

A Proposal of the Maintenance Cycle of Overhead Catenary System for the Battery-powered Electric Trains

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A battery-powered electric train charges its batteries with a large current by use of the contact wires and the pantographs. The current tends to be larger than the one of the normal trains during their standstill at a station. Usually, the current raises the temperature of the contact wire. Especially, since the battery-powered electric trains do not make the contact strips of their pantographs slide on contact wires, the film such an oxide would grow on the contact wire according to the effect of the exposure days. The influence of the film for the temperature is expected to be appreciable, however, it has not been clarified yet. The authors conducted the exposure test, the film-thickness measurement, the contact-resistance measurement and have developed a simulation program to clarify the influences of the film. This paper shows the influence of film and proposes the maintenance cycle based on the experiment results.