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Province of New Brunswick
Department of Transportation
Vehicle Management Agency
1050 College Hill Road
PO Box 6000
Fredericton, NB
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Att: Charlotte Valley, Director of Operations

RE: USAGE OF WINTER DESIGNATED TIRES ON PASSENGER
VEHICLES AND LIGHT BUSES

Confirming our conversations with respect to the usage of Winter Designated Tires on Dept of Education administered vehicles, we had previously reviewed the policy used by Education and concurred with the policy contents.

The recommendation was to ensure all front wheel drive, all wheel drive, and four wheel drive vehicles be equipped with Winter designated Tires, carrying the "Snow Flake and Mountain Peak" symbol, at all wheel positions. For light busses based on LT Chassis, and larger busses, the recommendation was to keep the policy in effect and install such tires on the drive position only. Steer positions should continue to be equipped with appropriate rib style tires that are less aggressive than on the drive positions.

We agree that for heavy snow conditions there will be an improvement in steering and braking abilities at lower or urban speeds with winter tires installed in all positions, however for weather controlled operational profiles that include significant highway speed usage, we concur and recommend that the winter traction tires be confined to the drive positions, as in virtually all commercial and highway usage vehicles that are rear drive.

There is a common concern with highway speed usage in low traction conditions for the risk of loss of lateral vehicle stability during an evasive or corrective manoeuvre, such as the sudden encounter with slush, black ice, snow rutting. Etc. The loss of control concern in

question is that of rear end skidding, or "oversteer". This situation is identifiable and can present on perfectly straight sections of highway within legal posted speeds. Vehicle operators can drive vehicles with appropriate caution and procedures to address normal steering, stopping, and braking situations when dealing with normal intersection and turning situations. The sudden loss of lateral control risk is difficult to anticipate and address. This is an identifiable concern and numerous incidents occur on public highways each year that cause serious injuries and/ or loss of life. These incidents arise from loss of vehicle control or "oversteer" situations in both wet highways in warmer seasons and snow and ice conditions in winter.

Front wheel drive vehicles have historically been more prone to such situations, and manufacturers of vehicles, vehicle systems, and tire manufacturers have introduced significant developments including, Anti Lock brakes, Electronic Stability Control systems, and appropriate rain and winter adaptive tires for this common end. The objective is to allow the operator to maintain vehicle directional control in adverse conditions, in particular to prevent or limit "oversteer" in corrective actions.

Rear drive vehicles have an inherent tendency to resist the "oversteer" tendency common to front wheel drive vehicles, and can be helped to maintain this characteristic by ensuring rear traction dominance. In low traction conditions, high traction tires on steer positions can, in evasive and correctional actions, risk excessive front end braking or steering forces that can cause excessive vehicle rotation that can induce excessive rear tire slip angles and rapid loss of directional control.

We would agree that "steer" position and "drive" position winter designated tires that certain manufacturers market in Europe would be ideal and suitable for winter conditions. However as in heavy truck tires the same "drive" traction tires on all positions does not appear to be recommended for reasons of reducing the rear traction dominance for low traction winter conditions.

We agree that Winter designated tires for all positions will produce improvements at lower identified speeds, however with the identifiable risk of control loss during highway evasive or corrective actions, we will not be changing our recommendation for winter tire usage on the drive only positions to maintain rear traction dominance. These vehicles in question that are operated under control of the Department

of Education are used in weather condition controlled operations, and exposure to the majority of low traction situations can be controlled.

Improvements are continually being made in both vehicle safety systems and tire technology that will ultimately address these concerns. We have requested to be privilege to the documentation and testing results upon which Transport Canada has based their general recommendation that " Where winter designated tires are available they should be used on all wheel positions", to offset our concerns.



D. Hoar P. Eng.

