when a Level 4 driver collides with a driver from another level?

Will there be a presumption of liability on the part of human drivers? A sliding scale? Will the degree of exposure depend on the allocation of driving responsibility between the driver and any autonomous system? Will various permutations of vehicle technology be associated with different burdens of proof? The law will have to adapt to reflect these permutations.

And how will insurers respond? Currently the distribution of liabilities is driven by the commoditization of accidents, the need for no-fault coverage and the presence of uninsured and underinsured motorists. The intersection of individual responsibility and product liability threatens to upend existing actuarial assumptions.

As more liability shifts from one insurance market to another, questions of “fault” will drive how much of the liability stream shifts from one marketplace to another. Litigation and legislation will both intensify. And the markets will take a long time to stabilize, as the shift from people-driven to driverless automobiles continues into the 2020s, 2030s and beyond.

Vehicle makers, suppliers, drivers and insurers are all in for a bumpy ride. Buckle up!

NOTES

¹ Statistics are drawn from data provided by the National Highway Traffic Safety Administration. See *Automated Vehicles for Safety*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., <https://bit.ly/2w4Mzrr>.

² Paul Niedermeyer, *Automotive History Capsule: Chrysler's 1958 Auto-Pilot — 56 Years Before Tesla's Autopilot*, CURBSIDE CLASSIC (Jan. 23, 2018), <https://bit.ly/2L86hGa>.

³ *Tesla's Autopilot Played a 'Major Role' in Fatal 2016 Crash*, FORTUNE (Sept. 13, 2017), <https://for.tn/2NHrZCv>.

⁴ John Markoff, *Should Your Driverless Car Hit a Pedestrian to Save Your Life?* N.Y. TIMES (June 23, 2016), <https://nyti.ms/2JawphK>.

⁵ Cleve R. Wootson Jr., *Feds Investigating After a Tesla on Autopilot Barreled into a Parked Firetruck*, WASH. POST (Jan. 24, 2018), <https://wapo.st/2KK16RX>.

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ABOUT THE AUTHOR



David F. Klein is an insurance coverage litigation partner at **Pillsbury Winthrop Shaw Pittman LLP** in Washington. He handles general and excess liability, pollution legal liability, first party/business interruption, fidelity/crime, directors and officers, and errors and omissions coverage issues. He has resolved insurance-related environmental and asbestos claims worth billions of dollars in the petrochemical, mining and metals, forest products, transportation, manufacturing and utilities industries.

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