
Previous studies have shown that mirror-mounted turn signals have advantages over conventional turn signals in terms of their geometric visibility and conspicuity in several important situations. This study was designed to (1) develop methods for evaluating the effects of mirror-mounted turn signals on both the frequency and severity of relevant crashes, and (2) provide an illustrative application of these approaches.

We presented arguments suggesting that a viable approach involves a longitudinal comparison of the crash experience of vehicle models that had an abrupt year-to-year change from 0% to 100% installation. Several crash scenarios were identified that might be sensitive to the presence of mirror-mounted turn signals, including changing lanes, merging, making turns, and leaving a parked position.

We identified 13 vehicle models in the U.S. that had the desirable abrupt change in the installation of mirror-mounted turn signals. An illustrative analysis was then performed on the crash experience of these 13 vehicle models using the North Carolina crash database. The results indicate a tendency for vehicles with mirror-mounted turn signals to be less likely involved in turn-signal-related crashes, but the effect was not statistically significant. Furthermore, the results were inconclusive concerning the possibility of a reduction in crash severity for vehicles with mirror-mounted turn signals.

As manufacturers adopt mirror-mounted turn signals on more vehicle models, the target population of vehicles for a crash analysis will increase. At that point, the approach illustrated in this report could be used to perform a more definitive analysis of the safety benefits of mirror-mounted turn signals.