## Leading-edge of Technology of Rail-vehicles Expected for Practical Use

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This paper introduces three leading-edge technical topics of rail vehicles to improve both of safety/reliability and comfort/convenience. The first topic is the development of strap bar shape and its placement to improve rigidity of body structure. The second one is the development of water-resistant composite brake blocks with cast-iron sludge, which improve the brake performance even in the rainy condition. The third one is the development of detection method as well as detecting device of disconnection points of the brake command lines for composed freight trains, which enables the quick restoration to ensure the brake performance.