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## REGULATIONS UNDER THE LIFTS REGULATION ACT 1906.

At the Executive Council Chamber, Melbourne, the  
thirteenth day of August, 1907.

PRESENT:

His Excellency the Lieutenant-Governor of Victoria.

Mr. Davies                              Sir A. J. Peacock.  
Mr. Sachse                              |

**W**HEREAS by the *Lifts Regulation Act 1906* it is enacted that the Governor in Council may, by Order published in the *Government Gazette* from time to time, make regulations for the purposes therein mentioned: Now therefore His Excellency the Lieutenant-Governor of Victoria, with the advice of the Executive Council thereof, doth by this order repeal the Regulations made on the 9th April, 1907, and doth make the following Regulations (that is to say):—

### FEES.

1. The fee to be charged any owner, lessee, or occupier of any building in respect of each lift worked by the aid of gas, steam, hydraulic, electrical, or other power (except hand-power) in such building, shall be the sum of Ten shillings. Such fee shall cover charges for inspection of such lift for a period of twelve months from the date of payment of same. Provided that no owner, lessee, or occupier shall be called upon to pay more than Five pounds in respect of any number of lifts within one enclosure during any such period of twelve months.

2. The fee to be charged any owner, lessee, or occupier of any building in respect of each lift worked by hand-power shall be the sum of Five shillings. Such fee shall cover charges for inspection of such lift for a period of twelve months from the date of payment of same.

3. The fee to be charged any owner, lessee, or occupier of any building for each certificate by an Inspector of the result of an inspection of a lift, shall be the sum of Two shillings and sixpence.

4. The following Regulations shall apply to lifts erected after the commencement of the *Lifts Regulation Act 1906*, provided that the Inspector may direct that any existing lift shall be so altered as to comply with the

requirements of any of the provisions of these Regulations applicable to such lift if he considers such a course necessary to insure the safe working of such lift.

### HYDRAULIC LIFTS.

5. All cylinders, rams, pipes, valves, or other apparatus subject to hydraulic pressure, shall be tested to a pressure equal to three times the proposed working pressure per square inch, and a certificate under the maker's hand, that they have been successfully tested to stand that pressure, shall be furnished to the Inspector when demanded.

6. The whole of the above machinery shall, if so required by the Inspector, be tested to twice the working pressure in his presence. This regulation will apply to any substantial alteration in addition to or reinstatements of existing machinery and pipes.

7. All hydraulic machinery having rams working in cylinders shall be provided with permanent stops (or other approved means) by which the rams will be prevented from being forced out of the cylinders quite independent of any valves or tappet gear.

8. An independent screw-down pressure stop-valve shall be fitted to every machine, and in cases where more than one machine is fixed in the same building, a waste cock, approved by the Inspector, shall be fitted to each machine.

9. A back-pressure valve, non-return valve, or other similar apparatus of approved kind, shall be fitted to every service-pipe. This valve to be placed as near to the controlling valve as possible.

10. A relief valve, loaded to lift when the pressure in the service-pipes exceeds 10 per cent. increase of pressure over the ordinary working pressure, to be fitted in all low-pressure lifts where the service-pipe exceeds one inch in diameter, unless sufficient evidence is given the Inspector that such provision is otherwise provided.

11. All hydraulic cylinders are to be fitted with air and drain pipes.

12. Ample provision to be made so that cylinders can be efficiently drained and washed out. Means must also be provided for preventing water syphoning out of the cylinders, and for limiting the speed of admission and exhaust.

13. Only piping made specially for hydraulic pressures shall be used; in no case will ordinary steam or water piping be allowed for pressure work. Standard flanges to be screwed on and seated for jointing material; a tee piece to be provided for testing purposes if necessary.

14. Efficient means are to be provided for lubricating all working parts of machines.

15. Proper platform, handrail, and ladder must be provided to enable the attendant to oil and tend to all parts of the machinery without risk of accident.

16. In the case of lifts (other than ram lifts) intended for carrying passengers, they must be provided with four or more lifting ropes. If four ropes are used they shall be of such dimensions that when new they will each have a breaking strain of not less than five times the maximum load and the weight of the car. If more than four ropes are used their total factor of safety shall not be less than ten. In the case of lifts used solely for goods not less than two such ropes shall be provided with a combined factor of safety of not less than ten. With cranes and whips where one rope only is provided such rope shall have a factor of safety of not less than ten. Balance weight ropes must have a similar proportion of strength to load.

The minimum diameter of any pulley or sheave shall be not less than fifteen times the circumference of the rope to be used upon it.

17. All overhead construction of any description shall be of sufficient strength and stability and to the approval of the Inspector.

18. Where flying counterbalance is used the weights shall be arranged to operate between suitable guides.

No direct-acting lift is to be fitted with flying balance weights except the ram of such lift is fitted with one or more tie bolts carried from the bottom of the ram to the girders of car platform. All hydraulic or other type of balance to be approved by the Inspector.

19. The superstructure of cars to be to the approval of the Inspector, and those passenger cars with more than one entrance shall have all such other entrances fitted with approved gates or doors.

20. Safety gear to be provided for all lifts excepting direct acting, parcels, dinner, and service lifts. The gear must be automatic and positive in action and may be tested by suspending the lift car when fully loaded by means of hempen rope which is to be cut. The car to be raised to any height demanded by the Inspector prior to testing. The main hauling ropes need not be detached, but must be slacked sufficiently to permit of a reliable test.

21. The controlling valve must be of an efficient type, and tested, and shall cut off automatically at either limit of travel. The valve must also be made to shut off the water in the case of breakage of the handline. Provision must be made to prevent any material passing to the plunger, and jamming in the holes thereof, also, that will preclude any possibility of the plunger blowing out should it become parted.

22. The enclosure doors or gates of the well of passenger lifts and goods lifts must be constructed in such a manner that it is impossible to open them from the outside without a key; such key is not at any time to be left in any door, provided that in the case of goods lifts the Inspector may accept any door or gate without a key if he considers the arrangements for closing such door or gate are satisfactory. Enclosures, doors, or gates of passenger or goods lifts shall be to the Inspector's approval, but must, where possible, be at least 5 ft. 6 in. in height. The lift well above door on the side of any car entrance of either goods or passenger lifts shall be without projection and enclosed throughout the travel of the car, unless any such car entrance is fitted with an approved gate or door. The enclosure, gates, or doors of lift well to be placed close to the edge of the lift well so as to preclude any possibility of accident.

23. All machinery and well-holes to be enclosed, where necessary, to the Inspector's approval. In case of whip hatches, floors to or from which goods are delivered or discharged, they shall be provided with flaps or rolling platforms or other suitable contrivance approved by the Inspector.

24. Any lift which is designed and constructed for the purpose of carrying either goods or passengers shall have a prominent notice stating the maximum load such lift is to carry in goods, or the number of passengers, if a passenger lift, and any load, or number of passengers, shall not at any time exceed that which is stated in the said notice. In the case of goods lifts, only the lift attendant and the person attending to the goods shall be permitted in the lift car at any one time. This must be distinctly stated in the notice.

#### BEIT-DRIVEN, OR OTHER POWER, LIFTS, EXCEPT ELECTRIC LIFTS.

25. All belting, pulleys, worm gear, spur gear, or friction gear shall be to the approval of the Inspector.

26. Any such lift shall be fitted with efficient brake gear, to operate on the worm shaft automatically, when the machine is stopped. Where the angle of any worm is more than the angle of reversibility, efficient provision

shall be made to prevent rotation, so that any tendency of the car to descend, except under power, is obviated. All lifts shall be provided with two limit stops, one being controlled by the hand rope, and one an integral part of the lift gear.

27. In no instance will the use of direct spur gearing or direct friction drive be allowed where it is intended that an attendant or passengers are to travel in the car unless provided with gear so that should the lifting ropes by any means become slack the machine shall automatically stop.

28. The striking or reversing gear shall operate by means of one hand-rope or rod, and shall be such as to preclude any possibility of two belts being on the fast pulley simultaneously, with provision made for maintaining the belts in their several proper positions.

29. In the case of drum winding lifts in which any person travels it shall be provided with gear, so that should the lifting ropes by any means become slack, the machine shall automatically stop.

30. Efficient means shall be provided for lubricating all working parts of machines.

31. Proper platform, handrail, and ladder must be provided, to enable the attendant to oil and attend to all parts of machinery without risk of accident.

32. In the case of lifts intended for carrying passengers they shall be provided with two or more lifting ropes; if two ropes are used they shall be of such dimensions that when new, they shall each have a breaking strain of not less than five times the maximum load and the weight of the car; if more than two ropes, their total factor of safety shall be not less than ten. In case of lifts used solely for goods not less than two such ropes shall be provided with a combined factor of safety of not less than ten. With cranes and whips where one rope only is provided, such rope shall have a factor of safety of not less than ten. Balance weight ropes must have a similar proportion of strength to load.

The minimum diameter of any drum, pulley, or sheave shall be not less than fifteen times the circumference of the rope to be used upon it.

33. Sufficient space for the over-running of the cage shall be provided at the top and bottom of the lift-well, to the approval of the Inspector, and such space at the top shall not be less than 3 feet measuring from the top of the car-beam to the underside of the overhead girders or ceiling joists.

34. All lifts operated by means of a winding-drum shall have the drum grooved in such a manner as to conveniently embrace the lifting ropes, or arranged to obviate any tendency of overriding or jamming of the ropes.

In positively driven gears with the ropes permanently attached to the drum, the anchoring of the ropes shall be performed in an efficient and approved manner, and shall be such that not less than one and a-half turns of each rope shall be round the drum when the lift-cage is at the top or bottom limit.

35. All overhead construction of any description shall be of sufficient strength and stability, and to the approval of the Inspector.

36. Where flying counterbalance is used, the weights shall be arranged to operate between suitable guides.

37. All cars to be carried from girders placed underneath the superstructure of cars to be to the approval of the Inspector, and those passenger cars with more than one entrance shall have all such other entrances fitted with approved gates or doors.

38. Safety gear to be provided for all lifts. The gear must be automatic and positive in action, and may be tested by suspending the lift car when fully loaded by means of hempen rope, which is to be cut, the car to be raised to any height demanded by the Inspector prior to testing. The main hauling ropes need not be detached, but must be slackened sufficiently to permit of a reliable test.

39. The enclosure doors or gates of the well of passenger lifts or goods lifts must be constructed in such a manner that it is impossible to open them from the outside without a key; such key is not at any time to be left in any door, provided that in the case of goods lifts the Inspector may accept any door or gate without a key if he considers the arrangements for closing such door or gate are satisfactory. Enclosures, doors, or gates of passenger or goods lifts shall be to the Inspector's approval, but must in no instance be less than 5 ft. 6 in. in height. The lift well above door on the side of any car entrance of either goods or passenger lifts shall be without projection, and enclosed throughout the travel of the car, unless any such car entrance is fitted with an approved gate or door. The enclosure, gates, or doors of lift well to be placed close to the edge of the lift well, so as to preclude any possibility of accident.

40. All machinery and well holes to be enclosed to the Inspector's approval. In case of whip hatches, to or from which goods are delivered or discharged, they shall be provided with flaps or rolling platforms, approved by the Inspector.

41. Any lift which is designed or constructed for the purpose of carrying either goods or passengers shall have a prominent notice stating the maximum load such lift is to carry in goods, or the number of passengers, if a passenger lift, and any load or number of passengers shall not at any time exceed that which is stated in the said notice. In the case of goods lifts, only the lift attendant and the person attending to the goods shall be permitted in the lift car at any one time. This must be distinctly stated in the notice.

#### ELECTRIC LIFTS.

42. The location of the electric apparatus shall be such that it shall not be subject to moisture or dampness of any description.

The whole of the electrical attachments and apparatus shall be entirely and thoroughly insulated from body or earth in an efficient manner, to the approval of the Inspector.

43. The supply main shall be suitably insulated and fixed, and shall be of sufficient sectional area to carry the maximum current permissible under the rules of the Fire Underwriters Association of Victoria.

44. At the nearest point of entrance into a building the supply mains must be connected to suitable and efficient double pole fuses and double pole quick break switch. These fuses are to be guaranteed to break the circuit should the current exceed the normal carrying capacity of the main cables by 50 per cent. The sizes of these fuses shall be accurately determined to secure this result, which is most important.

45. All overhead construction of any description shall be of sufficient strength and stability and to the approval of the Inspector.

46. When considered necessary sufficient space for the over-running of the cage shall be provided at the top and bottom of the lift well to the approval of the Inspector, and such space at the top shall be not less than 3 feet, measuring from the top of the car beam to the under side of the overhead girders or ceiling joists.

An automatic stop which will instantly break the circuit should the over-run of the car exceed 6 inches shall be fitted to every goods or passenger lift where the Inspector so directs. This stop must be made to actuate from the car.

47. All electric lifting apparatus shall be provided with limit stops or other approved means to prevent over-winding; these stops must be attached to the lift machine.

48. The electrical controlling gear must be to the approval of the Inspector, and must be of an efficient type and shall automatically slow down and cut off at either limit of travel. It must operate in a satisfactory manner without causing excessive strain in any part of the apparatus. The electric controls must so operate as to obviate any excessive and deleterious sparking.

49. In the case of lifts intended for carrying passengers, they must be provided with two or more lifting ropes. If two ropes are used they shall be of such dimensions that when new they will each have a breaking strain of not less than five times the maximum load and the weight of the car. If more than two are used their total factor of safety shall be not less than ten. In the case of lifts used solely for goods and freight purposes, not less than two such ropes shall be provided, and each shall have a breaking strain of not less than five times the maximum load for which the apparatus is designed. With cranes and whips where one rope only is provided, such rope must have a factor of safety of not less than ten. The minimum diameter of any sheave or drum shall be not less than fifteen times the circumference of the rope to be used upon it.

50. All electric lifts operated by means of a winding drum shall have the drum grooved in such a manner as to conveniently embrace the lifting-ropes, or arranged to obviate any tendency of over-riding or jamming of the ropes.

In positively driven gears with the ropes permanently attached to the drum, the anchoring of the ropes shall be performed in an efficient and approved manner, and shall be such that not less than one and a-half turns of each rope shall be round the drum when the lift cage is at the top or bottom limit.

All such apparatus shall be fitted with an automatic device so arranged that should the lifting ropes from any cause whatsoever become slack, the current shall be immediately and automatically cut off.

51. Counter-balance weights where used shall be arranged to operate between suitable guides. The ropes attached to same will be subject to similar conditions as the lifting-ropes previously mentioned in Regulation 49.

52. All lift machines shall be provided with an efficient brake gear, operated in a manner approved by the Inspector.

53. All cars to be carried on girders placed underneath the car platform. The superstructure of cars to be to the approval of the Inspector.

In passenger cars, constructed with more than one entrance, all such other entrances shall be fitted with approved gates or doors.

The enclosure doors or gates of the well of passenger lifts or goods lifts must be constructed in such a manner that it is impossible to open them from the outside without a key; such key is not at any time to be left in any door. Provided that in the case of goods lifts the Inspector may accept any door or gate without a key if he considers the arrangements for closing such door or gate are satisfactory.

Enclosures, doors, or gates of passenger or goods lifts shall be to the Inspector's approval, but must in no instance be less than 5 ft. 6 in. in height. The lift well above door on the side of any car entrance of either goods or passenger lifts, shall be without projection and enclosed throughout the travel of the car, unless such entrance is fitted with an approved gate or door. The enclosure, gates, or doors of lift well to be placed close to the edge of the lift well, so as to preclude any possibility of accident.

54. Safety gear is to be provided for all lifts, and must be automatic and positive in action. The gear must be tested by suspending the lift car when fully loaded by means of a hemp rope which is to be cut, the car being raised to any height the Inspector may demand. The main hauling ropes need not be detached, but must be slackened sufficiently to permit of a reliable test.

55. If automatic door switches are used, they shall be constructed in such a manner as to comply with the requirements of the Inspector.

56. All machinery and well holes to be enclosed to the Inspector's approval. In the case of whip hatches, floors to or from which goods are delivered or discharged, they shall be provided with flaps or rolling platforms approved of by the Inspector.

57. Any lift which is designed or constructed for the purpose of carrying either goods or passengers shall have a prominent notice stating the maximum load such lift is to carry in goods or the number of passengers, if a passenger lift, and any load or number of passengers shall not at any time exceed that which is stated in the said notice. In the case of goods lifts, only the lift attendant and the person attending to the goods shall be permitted in the lift-car at any one time. This must be distinctly stated in the notice.

#### GENERAL.

58. When any lift is worked with chains, such chains shall be annealed once at least in five years, and any defective links removed to the satisfaction of the Inspector.

And the Honorable Sir Alexander James Peacock, His Majesty's Minister of Labour for the State of Victoria, shall give the necessary directions herein accordingly.

ROBERT S. ROGERS,  
Clerk of the Executive Council

