Report 99-113

Commuter EMU Train 3612, collision with cable drum

Melling Junction

13 June 1999

Abstract

At approximately 0720 hours on Sunday, 13 June 1999, Train 3612, a Wellington to Upper Hutt electric multiple unit service, collided with an empty cable drum which had been moved alongside the track by persons unknown. The cable drum had been in close proximity to the line for at least 2 weeks. There were no injuries. The leading unit suffered minor damage.

Safety issues identified were the lack of effective reporting and follow-up procedures for potential obstructions alongside the track.

One safety recommendation was made to the operator.

The Transport Accident Investigation Commission is an independent Crown entity established to determine the circumstances and causes of accidents and incidents with a view to avoiding similar occurrences in the future. Accordingly it is inappropriate that reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting process has been undertaken for that purpose.

The Commission may make recommendations to improve transport safety. The cost of implementing any recommendation must always be balanced against its benefits. Such analysis is a matter for the regulator and the industry.

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List of Abbreviations

EMU	electric multiple unit
kg	kilogram(s)
km/h	kilometres per hour
LE	locomotive engineer
m	metre(s)
mm	millimetre(s)
NCM	network control manager
TCO	train control officer

Rail Incident Report 99-113

Data Summary

Train type and number:	electric multiple unit 3612
Date and time:	13 June 1999, at approximately 0720 hours
Location:	Melling Junction
Type of occurrence:	collision with empty cable drum
Persons on board:	crew: 2 passengers: 23 (approximately)
Injuries:	nil
Damage:	minor
Operator:	Tranz Rail Limited (Tranz Rail)
Investigator- in-Charge:	R E Howe

1. Factual Information

1.1 Narrative

1.1.1 On Sunday, 13 June 1999, Train 3612 was a scheduled electric multiple unit (EMU) service operated by Tranz Rail from Wellington to Upper Hutt. The train consisted of a 2-car motor/trailer EMU set, and there were 2 crew and approximately 23 passengers on board as it approached Melling Junction at about 0720 hours.

1.1.2 The locomotive engineer (LE) became aware of a cable drum close to the track in the EMU headlight but as it had been there for some time he was not concerned. As he got closer the LE realised that the drum was positioned up against the left rail and not clear of the track as it had been during previous trips through the area.

1.1.3 The LE stated his train was travelling at about 70 km/h when he applied the emergency brakes. The train struck the drum and pushed it to the side of the track.

1.1.4 The EMU sustained minor damage to the brake hose and front left cowcatcher of the front car which made it inoperable from the front cab.

1.1.5 There were no injuries to crew or passengers. The LE reported the collision to the train control officer (TCO) and the on-duty network control manager (NCM) was advised of the incident. After a delay the train was able to proceed at reduced speed with the LE driving from the rear cab to Upper Hutt, where the train was withdrawn from service. During this time the guard and an off-duty train control officer assisted the LE by acting as pilots from the front of the train.

1.1.6 The LE of Train 3612 stated that he had been aware of the presence of the drum, as it had been there "for several weeks". He recalled it had been on the north side of the track against a relay box, about 2 m from centreline. He also stated that he had heard its presence being reported to train control over his train radio several days prior to the collision but could not remember exact details. The LE recalled the presence of the drum being discussed in the LEs' amenity room. He was satisfied it had been reported.

1.1.7 Following advice of the incident on Sunday, 13 June 1999, the NCM left a note on the traction control room operator's desk for the person commencing duty on that desk the following day to instruct the traction linemen to go to the site and remove the drum.

1.1.8 The linemen were advised by traction control room staff on Monday, 14 June 1999, but the drum was not removed from the site and secured in the traction compound until Tuesday, 15 June 1999, after a second request from the traction control room staff.

1.2 Cable drum details

1.2.1 The wooden cable drum was 1.75 m in diameter and 700 mm wide and weighed approximately 200 kg.

1.2.2 The empty drum had been stored in the company's traction compound approximately 50 m away from the point of impact. A general site plan is shown in Figure 1 and the relationship of the compound to the point of impact is shown in Figure 2.

1.2.3 About 2 weeks before the incident the drum had been reported as lying against the relay box immediately adjacent to the point of impact by the LE of Train 630 at approximately 2100 hours on Monday, 31 May 1999. He considered there was limited room for trains to pass and reported the potential obstruction to the TCO on duty.

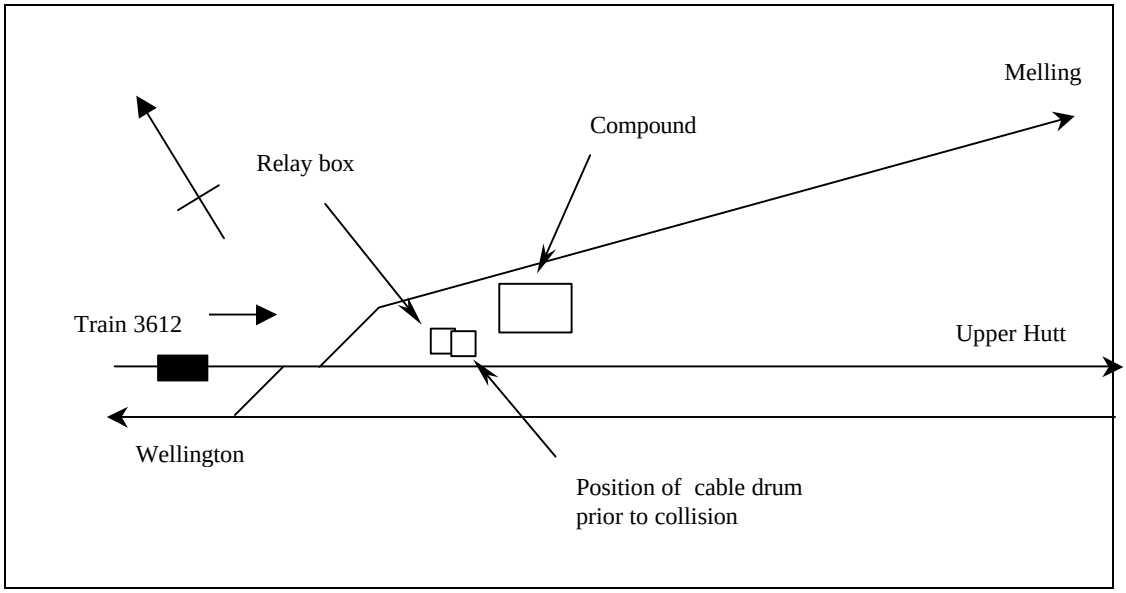

Figure 1
Site plan (not to scale)

Figure 2
The compound viewed from near the point of impact

1.2.4 After being advised of the presence of the cable drum by the LE of Train 630 the TCO contacted the LE of the next train scheduled to pass through Melling and asked him to check on the location of the drum and advise if he considered it to be a hazard.

1.2.5 The LE of the next train reported to the TCO that he did not consider its location constituted a danger. As the TCO had been on duty since 1500 hours that day and no daylight services had reported a concern regarding the drum he considered no further action was warranted.

1.3 Traction compound

1.3.1 The Melling Branch leaves the Wairarapa main line at Melling Junction and the traction compound is located between both lines, about 50 m from the point of impact.

1.3.2 The compound was enclosed by a fence approximately 3 m high with 2 double chain mesh gates at the southern end permitting vehicular access. The majority of the fence was topped with barbed wire, as were the gates. The fence line was in good condition and the gates, although showing signs of weathering, were in good condition and showed no evidence of being forced. There was a loose hinge on one gate.

1.3.3 The compound was usually kept locked and was infrequently visited by Tranz Rail staff in the course of their duties.

1.3.4 It was common practice to secure cable drums while in the compound with chains but there was no evidence to suggest this was the case in this instance.

1.4 Track patrols

1.4.1 Procedures for patrols are defined in Operations Group Code, Track, dated January 1996 which states in part:

> **P.20 PATROLS** are to be made in compliance with Clause P.21, P.22, P.23 and P.24. The purpose of the patrol is to ensure the track is safe for the passage of trains at authorised speeds until the next scheduled patrol. The patrol may be done by motor trolley or hi-rail vehicle. In areas where the use of hi-rail vehicles and/or trolleys are not allowed, the patrol may be carried out from a suitable train and other means to comply with clause P.24.
>
> **P.21 PATROL FREQUENCY**
>
> Lines are to be patrolled in compliance with Clause P.20 and as follows:

Lines	Frequency	Patrol By
All lines with regular Passenger services or more than 2 million gross tonnes of traffic p.a.	Twice per week (with a maximum of 5 days between patrols).	Any competent staff member with suitable training as approved by the Track and Structures Manager.
All other lines	Once per week (with a maximum of 10 days between patrols).	As above.

P.24 THE REQUIREMENTS OF A TRACK PATROL are as follows:

. . .

(j) Check for any other matters which could affect the safe running of trains, including clearance encroachments.

1.4.2 Patrols were carried out to code requirements during the 4 weeks prior to the incident. Reports did not include an unsecured cable drum adjacent to the track near Melling Junction.

2. Analysis

2.1 The empty cable drum weighed 200 kg and could have been rolled by 2 people. It was probably removed by persons unknown at a time when the compound gates were open and the compound unattended. It had been rolled approximately 50 m to a position where it lay between the relay hut and the track, about 2 m from track centreline.

2.2 Initial reporting procedures of the potential obstruction were followed by LEs, but follow-up action was not effective. Although several LEs were aware of its presence and had reported it, no further reports were made when their initial reports had not been acted upon. There was general acceptance of the presence of the empty cable drum close to the track by LEs, most of whom were aware of the initial reporting of the hazard.

2.3 When advised about the drum the TCO took no effective action to have the report investigated other than to have the LE of the next train pass through the site to check the position of the drum and advise him. Although the response indicated that the drum was not an immediate risk it did confirm the presence of the drum and should have been enough for the TCO to act on. The concern of the LE of Train 630 making the original report should have been sufficient to warrant more positive action. There did not appear to be any system in place which required the TCO to log, institute action, and close off such a potential hazard report.

2.4 Track patrols were carried out in accordance with Tranz Rail's codes but failed to identify the potential hazard and initiate action to have it removed.

2.5 It is of concern that following the collision the damaged drum, still capable of being moved and endangering rail traffic, was not removed and secured for a further 2 days after the collision.

3. Findings

Findings are listed in order of development and not in order of priority.

3.1 The empty cable drum was not secured in the compound prior to its removal.

3.2 The drum was removed by persons unknown from the traction compound probably some 2 to 3 weeks before the collision but its absence was not noticed.

3.3 The drum was left just clear of the main line for approximately 2 weeks.

3.4 Sometime between the passage of the service to Upper Hutt at approximately 0020 hours on Sunday, 13 June 1999, and the passage of Train 3612 at 0720 hours the drum was turned over to a position foul of the up main line, again by persons unknown.

3.5 The potential hazard posed to rail traffic by the cable drum was not recognised or actioned by the TCO, in spite of having had it reported to him by an LE.

3.6 The potential hazard created by the presence of the cable drum alongside the track was not recognised and actioned by the track patroller.

3.7 Despite the collision on 13 June, the cable drum was not removed and secured until 15 June.

4. Safety Recommendation

4.1 On 10 April 2000 the Commission recommended to the managing director of Tranz Rail Limited that he:

4.1.1 Improve the effectiveness of detecting and reporting procedures for potential obstructions to rail traffic to ensure that such obstructions are removed or secured expeditiously. (003/00)

4.2 On 5 May 2000 the managing director of Tranz Rail Limited responded as follows:

4.2.1 Final safety recommendation (003/00)
Tranz Rail's detecting and reporting procedures were not at fault in this incident. Tranz Rail accepts however, there was a failure to recognise the potential hazard the cable drum posed to rail services. Tranz Rail intends to address this issue.

In the preliminary safety recommendation submission, Tranz Rail proposed the safety recommendation could be reworded as follows:

> *Improve recognition of potential obstructions to rail traffic and ensure that such obstructions are effectively removed or secured (003/00).*

I note there is a change in wording by Transport Accident Investigation Commission from the preliminary wording of the recommendation. Tranz Rail does not consider the changes made by yourselves to create "final safety recommendation 003/00" reflect our belief that hazard recognition was the issue.

Approved for publication 12 April 2000

Hon. W P Jeffries
Chief Commissioner