

Experiments on Damage to Track Components due to Repeated Passage of Vehicles on Rail Gaps

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In railways where wireless train control systems are employed, track circuits may be removed, so that it is difficult to detect rail broken in such cases. In railways without track circuit, vehicles are assumed to run repeatedly on rail gaps until rail broken is found by rail inspection or other means. Therefore, in order to evaluate the strength of track components due to repeated vehicle passage, we conducted a falling weight test in the laboratory, in which impact loads during vehicle passage were applied to the rail simulating the damage. This test clarified the plastic deformation of the rails and functional deterioration of the rail fastenings system in response to the impact loads.