

RTRI's Rolling Stock Test Plant constructed in 1959 designated as Mechanical Engineering Heritage

On August 7 this year, the Rolling Stock Test Plant (Fig.1) at RTRI was designated by the Japan Society of Mechanical Engineers (JSME) as Mechanical Engineering Heritage No. 108 because of its historical value as an existing mechanical and engineering asset.

【Overview of the facility】

- The facility was constructed in 1959 by the predecessor of the current Railway Technical Research Institute (RTRI), which was a research wing of the former Japanese National Railways. Its purpose was to modernize railway traction systems and increase running speeds. Testing was started in 1960.
- High-speed running can be reproduced as a bench test with an actual vehicle. The rail-shaped rollers rotate at high speeds and are capable of simulating train running. The rollers can also add vertical vibration.

(Reference)

Gauge of roller: adjustable between 1000 mm to 1676 mm

Speed: Up to 250 km/h with a vehicle, 350 km/h with a bogie

- It can be used for tests to confirm vehicle performance, including stability at high speeds.
- Test results were used to determine specifications for the test vehicle bogie prior to the opening of Tokaido Shinkansen. The Series 951 test vehicle for Sanyo Shinkansen was also tested at this facility (Fig.2) and this facility made a significant contribution to the development of Shinkansen.
- In 1990, RTRI constructed another high-speed vehicle test facility capable of testing at a maximum speed of 500 km/h in order to increase competitiveness of railways over other transport modes. Since then, vehicle running tests have been conducted at the new facility. The historical facility still serves for tests of inverters and other components.

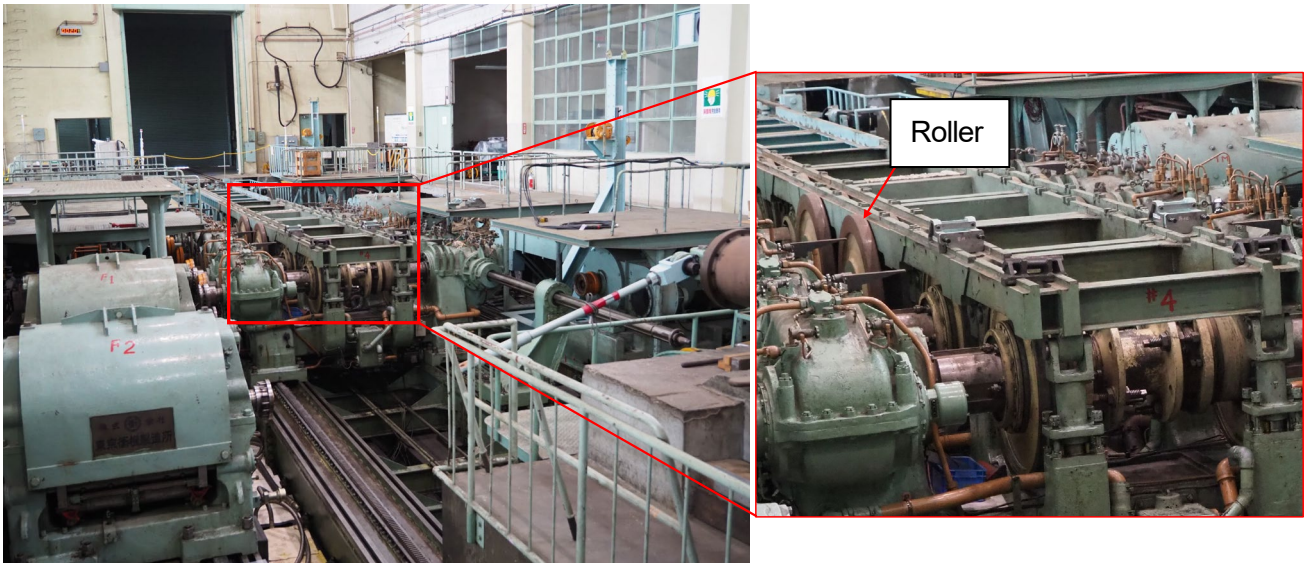


Fig. 1 Rolling Stock Test Plant

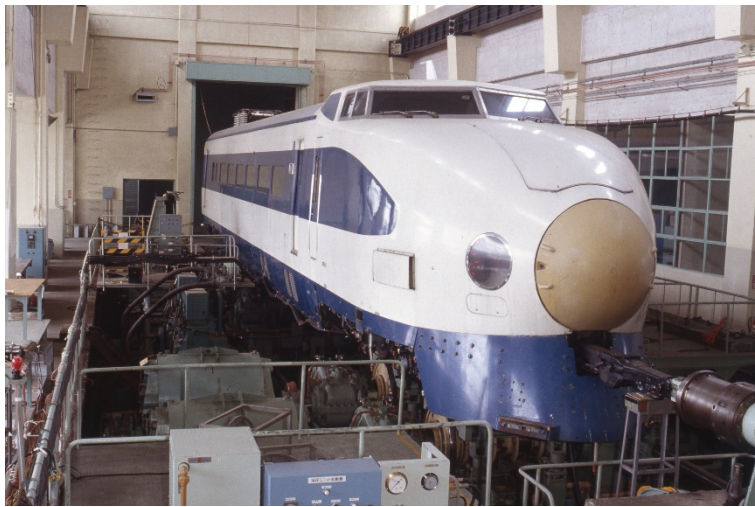


Fig.2 Sanyo Shinkansen test vehicle tested on this facility

【Note】

In 2007, JSME started to designate objects which are existing in Japan and have historical significance in the development of machine technology and engineering as Mechanical Engineering Heritage. This designation helps to preserve historical items and pass them on to the next generation as cultural heritage. JSME has designated 104 items prior to 2020.

JSME website <https://www.jsme.or.jp/kikaiisan/#section1>