

### **Development of A Ballasted Ladder Track Equipped with A Vehicle Guide Device**

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The authors developed a ballasted ladder track equipped with a vehicle guide device, which minimizes the degree of damages when railway vehicle is derailed due to a large-scale earthquake. The vehicle guide device was joined by a hinge to the field side of the longitudinal beam of the ballasted ladder track. In this development, the authors examined rotary spring characteristic of the hinge joint by static loading experiments and load-bearing performance of the vehicle guide device by drop-weight experiments, and evaluated its vehicle-guide performance and buckling safety by parametric analysis. In addition, the authors laid the ballasted ladder track equipped with the vehicle guide device experimentally on a loop line in the premises of Railway Technical Research Institute and clarified tamping characteristics of the track.