

The 3rd Japan-UK Track Maintenance Workshop Held at RTRI

On November 25, 2016, Railway Technical Research Institute (RTRI) hosted the 3rd Workshop of Track Maintenance between Japan and United Kingdom.

In 2013, RTRI started to hold Japan-UK workshop on ballasted track maintenance in order to explore issues shared by Japan and UK and to develop them into future joint research projects. At this year's workshop, the third one, have covered slab track and others as well as ballasted track, and 44 people participated from two universities in the UK, two Japanese universities and railway operators.

At the workshop, one of the two keynote speeches was given by Prof. Powrie of the University of Southampton on the performance of ballasted railway track under high-speed train running. Prof. Powrie described possible issues regarding ballasted tracks for high-speed lines based upon simulation data and the data obtained in on-site measurement.

The other keynote speech was delivered by Prof. Woodward of Heriot-Watt University with the title "Critical Velocity: Prediction and Modelling." Prof. Woodward introduced a case of predicting critical velocity on a ballasted track by implementing three-dimensional analysis of wave propagation of track bed.

In addition, five presentations were made on the research into ballasted tracks, methods of data measurement and analysis, and simulation.

At the panel discussion, Prof. Ishikawa of Hokkaido University and Prof. Powrie raised issues for the research into ballasted track. During the following discussions, the necessity to pay attention to the change with age in ballast conditions was pointed out and one of the participants introduced current maintenance work using track maintenance machinery. Furthermore, Japan and UK finally shared a view that we need to be able to predict the progress of track displacement finally and, in order to attain this goal, we will have to continue systematic research composed of tests, analysis and on-site measurements.

Program of the Japan-UK Workshop of Track Maintenance

Date: 25th November 2016

Venue: Railway Technical Research Institute

1. Opening Address Dr. Hideyuki Takai
Executive Vice President, RTRI
2. Keynote 1 “Performance of ballasted railway track at high train speeds”
Prof. William Powrie, University of Southampton
3. Presentation 1 “Scaled model tests on evaluation of lateral resistance characteristics of
ballasted tracks under various conditions”
Prof. Kimitoshi Hayano, Yokohama National University
4. Keynote 2 “Critical Velocity: Prediction and Modelling”
Prof. Peter Woodward, Heriot-Watt University
5. Presentation 2 “Basic study of vibration-reducing slab track under high-speed operation”
Mr. Shota Fuchigami, Researcher, Track Structures and Geotechnology,
RTRI
6. Presentation 3 “The importance of track support stiffness and methods of determining it
from trackside measurements”
Dr. Louis Le Pen, Senior Research Fellow, University of Southampton
7. Presentation 4 “Application of axle-box acceleration to track condition monitoring”
Mr. Hirofumi Tanaka, Assistant Senior Researcher, Track Geometry and
Maintenance, RTRI
8. Presentation 5 “Development of the dynamic granular elastic-body analysis models for
sleeper-ballast structures by the FEM (FrontISTR) and Elastic-DEM
(QDEM)”
Dr. Akira Aikawa, Chief Researcher, Track Dynamics, RTRI
9. Panel discussion “What kinds of research topics are required for the ballasted tracks in the
future?”

Moderator: Prof. Ishikawa

Panelist: Prof. Peter Woodward, Heriot-Watt University
Prof. William Powrie, University of Southampton
Dr. Louis Le Pen, Senior Research Fellow, University of Southampton
Prof. Kimitoshi Hayano, Yokohama National University
Dr. Katsumi Muramoto, Director, Track Technology Division, RTRI
Dr. Yoshitsugu Momoya, General Manager, Track Structures and Geotechnology
RTRI



Prof. Powrie delivering keynote speech



Q&A following Prof. Woodward's keynote speech