News Release

Railway Technical Research Institute

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Safety Education Program for Maintenance Work within Track Area Using VR Training Material (STAT-VR)

The Railway Technical Research Institute developed a safety education program using a virtual reality training material STAT-VR (Safety Training Aid for Trackman) that provides virtual experience of the processes leading to accidents that occur during maintenance work within track.

【Overview of the program】

This program provides two tasks to participants, training with virtual-reality material STAT-VR (Fig.1) and “case transer exercise” that enable participants reflect on how the processes leading to an accident could apply on their own workplace. (Fig. 2)

STAT-VR

Using STAT-VR, participants are able to experience how an accident occurs and raise safety awareness through implementing maintenance work as a team leader in the virtual space. (Fig. 1) With this virtual-reality material, the participant can learn the limit of human attentiveness (when focusing on the maintenance work, attention to approaching trains is distracted) and the importance of early evacuation (If not evacuate earlier, it may lead to an accident).

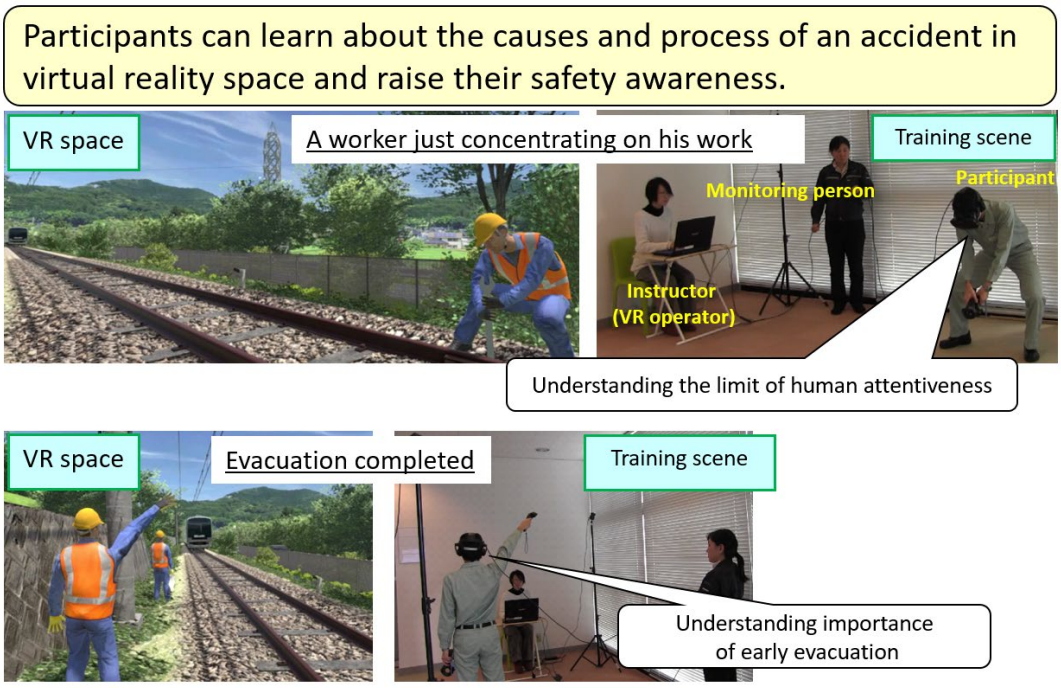

Figure 1: Training with STAT-VR

Case Transfer Exercise

In case transer exercise, the participants fill in a worksheet and have group discussions on specific measures to behave safely, applying the example of an accident caused by delayed evacuation in other workplace to their own work scene. Through the discussions, participants can deepen their understandings of the process of the accident and necessary measures.

After taking this training program, it was found that an increasing number of maintenance workers behave more safely. In particular, the participants are highly satisfied with the training with virtual-reality material and 96% of them rated “There is reality”.

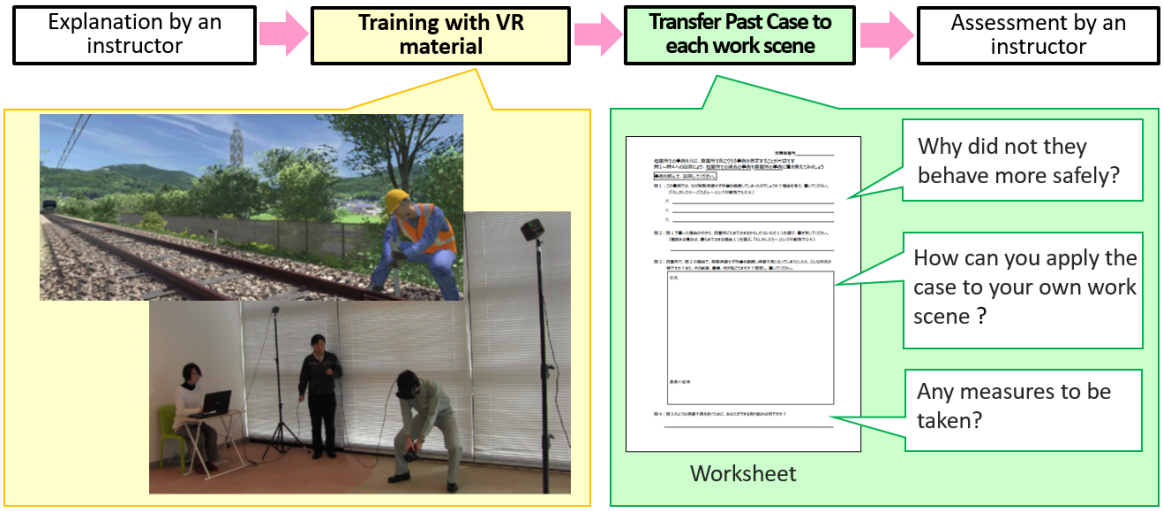

Figure 2: Steps of the safety education program

【Background of development】

RTRI has analyzed accidents that occurred during the maintenance work for track and electrical installations and conducted an opinion survey of maintenance staff. According to the results of them, we have found that it is necessary to provide the staff with the opportunities to learn about causes and processes of accidents triggered by unsafe behaviors as well as about scary results and impacts by accidents in order to further encourage them to make best efforts to ensure their safety during the work within track. (Fig.3)

This is the reason why RTRI has developed a new safety education program to learn about the process of accidents. (Fig.2)

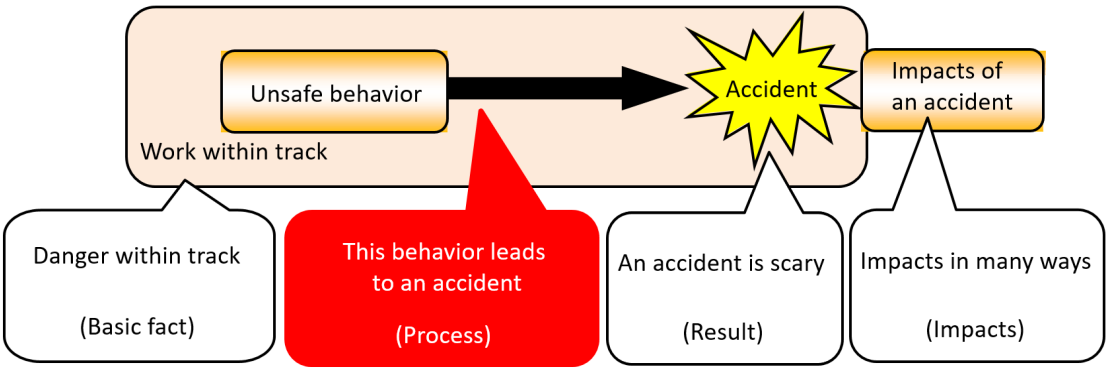

Figure 3: The progress of a situation when an accident occurs