

"The railway serious incident that the situation the door opened in the deck for entraining and detraining passengers while the train was running (vehicle damage)"

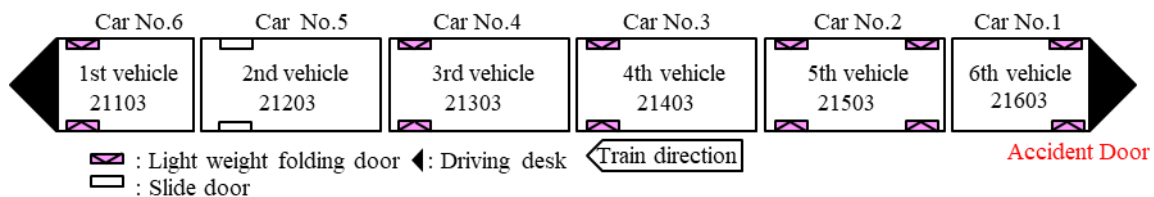
Railway operator : Kintetsu Railway Co., Ltd.  
 Serious incident type : Vehicle damage  
 Date and time : About 18:50, November 23, 2021  
 Location : In the premises of Ise-Asahi station, Nagoya Line, Asahi Town, Mie Prefecture.

<SUMMARY>

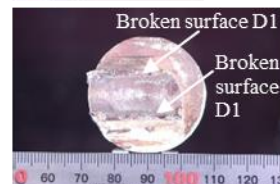
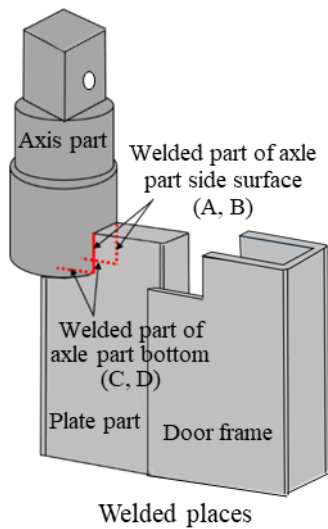
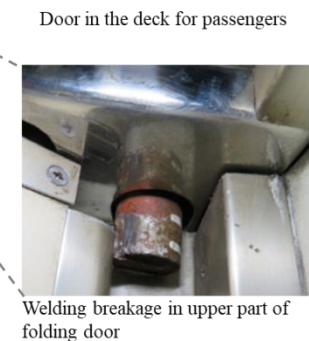
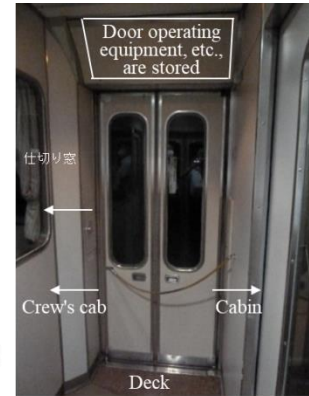
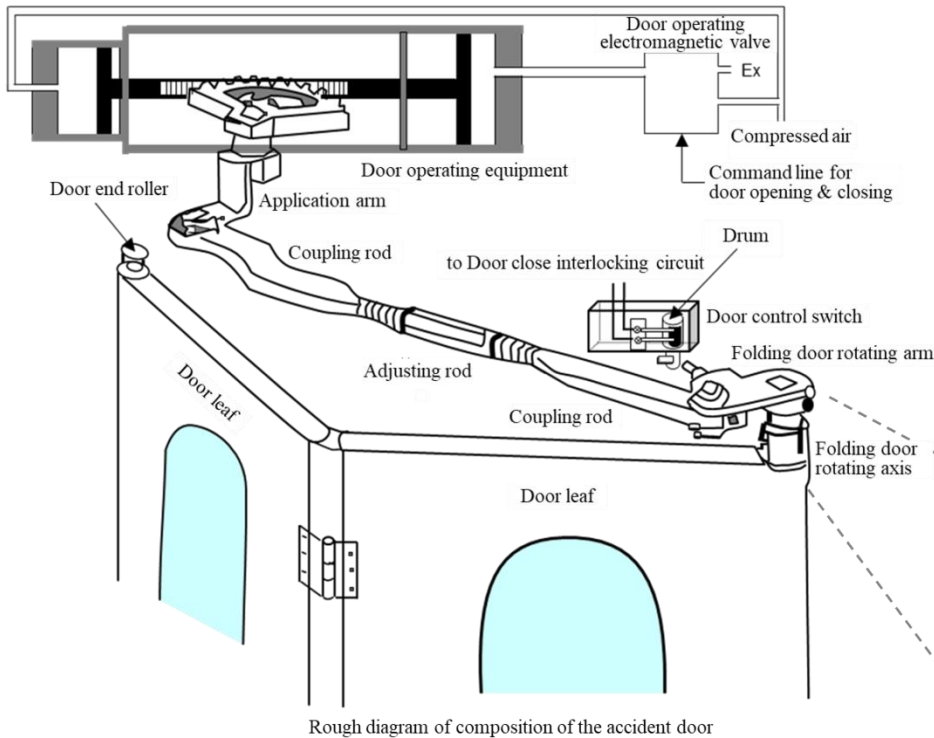
On Tuesday, November 23, 2021, the conductor charged in passengers of the Limited Express 0168 Train, composed of 6 vehicles started from Kintetsu Nagoya station bound for Osaka Namba station, of Kintetsu Railway Co., Ltd., noticed that the left door for entraining and detraining passengers in the rearmost of the train had been opened at around Ise-Asahi station, and communicated to the driver to stop the train. The driver, as received the communication, operated the brake to stop the train.

After the conductor charged in passengers locked the concerned door and checked all doors obeyed to the instruction from the dispatcher, the train resumed the operation as watching the concerned door. The train emergency stopped at the next stop, Kawagoe-Tomisuhara station, and let the deputy stationmaster boarded on the train to watch the concerned door, and continued the operation till to Kintetsu-Yokkaichi station, but the operation of the train beyond this station was suspended.

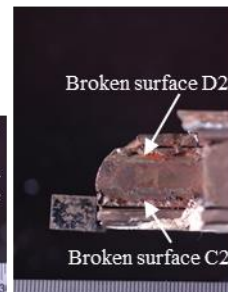
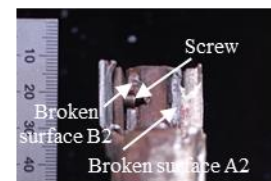
There were 127 passengers and three train crews, *i.e.*, the driver, the conductor, and the conductor charged in passengers, boarded on the train, but there was no injury due to fall off, etc.



Formation of the accident train



Broken surface A1, B1, C1, D1 : Rotating axis of folding door, axis part



Broken surface A2, B2, C2, D2 : Rotating axis of folding door, plate part

<PROBABLE CAUSES>

It is probable that this railway serious incident was caused as that the folding door moved and opened because the force, by the wind pressure and the swaying and vibration of the vehicle body while the train was running in high speed, which exceeded the resistive force against opening door, was acted, in the status that the pushing force caused by the door operating equipment did not transmit and the folding door would open if the external force had acted due to the breakage of the welded part between axis part and plate part of the rotating axis of the folding door, in the door in left side of the train direction in the rear most of the train, while the train was running.

It is probable that the welded part between the axis part and the plate part of the rotating axis

of the folding door was broken, because, it is probable that the strength had been lacked due to the poor welding when manufactured the folding door due to the existence of the poor fusion penetration in the welding as the grooving works had not been implemented obeying to the design drawings when implemented the welding works, besides, the proper treatment had not been taken before broke, since the welded status of the rotating axis of the folding door had not been checked visually, as the welded part had been covered by the door frames, the outer boards and the ornamental boards, etc., in the periodic inspection by the operators implemented after that. However, it is considered that there was no problem in the designed strength of the welding of the rotating axis of the folding door.

It could not be revealed details of why the welding had not been conducted obeying to the design drawings, because few materials at that time were kept in each related operator and the company charged in the welding works had been closed as the long time had passed from the time when the doors were manufactured.

#### <MATTERS EXPECTED TO PREVENT RECURRENCE>

##### (1) Improvement of the weld strength

It is necessary to increase the weld strength of the rotating axis of the folding door at present, by increased the volume of the welding when implemented the general inspection, for the rotating axis of folding door of all welding types, because there is the possibility that the weld strength decreased by the implementing status of welding works.

##### (2) Review of the inspection method of the doors in the periodic inspection

Since there is the possibility that the crack cannot be found visually in the general inspection and the critical parts inspection, the magnetic particle test shall be implemented to the welded places in the rotation axis of all folding doors, and the investigation on the causes should be implemented and the measures should be taken not only implement the repair or the replacement when abnormality is found in the welded place.

[Details can be obtained by the railway accident investigation report in the home page of the Japan Transport Safety Board, i.e., http://www.mlit.go.jp/jtsb](http://www.mlit.go.jp/jtsb)