—Overview and analysis of accident investigation cases—

Japan Transport Safety Board DIGESTS

JTSB (Japan Transport Safety Board) DIGESTS

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Railway Accident Analysis Report

Preventing railway accidents caused by snow

1. Introduction

Railway routes are laid out across Japan and serve as an indispensable means of transportation even under various adverse weather conditions. During snowfall and snow accumulation, necessary arrangements, such as that for snow removal, are taken according to the characteristics of each route, and in recent years planned train service cancellations have also been implemented.

From October 2001 through March 2024, the former Aircraft and Railway Accidents Investigation Commission and the Japan Transport Safety Board (JTSB) have published a total of 404 accident investigation reports regarding railway accidents and serious incidents (hereinafter referred to as “accidents”) investigated by them. Of accidents reported in these reports, 34 cases of accidents were attributed to snow or snowmelt, and looking at occurrences by cold-season-centered year (the period from August 1 of the preceding year to July 31 of the reference year), there is a tendency for the number of accidents to increase in regions hit by record or near-record heavy snowfall. Furthermore, under similar conditions, accidents also occurred in regions that do not usually experience much snow.

Some of these accident investigation reports point out human factors and organizational factors, indicating that responses by individuals or organizations to the rare situation of snow were not sufficient.

This digest aims to contribute to the prevention of accidents caused by snow, and introduces classifications and characteristics of situations where accidents caused by snow occurred, human and organizational factors, and specific countermeasures based on individual accident investigation cases. We hope this digest will be useful for understanding the nature of accidents during snowfall and snow accumulation and for considering route-specific organizational arrangements.

The left photo shows an unplowed track (level crossing) as seen from a train. Ruts where vehicles have passed through the snow on the road can be seen from the left toward the center of the photo. (From a railway accident investigation report)
The right photo shows the same level crossing without snow as seen from the road.