Intelligence MEMOS

From: Donald N. Dewees

To: Federal and Provincial Ministers of Transportation

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Re: AUTOMATED VEHICLE SAFETY STILL DEPENDS ON THE DRIVER

The billions of dollars in projected benefits from accident prevention by autonomous (self-driving) vehicles will only be realized if drivers use those features and if they do not respond to increased safety by driving more dangerously. Basing motor vehicle insurance premiums on use of asafety features nd on actual safe driving, and reserving some highway lanes for automated vehicles can encourage the use of automated safety features and safe driving generally.

Ironically, the safety benefits of automation ultimately depend on drivers, some of whom will not use those features which they can deactivate. Automated vehicle (AV) safety features will not allow dangerous driving, taking some of the speed out of aggressive driving. Some drivers think accidents will not happen to them; many drivers are protected from the costs of major accidents by health insurance and motor vehicle insurance.

Most insurance premiums are only modestly affected by driving behaviour. This largely insulates drivers from the consequences of their driving, contributing to dangerous driving. As a result, some of the drivers who most need automated help may not use it. But today's devices can record when and where the car is driven, compliance with speed limits and aggressive driving. Some insurance companies already provide discounts for clients who use such recording devices to prove safe driving. Devices could also record whether AV features are engaged and identify driving inconsistent with what the AV would have done. Using this information to set rates could send a powerful financial signal to drivers to buy and activate AV safety features and not to drive dangerously.

Governments will not mandate the utilization of AV features until they are proven safe over years of public use, if ever. In the meantime, we need to consider whether to encourage or require insurance rate-setting that reflects the potential benefits of utilizing collision-avoiding AV features and of driving safely.

We should also consider creating a positive incentive to use AV collision-avoidance features by reserving one or more lanes on some limited access highways for vehicles that embody and activate a specified level of automation. This would be analogous to restricting access to existing High Occupancy Vehicle (HOV) or High Occupancy Toll (HOT) lanes. To the extent that the reserved lanes are less congested, this will encourage the purchase and use of AV features that some drivers might otherwise deactivate. This approach can be initiated on a few highway lanes when the only a fraction of vehicles on the road have qualifying AV features. The network of reserved AV lanes can be expanded as the demand grows, perhaps with HOV and HOT lanes converted into automated vehicle lanes.

I have argued that it will take decades before most vehicles can provide automated operation for most trips. In the meantime, encouraging safety-based insurance premiums and considering the establishment of reserved AV lanes on some roads can increase the real-world safety benefits of automated vehicles.

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