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ARTICLE

Tempe Incident Prompts an Autonomous Vehicles Regulatory Review

On March 19, 2018, Uber Technologies Inc. ("Uber") halted public road testing of autonomous vehicles — a day after reports that one of its operated autonomous vehicles struck and killed a woman in Tempe, Arizona (the "Tempe Incident"[1]). The collision occurred despite having a human "back-up" driver behind the wheel. Whether Uber or the driver will bear any responsibility for the Tempe Incident is yet to be determined. Nonetheless, Ontario's Ministry of Transport spokesman, Bob Nichols, has stated that "[Ontario] will be following the situation in Arizona closely, and will consider what measures are appropriate as more becomes known."[2]

With a small sample of self-driving vehicles currently being tested on public streets in Ontario and around the world, the Tempe Incident discloses the need to re-examine the regulatory framework for autonomous vehicles as the technology outpaces the promulgation of laws to regulate it.

Canada: Federal Level

In Canada, there is currently no *federal* legislation or policy guidance on autonomous vehicles. The 2017 federal budget provisioned Transport Canada $76.7 million over five years to help the government update transportation regulations, certifications, and standards. This specifically included, "[d]eveloping regulations for the safe adoption of connected and autonomous vehicles and unmanned air vehicles."[3] Furthermore, the 2018 federal budget allocated $11.5 million for a review of the regulatory requirements of "emerging technologies such as autonomous vehicles."[4] Nonetheless, the Standing Senate Committee on Transport and Communications concluded in its recent report that Canada continues to be ill-prepared for the fast-approaching future of transportation.[5] In the report, the Committee made a series of recommendations that included the creation of a joint policy unit to coordinate federal efforts and to implement a national strategy on automated and connected vehicles.

Ontario

Ontario is the first Canadian province to introduce specific autonomous vehicle regulations (Regulation 306/15).[6] These regulations are focused on the higher levels of autonomy (SAE Levels 3-5)[7] and are for testing purposes only. Under the regulations, a driver must be present and remain seated in the vehicle at all times, be trained to safely operate it, monitor its safe operation throughout the test, and be able to assume immediate control. All vehicles accepted for this program are subject to existing *Highway Traffic Act* rules and any penalties will apply to the driver/vehicle owner.

United States

The U.S. National Highway Traffic Safety Administration ("NHTSA") issued specific guidelines on September 20, 2016 for the safe development of autonomous vehicles.[8] Rather than prescribing revised rules, the policy was issued as agency guidance to speed the delivery of an initial regulatory framework and best practices to guide manufacturers and other entities in the safe design, development, testing, and deployment of autonomous vehicles.[9] On September 12, 2017, these guidelines were updated by the U.S. Department of Transportation ("DOT") and NHTSA in *A Vision for Safety 2.0*.[10] It is instructive to note that the resulting guidelines do not include requirements that manufacturers register prior to deploying autonomous vehicles or voluntarily report on compliance with NHTSA's recommended guidelines.[11] The NHTSA now clarifies that although companies are encouraged to consider the best practices found within *A Vision for Safety 2.0*, doing so is voluntary and elective in nature.[12] On September 6, 2017, the United States House of Representatives further facilitated the context for the deployment of autonomous vehicles by unanimously approving the *SELF DRIVE Act*.[13] Should the *SELF DRIVE Act* become law, it will allow automakers to deploy autonomous vehicles without meeting existing auto safety standards in the first year of enactment. Although the Act includes reporting requirements in the event of an accident, there is currently no requirement that a human driver be present and able to assume control of the vehicle. In light of the recent Tempe Incident, as described above, the foregoing approach — and reduced requirements — may receive some scrutiny and/or re-evaluation.

Europe

The European approach has its genesis in the 1968 Vienna Convention on Road Traffic (the "Vienna Convention") which requires a human driver to be present and have control over the vehicle at all times.[14] On March 23, 2016, amendments to articles 8 and 39 of the Vienna Convention came into force to adapt the treaty to modern advances in vehicle technology. As of this date, automated driving technologies that transfer driving tasks to a vehicle will be explicitly allowed in traffic, provided that these technologies are in conformity with the United Nations vehicle regulations or can be overridden or switched off by the driver.[15] Moving to *fully* autonomous vehicles, however, may require making more basic amendments to the Vienna Convention.

Germany has already implemented autonomous vehicle legislation. On June 21, 2017, an "AV Bill" came into force which allows for the use of SAE level 3 autonomous vehicles on public streets. Under the new law, a driver will bear the responsibility for accidents that take place under his or her watch.[16] Neither Canada nor the United States has implemented similar federal (or local) legislation.

Germany has also become the first country to address the ethical concerns associated with the operation of autonomous vehicles.[17] Some salient prescriptions include an acknowledgment that ethical decision making cannot be heuristically standardized or reduced to monolithic decision making.[18] Furthermore, Rule 7 of the German legislation adds that in a hazardous situation that proves to be unavoidable, "the protection of human life enjoys top priority in a balancing of legally protected interests,"[19] and autonomous "systems must be programmed to accept damage to animals or property in a conflict if this means that personal injury can be prevented."[20] There is no similar direction in Canada or the U.S.

The Road Ahead

Virtually every major automobile manufacturer is developing autonomous vehicles, with companies boasting that vehicles will be ready for consumer applications within the next few years. Although countries like Germany have progressed further in their regulatory development than Canada and the United States, the Tempe Incident exposes the necessity of having a set of concrete and predictable regulatory requirements for the testing and refinement of the technology on public roads. Arizona's Executive Order 2018-04,[21] which allowed the autonomous vehicle in the Tempe Incident to drive on public streets, permits the testing or operation of self-driving vehicles on public roads without a person present in the vehicle. Ontario currently does not permit "driverless" testing, although at some stage it will no doubt be required to do so in order to fine tune the technology.

In view of the Tempe Incident, it is important that Canada and other members of the international community collaborate on drafting new laws and regulations to prepare for the safe and effective consumer deployment of autonomous vehicles. This effort should consider a driver's presence in the autonomous vehicle during testing, the ability of a driver to intervene should a hazardous situation be apprehended, the need for regulatory alignment and cooperation, and a system of agreed-upon ethical considerations for autonomous driving.

While BLG monitors the efforts and impacts of autonomy for all modes of transport (i.e., cars, trucks, trains, ships, and aircraft), for the purpose of this article "autonomous vehicles" refers to vehicles driven on Canadian public roads.

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[1] Alicia Siekierska, "Uber halts pilot program in Toronto after a woman is killed by a self-driving car in Arizona," *Financial Post*, March 2018.

[2] *Ibid*.

[3] Canada, Minister of Finance, "Federal Budget 2017" (Ottawa: March 22, 2017) at 140.

[4] Federal Budget 2018" (Ottawa: February 27, 2018) at 118.

[5] The Standing Senate Committee on Transport and Communications, "Driving Change: Technology and the Future of the Automated Vehicle" (Ottawa: January 29, 2018).

[6] Ontario Regulation 306/15.

[7] The SAE Standard J3016 defines the level of automation in an autonomous vehicle from partially to highly automated (*i.e.* anywhere between SAE Levels 1 and 5).

[8] Federal Automated Vehicles Policy," *National Highway Traffic Safety Administration*, (September 2016), [*Federal Automated Vehicles Policy*].

[9] *Ibid* at 6.

[10] U.S. Department of Transportation, "Automated Driving Systems (ADS): A Vision for Safety 2.0," *National Highway Traffic Safety Administration*, September 2017.

[11] *Federal Automated Vehicles Policy, supra*.

[12] U.S. Department of Transportation, "Automated Vehicles for Manufacturers," *National Highway Traffic Safety Administration*, September 2017.

[13] "House Passes Cárdenas Bill in Autonomous Vehicle Legislative Package," *United States House of Representatives*, September 2017.

[14] *Convention on Road Traffic*, 19 September 1949, 125 UNTS 3 art 26(b) (entered into force 26 March 1952, accession by Canada 23 December 1965).

[15] United Nations Economic Commission for Europe, Press Release, "UNECE paves the way for automated driving by updating UN international convention," March 23, 2016.

[16] "Germany adopts self-driving vehicles law," *Reuters*, May 2017.

[17] Ethics Commission, "Ethical Rules for Automated and Connected Vehicular Traffic," *Federal Minister of Transport and Digital Infrastructure*, June 2017.

[18] *Ibid* at Rule 8.

[19] *Ibid* at Rule 7.

[20] *Ibid* at Rule 7.

[21] Arizona, "Executive Order 2018-04: Advancing Autonomous Vehicle Testing and Operating; Prioritizing Public Safety," March 2018.

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Services: Autonomous Vehicles, United States