

**Improvement of Low Frequency Track Circuit
against Noise using Simple Encoding**

Natsuki TERADA Mitsuyoshi FUKUDA

The allowable value for the currents generated by vehicle's electric equipments is set at a very small level against preventing the fault operation of the track circuits for long distance, which is becoming an obstacle to develop new vehicles. To resolve this issue, we have studied countermeasure to enhance tolerance of track circuits for long distance against vehicle's noise. In establishing the countermeasure, signals have been encoded, and binary phase shift keying has been adopted because it is easily applicable to existing signal generators. We have also reported the study result on how many frames to be checked for the track circuits to be stable in a normal state and to be prevented from unsafe failure in an abnormal state.