

Railway serious incident investigation report

Railway operator : East Japan Railway Company

Serious Incident type : Facilities damage, the railway serious incident related with the situation that malfunction, damage, destruction, etc., hindered the safe train operation in the railway track, train protection facility, etc., were occurred, prescribed in Number 7, Clause 1, Article 4, of the Ordinance on Report on Railway Accidents, etc.

Date and time : About 6:10, April 12, 2015

Location : At around 1,715 m to 1,722 m from the origin at Tokyo station, between Kanda station and Akihabara station, Tohoku Line (Yamanote Line), Chiyoda City, Tokyo

SUMMARY

On April, 12, 2015, at about 6:10, while the Keihin-Tohoku Line Local Electric 522B train, composed of 10 vehicles, started from Isogo station bound for Omiya station of East Japan Railway Company, was operating between Kanda station and Akihabara station, the train driver noticed that the pole, installed between the neighboring Tohoku Lines, i.e., between Yamanote inner circle line and Yamanote outer circle line, was falling down to the direction of Kanda station, and applied an emergency brake to stop the train and operated the train protection radio.

There was no injured person by the incident.

PROBABLE CAUSES

It is probable that the serious incident had occurred as that the pole used for train operation tilted, in the process of the dismantling works of poles accompanied with the integrated overhead contact line construction of the electric circuit facility, and the pole was tilting seriously because the required measures did not implemented, though the information that the pole was tilted was announced to the plural staffs concerned, and fell down on the railway track in the service hours of train operation, and obstructed the structure gauge significantly.

It is probable that the pole had tilted and fell down as the safety factor, against tilting of the gravity type block foundation for the tilted pole, was deteriorated due to increased tilting moment by the horizontal force acted by the tensile force of the supporting wire, which was attached to the pole at higher position, 1.9 m, compared to normal height, in July, 2011, as the structure of the foundation was such that the allowable tilting moment of the foundation varied according to the vertical forces due to masses of pole, beams, overhead contact lines, etc.

Furthermore, it is probable that the safety factor against tilting decreased still more, to less than 1, because the beam and the overhead contact line etc., being attached to upper position of the pole were removed in March, 2015, in this situation, that caused decrease of the vertical force acted to the structure of foundation, although the tilting moment by the force acted in the supporting wire did not change.

It is probable that these situations were induced in relation with that the company staffs, who did

not understand the structure of foundation of the fallen No.6 pole, misjudged the foundation of the fallen pole had the firmer structure and sufficient safety factor, as same as the anchor-bolt type foundation introduced more than half of the foundations planted between Kanda station and Akihabara station.

It is probable that the reason why the required measures were not implemented when the information about tilting of the pole, was related with the followings.

(1) The prompt temporary measures were not implemented when the tilting of the pole was noticed, because the related staffs could not judge the situation as dangerous due to lack of the similar experiences as tilting of poles previously in the integrated overhead contact line construction work.

Furthermore, although the communication system for an emergency was prepared, the communication to the related section, such as the electric power dispatcher, etc., did not implemented promptly.

(2) No one in the Tokyo general dispatcher room did not understand that the situation was abnormal stage that should be dealt with urgently, because the report from the onsite transport section was "there was no obstruction in train operation".

Furthermore, the conventional procedures implemented in the dispatcher room, that the report to the facility maintenance commander should be done after the precise information of the dispatchers were collected, was related with the delay in communication to the related sections required.