Development of Silent Steel Railway Bridge
Equipped with Floating Ladder Track and Floating Reinforced-Concrete Deck

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A number of steel railway bridges have been constructed in Japan. Thin steel members used for the bridges easily tend to vibrate and generate structure-borne noise. Accordingly, the number of constructions of steel railway bridges tend to decrease in the urban areas due to environmental aspects. Then, as a countermeasure against structure-borne noise derived by steel railway bridges, we developed a new type of the steel railway bridge equipped with a floating-ladder track and a floating reinforced-concrete (RC) deck. As a result of train running test, it became apparent that the new steel railway bridge constructed of double floating system has reduced a vibration velocity level of 10.5dB(A) at main girder webs as compared with a steel railway bridge constructed on directly fastened track.