TRAFFIC INJURY RESEARCH FOUNDATION

ROAD SAFETY MONITOR 2014:
KNOWLEDGE OF VEHICLE SAFETY FEATURES IN CANADA

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The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety research institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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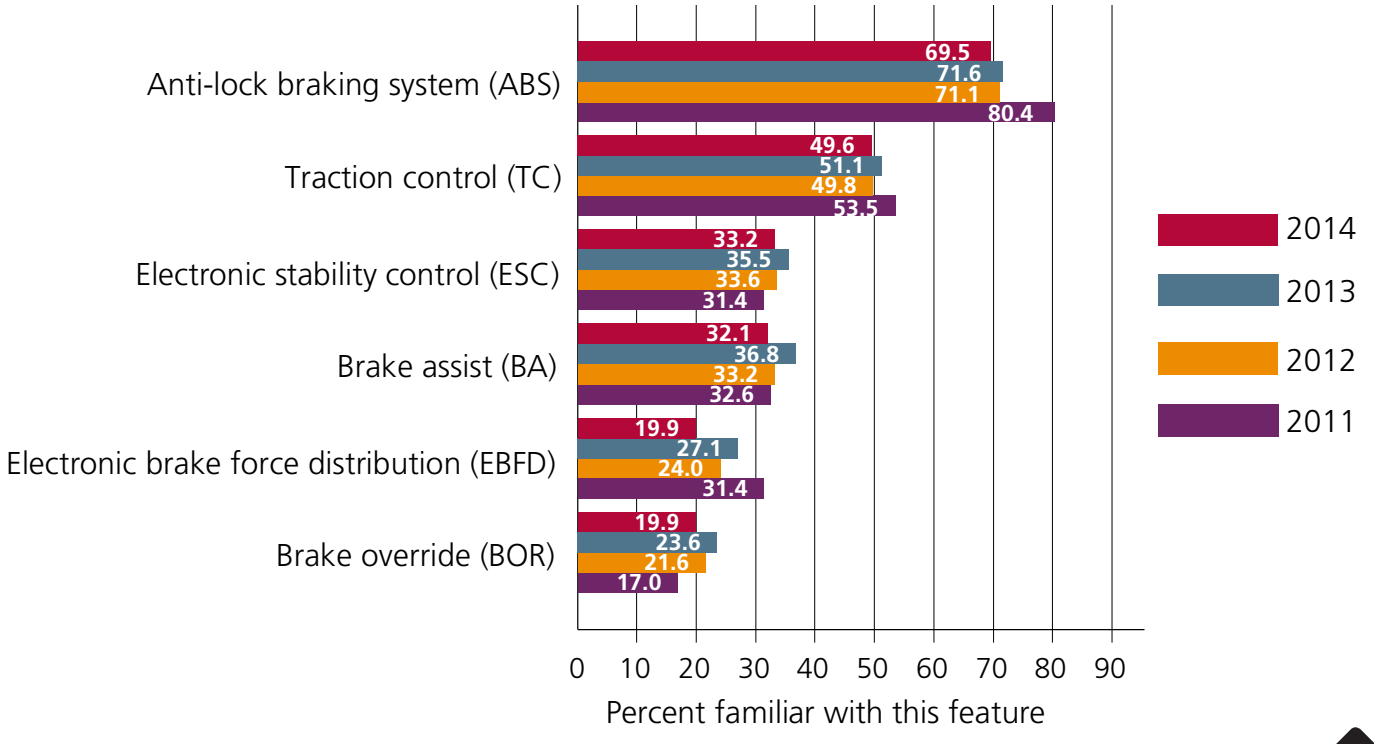
KNOWLEDGE OF VEHICLE SAFETY FEATURES IN CANADA

This fact sheet contains the national results from the Road Safety Monitor (RSM), 2014 that explored knowledge of vehicle safety features in Canada. The RSM is an annual public opinion survey conducted by the Traffic Injury Research Foundation (TIRF) in partnership with Beer Canada, Toyota Canada Foundation, and Desjardins Insurance. It takes the pulse of the nation on key road safety issues by means of an online survey of a random, representative sample of Canadian drivers.

Since 2011, in an effort to better understand gaps in driver knowledge concerning modern vehicle safety features, TIRF has collected data regarding awareness and knowledge among drivers in relation to six important safety features: anti-lock brakes (ABS); brake assist (BA); brake override (BOR); electronic brake force distribution (EBFD); electronic stability control (ESC); and traction control (TC). The following results are based on an analysis of RSM 2014 data, the most recent data available. Comparisons are also made with results from previous surveys in 2011, 2012, and 2013.

How knowledgeable are Canadians about various vehicle safety features? The 2014 survey results revealed that 69.5% of Canadians were familiar with ABS. However, Canadians reported limited familiarity with TC (49.6%), ESC (33.2%), BA (32.1%), EBFD (19.9%), and BOR (19.9%). These results follow a similar pattern of knowledge consistent with data collected in previous years. Figure 1 shows 2014 survey results compared to the results from the same questions asked in the 2013 and 2012 RSMs, as well as the same questions asked in the 2011 TIRF study on vehicle safety features (see Robertson et al. 2012).

Figure 1: Canadian familiarity with vehicle safety features from 2011 through 2014



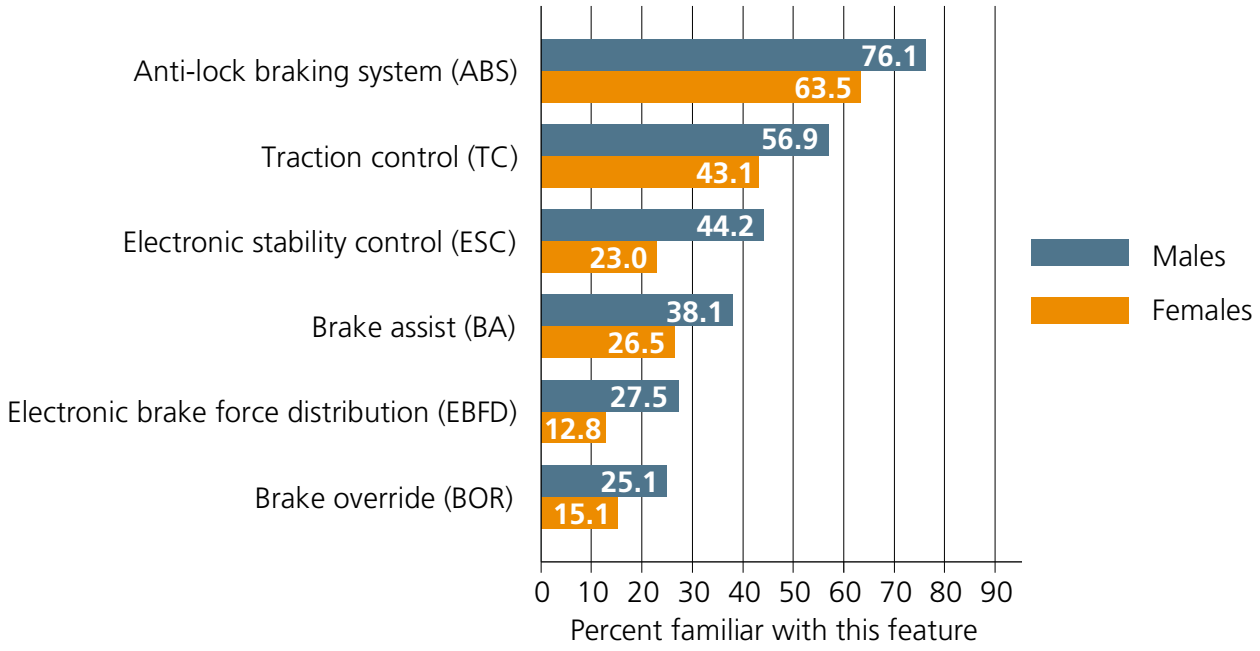
When comparing results from 2014 to results from previous years, respondents' self-reported knowledge of safety features decreased in relation to all features with the exception of ESC and BOR in 2011. For these two features, 2014 results demonstrated an increase in knowledge compared to 2011. A comparative analysis was conducted between the 2014 RSM results and all other years to determine if the differences (i.e., the lower levels of familiarity) were significant from those of previous years. The analyses revealed that across the majority of safety features there were no significant differences. Significant differences were only found between 2014 respondent familiarity with EBFD across all previous years, ABS in 2011, and BA and BOR in 2013. Overall, the general level of driver knowledge about safety features remains low. In 2014, less than 50% of Canadians reported that they were familiar with five of the six features, and less than one-third reported familiarity with four of the six features. The only feature that was reported as familiar to the majority of Canadians was ABS.

The data collection method for the 2014 RSM used only an online survey whereas in previous years data collection was carried out using a combination of phone and online surveys. According to a study conducted by Bowling (2005), which analyzed the effects of different delivery methods of surveys (i.e., face-to-face, telephone, self-administered postal, and self-administered electronic) on data collection, self-administered-type surveys could differ markedly from interview-type surveys. Respondents who were interviewed tended "to give more positive and socially desirable responses" (p. 286) whereas in self-administered tests respondents were more likely to report 'no' or 'do not know' responses. It is therefore possible that the online survey method used for the 2014 RSM could have resulted in more respondents reporting that they were not familiar with certain features in comparison to previous years which used a combination of online-phone interview surveys. However, two factors suggest that this was not the case for this study.

First, as already discussed above, among the different survey years no significant differences were found among the majority of variables. Second, data for previous RSM years were controlled for online versus online/phone surveys. When only online data were compared, no significant differences were found between the results of any year with the exception of a few results in the 2011 data. Therefore, once the method of delivery for the surveys was controlled for, the results from different RSMs were not significantly different.

What is the profile of Canadians who are familiar with safety features? The level of knowledge for each of the six vehicle safety features continues to be associated with the respondents' sex. Across all features, being male significantly increased the likelihood of reporting familiarity with a safety feature as shown in Figure 2.

Figure 2: Percent of males versus females who are familiar with each feature



In addition to sex, other demographic and driving-related variables were analyzed to determine if they had an effect on the respondents' knowledge of each of the six features. Among these variables, only the following results revealed significant effects.

- The odds of being knowledgeable about ABS increased by 29.1% for every ten year increase in age.
- With every 500 kilometers driven, the odds of being familiar with TC increased by 11.5%.
- Among respondents who had previously been injured in collisions, 55.3% were familiar with TC compared to 48.1% who had not been injured, 77.2% of those injured were familiar with ABS compared to 67.4% not injured, and 24.5% of injured drivers reported familiarity with BOR in comparison to 18.7% who had never been injured.

Consistent with the RSM 2013 findings, age continues to be a factor in driver knowledge related to ABS. It was previously posited that because ABS has been in the market for several decades, it is possible that as drivers age they become increasingly familiar with safety technologies that have been available for longer periods of time (Meister et al. 2014).

The odds of being familiar with TC in relation to every 500 km driven differed from the 2013 RSM, which showed that knowledge of EBFD and BA were instead influenced by number of kilometres driven. Similarly, findings from that year revealed that being injured was a factor among respondents who reported familiarity with TC and ESC. This differs somewhat from the 2014 results which revealed that having been previously injured had an effect on respondent knowledge of TC, ABS, and BOR. Given these varying

results, more years of data collection and analyses are required in order to determine if there are any patterns or consistent relationships between these other demographic and driving-related variables and knowledge of vehicle safety features.

In summary, the above results demonstrate that there are certain factors which have a greater influence on driver knowledge of safety features in comparison to other factors. In particular, sex demonstrated the strongest effect on whether drivers reported familiarity with a vehicle safety feature, with males consistently reporting greater familiarity with all six features than females. Nevertheless, even among males familiarity with many of these features was low with more than half of all males reporting that they were unfamiliar with ESC, BA, EBFD, and BOR.

Concluding remarks. For the fourth year in a row, analyses of Canadian knowledge of vehicle safety features have provided important insights and information to road safety practitioners, engineers, vehicle manufacturers, and other related fields working to improve the safety of all road users. The 2014 RSM data confirm a concerning trend that, although some Canadians are very familiar with important features like ABS, most Canadians still lack knowledge about the majority of important and relatively new safety features. Furthermore, there appears to be a downward trend in familiarity with safety features among Canadians. Although professionals across various disciplines have made significant efforts to improve road user safety, due to these gaps in driver knowledge across several features, many of the intended road safety benefits may not be fully realized.

Lack of familiarity and/or misuse of safety technology can have many important implications. This is especially concerning given the rapidly increasing automation of vehicles. For instance, semi-automated vehicles , which currently comprise a growing portion of the vehicles on the road, continue to require some level of driver monitoring and input to ensure proper operation of many safety features. Drivers who do not know how to use, or do not properly use the automated features, are likely to reduce or eliminate the safety benefits. Furthermore, poor knowledge of the limitations of some safety features may mean that drivers engage in dangerous behaviours. As an example, the automated technology adaptive cruise control (ACC) follows other vehicles, slows down, stops, and resumes speed if necessary to maintain both a safe distance and/or a consistent speed. When engaged, very little driver input is required, which could lead to drivers being distracted by other activities such as texting. Drivers who do not know how to use ACC properly may not realize that the vehicle can transfer control back to the driver at any moment or the ACC could malfunction, which means the driver must continue to pay attention to the driving environment at all times and must be able to recognize the warning indicators associated with ACC.

The rapid changes created by emerging safety technologies calls for increased necessity to educate drivers. As vehicles become more automated, drivers must learn how to properly use the new features and understand their limitations. In an effort to improve driver knowledge about these features and safe driving habits, TIRF created Brain on Board with funding from the Toyota Canada Foundation. This educational program provides drivers with important information and resources that explain the benefits, functions,

proper use, and limitations of various features. To find out more, visit www.brainonboard.ca or our French-language site www.cerveauabord.ca.

About the poll. These results are based on the RSM, an annual public opinion poll developed and conducted by TIRF. A total of 1,031 Canadians completed the poll in October and November of 2014. Results can be considered accurate within plus or minus 3.1%, 19 times out of 20. The data were stratified and weighted by sex, age, and province. The majority of the questions were answered using a scale from one to six where six indicated high agreement, concern, or support and one indicated low agreement, concern, or support. All respondents completed the survey online.

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