Subject: Turnbull/Dover elevators; Door-zone-switch retrofit required

Sent to: All Elevator Contractors in Scope U1, F1, P1 and Consultant

1. **Introduction**

   Pursuant to their obligation under Section 25 of Ontario Regulation 316 made under the Elevating Devices Act, Dover Elevator Company advised the Director of a potential defect in a component on older Turnbull/Dover elevators. This defect could effect the safe operation of their elevators by allowing the car to stop up to 600 mm out of level with the landing door open. Based on retrofit criteria and procedure supplied by Dover Elevator Company to TSSA the following “Order to Contractors” is formulated.

2. **Order to Contractors**

   Contractors who maintain older Turnbull/Dover hydraulic and traction elevators (with or without a mechanical selector) that are equipped with:

   a) only two levelling switches without door zone switch, or  
   b) with a door zone switch that is active over a long door zone

   shall retrofit such elevators with an additional door zone switch “Z” (MV3 type or similar) and with a 6-inch vane at each floor as to permit doors to open only within 3 inches of floor level. The “Z” contact shall be connected in the door operator circuit as to allow the door to open only when the switch “Z” is activated by the 6-inch vane.

3. **Clarification**

   3.1 The enclosed drawing illustrates the Turnbull/Dover control type XA-BS-052-S-2, single speed. Other similar Turnbull/Dover control types must also be checked and retrofitted, in accordance with the above Order.

   3.2 If the required work does not constitute a part of your maintenance contract, and you cannot obtain authorization from the owner to complete the work, you shall inform the District inspector immediately, indicating the elevator installation number and reference to Bulletin #140/98, so that the inspector may issue an order to the owner to have the work completed. Note that contractors are provided with a listing of inspectors’ home office/district information.
4. **Background**

There have been two reported cases of elevators opening doors after stopping from 10 to 24 inches out of level. Passengers were injured, when they stepped off the elevator. On these elevators, the control relied only on two levelling switches (on the selector or on the top of car) to signal that the car is within the level and the door can be opened. The failure of one of these levelling switches, or of their associated circuitry, would cause the car to stop out of level and allow the doors to open.

To illustrate a typical occurrence, and to help analyse other types of controls with this deficiency, please see the enclosed drawing. For example, during normal operation the car is going up to a call, and “MC3” contacts keep “U” and “M” energized. When the car comes into the levelling zone, the levelling relay “UN” picks up to bring the car into the floor level. Relays “UC” and “MC3” drop out: the continuation of the travel depends solely on the “UN” contact. Once the car stops, relay “32E” drops (not shown on the enclosed drawing), causing relay “CL” to drop out, which allows relay “O” to pick up and open the door. However, if the contact “UN” fails (dust, wear-out, etc.), the car stops below the floor level and opens the door. Similarly, in the down direction, if contact “DN” fails, the car would stop above the floor level and open the door.

5. **Notice to Contractors/Manufacturers**

We remind all elevator contractors and manufacturers of elevating devices of their obligation under Section 25 of Ontario Regulation 316. Should contractors or manufacturers be aware of any defect on their equipment or equipment made by them which may result in a similar unsafe condition, they shall notify the Director.

C. E. Vlahovic, Chief Engineer
ADD CONTACT OR Z in the door open circuit to prevent the door from opening if the elevator is not within 3" of floor level.