

# THE NEW YORK AIR BRAKE

## (PART 4)

### EXAMINATION QUESTIONS

(1) How much pressure is carried on the signal line? ART. 1.

(2) Explain the operation of the signal valve? ART. 7.

(3) What changes in the engine equipment are necessary to convert it into a high-pressure control equipment (first arrangement) for handling heavily loaded air-brake trains on grades? ART. 22.

(4) (a) When should the signal apparatus on the engine be tested? (b) What device should be used for making this test? (c) How is the device used? (a) ART. 18; (b) ART. 17; (c) ARTS. 18 and 19.

(5) Explain the principle of the water brake. ART. 34.

(6) What is the duty of the safety valve that is screwed into the engine and tender brake cylinders when the engine is equipped with the apparatus for the control of heavily loaded trains? ART. 22.

(7) (a) What is the duty of the signal reducing valve? (b) Explain how it operates. (a) ART. 1; (b) ART. 3.

(8) Of what advantage is the high-pressure control apparatus over the ordinary equipment? ART. 31.

(9) (a) Explain how to apply the water brake. (b) At what speeds should it be used? (c) Should the driver brakes and the water brake be used together? Give reasons. (a), (b), and (c) ART. 37.

(10) (a) How much pressure is carried in the train pipe when using the high-pressure control apparatus? (b) What pressure in the main reservoir? (a) and (b) ART. 31.

(11) (a) Why is the Sweeney air compressor applied to engines working in mountain districts? (b) Explain its construction. (a) ART. 38; (b) ART. 39.

(12) If, in transmitting a signal, the whistle gives a long blast, where would you look for the trouble? ART. 13.

(13) If the signal line fails to charge, where would you look for the cause? ART. 10.

(14) Explain how, and when, you would use the high-pressure control apparatus. ART. 31.

(15) Explain how the best results can be obtained in transmitting signals from car discharge valves. ART. 8.

(16) (a) If you found a car discharge valve defective while on the road, what would you do? (b) Explain, fully, all the defects found in same. (a) and (b) ART. 11.

(17) Explain the second arrangement of the high-pressure control apparatus as shown in Fig. 11. ART. 33.

(18) Explain the operation of the special driver brake triple valve, Fig. 9: (a) in service applications; (b) in emergency applications. (a) ART. 27; (b) ART. 29.

(19) (a) What brake cylinder pressure is obtained in the car-brake cylinders from a full service reduction, when using the first high-pressure arrangement? (b) What pressure will be obtained in the engine and tender brake cylinders? (a) ART. 31; (b) ART. 30.

(20) (a) Explain, fully, how the Sweeney compressor is operated. (b) How long should the reverse lever be left back of the center notch after pressure is obtained? (c) Should steam ever be used while operating this device? (a), (b), and (c) ART. 40.

(21) If the signal whistle only gives a weak blast when the cord is pulled, where would you suppose the trouble to be? ART. 15.

(22) If the whistle blows every time the brakes are released, where would you look for the cause? ART. 14.

(23) How can the engineer test the signal-pipe pressure without the use of a testing device? ART. 20.