



Report 99-121

No 84 shunting service

fall from wagon

Stillwater

1 October 1999

Abstract

At approximately 0700 hours on Friday, 1 October 1999, a rail operator fell from a slow moving wagon during shunting operations at Stillwater, when a handgrip detached as he was boarding the wagon. The rail operator fell backwards away from the wagon and landed alongside the track, sustaining minor injuries as a result.

The safety issues identified included:

- the inability of the inspection regime to identify the defective handgrip
- the unreported damage to, and unauthorised reinstatement of, handgrips arising from load handling and inappropriate shunting methods
- the susceptibility of repair welded handgrips to sudden failure
- the control of shunting in rail sidings.

Four safety recommendations were made to Tranz Rail Limited, and three to the Land Transport Safety Authority, to address these issues.

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List of Abbreviations

CFT	container flat top
Keighleys	Keighleys Stillwater Ltd private siding
km/h	kilometre(s) per hour
LE	locomotive engineer
LTSA	Land Transport Safety Authority
m	metre(s)
mm	millimetres
RO	rail operator
Tranz Rail	Tranz Rail Limited

Data Summary

Train type and number:	Shunting service 84
Date and time:	1 October 1999, about 0700 hours
Location:	Stillwater
Type of occurrence:	fall from wagon
Persons on board:	crew: 2
Injuries:	1 minor
Damage:	minor
Operator:	Tranz Rail Limited (Tranz Rail)
Investigator-in-Charge:	R E Howe

1. Factual Information

1.1 Narrative

- 1.1.1 On Friday 1 October 1999, No 84 shunting service arrived at Stillwater from Greymouth and berthed on the loop at about 0650 hours. The shunt was under the control of a rail operator (RO) and driven by a locomotive engineer (LE) from the cab.
- 1.1.2 After uncoupling the leading 2 wagons from the rake, the RO instructed the LE to move forward clear of the loop to yard points with these 2 wagons attached. The shunt moved forward and stopped approximately 10 m beyond the points, ready to propel back into the yard once the RO had set the route.

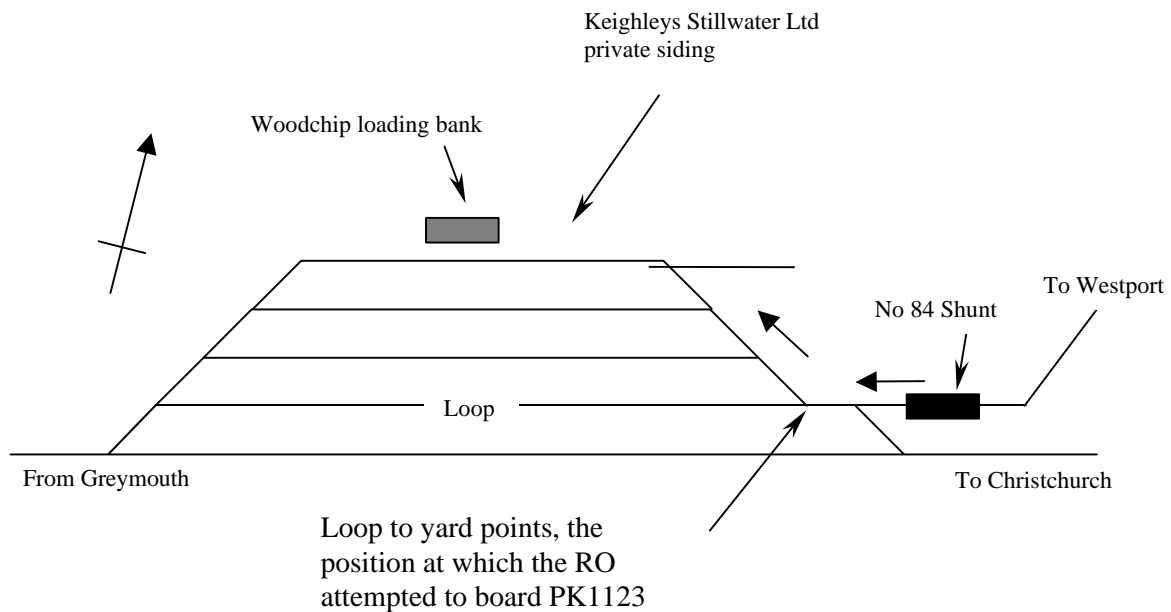


Figure 1
Site plan of Stillwater yard (not to scale)

- 1.1.3 After setting points in the yard for the intended move to Keighleys Stillwater Ltd private siding (Keighleys) the RO went to set the loop to yard points, beyond which the shunt was standing. At about 0700 hours, after setting these points for the intended movement, he instructed the LE by radio to “come in”.
- 1.1.4 The RO estimated the rake was approaching him at about 5 km/h and as it drew level with him he went to step up on to the handbrake at the right leading end of the leading wagon PK1123, grabbing the wagon handgrip to pull himself up. He put his left foot on the handbrake and pulled up with his left hand. His right hand was holding the radio transmitter for communicating with the LE.
- 1.1.5 As the RO applied his weight to the handgrip it detached from the wagon, throwing him back and outwards. He landed on his back approximately 1 m from the track and clear of the moving wagon.
- 1.1.6 The RO immediately radioed the LE to stop the train.
- 1.1.7 The RO sustained minor injuries to his side and back as he landed. He reported the incident to the operations controller in Greymouth and the train control officer and then continued his shift.

1.1.8 The RO stated that prior to the departure from Greymouth he had carried out the normal A check of his train, the terminal brake test required by Tranz Rail procedures, and did not notice anything unusual or unsafe about the handgrip on PK1123 at that time. He stated the handgrip was in the intended upright position and was not showing any visible signs of damage or deformation as he attempted to board the wagon.

1.2 Details of the failed handgrip on PK1123

1.2.1 The failed handgrip was 1500 mm above rail level and positioned in the same corner as the handbrake. This allowed shunting staff to use the handbrake as a riding platform while holding on to the handgrip.

1.2.2 The failed handgrip frame consisted of a steel channel welded to the wagon headstock. The frame was attached with welds that ran continuously around the edges of the frame where it contacted with the wagon headstock. The grip consisted of a round steel bar welded at both ends and located near the top of the steel channel.

1.2.3 The handgrip frame had a large notch in the side channel about 350 mm above the fracture (refer Figure 2) which had been painted over. A second, unpainted notch was also present about 320 mm above the fracture. Figure 2 shows the failed handgrip in position.

1.2.4 The handgrip frame had failed at wagon deck height and showed evidence of having been repaired by welding previously. Surface welds had been used with minimum penetration. The weld beads were discontinuous, uneven and sagging. Unfused lumps of excess weld were visible (refer Figure 3).

1.2.5 The failure was along previous welds from both sides of the handgrip with only a small section of the original metal remaining (see Figure 4). The majority of the fracture was covered in red brown rust indicating it had been broken for some time. The only bright area on the fracture was an area about 50 mm long and 2 mm wide.

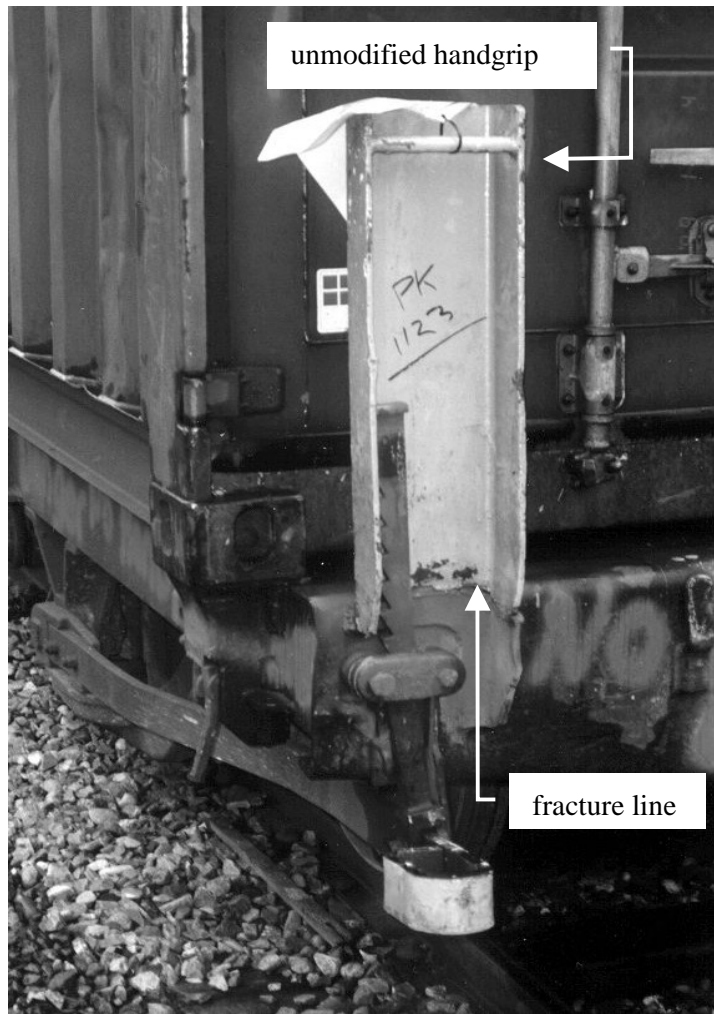


Figure 2
The failed handgrip held in its original position on PK1123 (the fracture line is shown)



Figure 3
Closer view of the failed handgrip in position with previous weld repairs visible

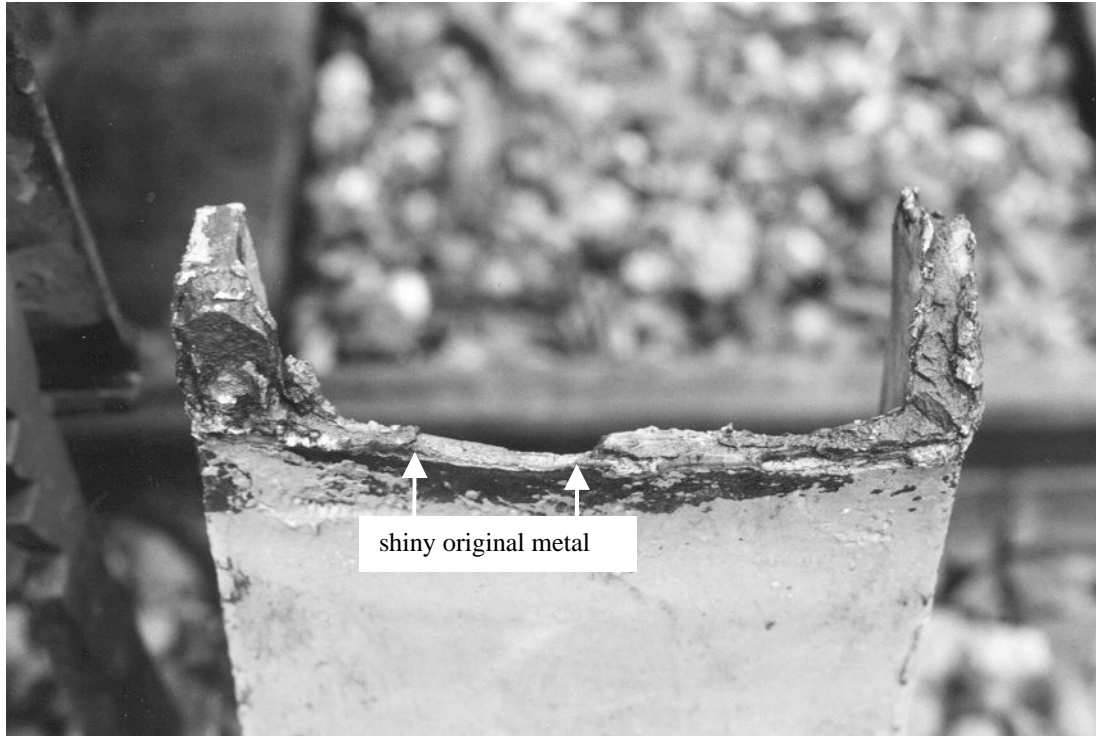


Figure 4
Failure surface

1.3 Handgrip repair history

1.3.1 Tranz Rail records for PK1123 showed that the wagon had been booked under the code “handgrip repairs” on the following dates:

15 December 1990 at Christchurch
28 March 1992 at Christchurch
16 May 1992 at Napier
27 February 1993 at Te Rapa
9 October 1993 at Christchurch
9 March 1999 at Timaru

The nature and extent of the repairs could not be determined from the records.

1.4 Wagon history

1.4.1 PK1123 was one of a group of wagons designated “Ashley pool” and used specifically for the conveyance of containers of wood chip from various sites on the West Coast to the Ashley pulp mill north of Christchurch.

1.4.2 The pool wagons in this traffic were loaded at one of 4 private sidings located at Hokitika, Stillwater, Ngahere and Reefton, and conveyed to the private siding at the Ashley mill for unloading. On their return the wagons were allocated to whichever siding required them for reloading.

1.5 Survey on condition of wagon handgrips

- 1.5.1 Following the incident the Commission’s investigator carried out a spot survey of flat deck wagons from the “Ashley pool” and the general traffic fleets, both at Stillwater and at the wagon repair depot in Addington. Several handgrips showed evidence of damage caused by either being pushed inwards (see Figure 5), or by being knocked outwards (see Figure 6). Further investigation of operating practices in the “Ashley pool” private sidings showed the inward damage was the likely result of shunting using equipment such as fork lifts or front end loaders. An example of each of these shunting options was seen in use at 2 of the 4 loading sidings serving Ashley. The outward damage was the likely result of containers being lifted on or off the wagons by straddle carriers. The Addington wagons were awaiting repair but the Stillwater wagons were still in service.



Figure 5
Example of a handgrip bent inwards

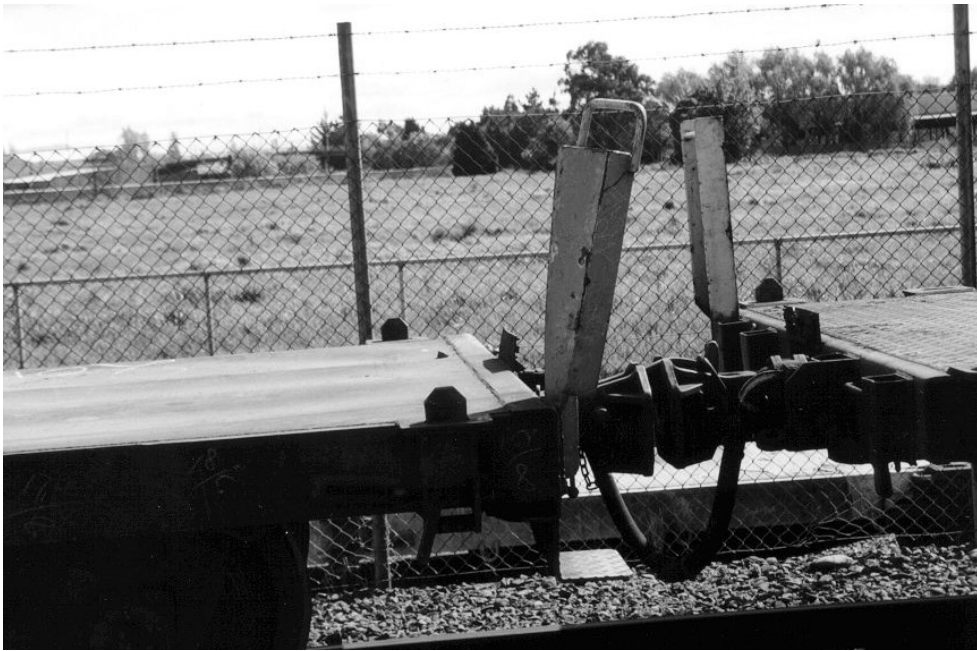


Figure 6
Example of a handgrip bent outwards



Figure 7
Example of a handgrip with stiffener attached.

- 1.5.2 Some flat-deck log wagons in the sample had stiffeners to support the channel handgrip frames. These frames generally showed evidence of impacts, but with little significant deformation (see Figure 7). However not all log wagon handgrips were strengthened in this way.
- 1.5.3 Handgrip frames on container flat top (CFT) wagons did not have such stiffeners due to lack of room. A number of handgrips on CFT wagons showed evidence of deformation, with some of these having been weld repaired (see Figure 8).



Figure 8
Example of a handgrip which had been repair welded

1.6 Handgrip design

- 1.6.1 The channel pedestal design shown in Figure 2 is the CFT as built handgrip.
- 1.6.2 A modification to the handgrip on most CFT wagons (UK, PK and HK) was promulgated in Field Modification Instruction MW0006 dated 7 May 1996.
- 1.6.3 The modification involved the addition of a raised grip to the top of the steel channel frame, increasing the height of the handgrip by approximately 100 mm.
- 1.6.4 Tranz Rail advised the modified handgrips were being progressively installed as wagons were brought in for repair and that the unmodified steel channel frame handgrip was still an approved option.
- 1.6.5 In 1998 Tranz Rail started progressively introducing a hoop design handgrip to replace the pedestal type. An example of this type of handgrip is shown in Figure 9. The handgrip involves a 24 mm diameter steel rod bent in a U-shape and fitted in combination with a lower, newer design footstep (the “ergonomic” design).

1.6.6 The new hoop type has been installed:

- to all new wagons since 1998
- progressively, by class, to the existing wagon fleet since 1999.

Tranz Rail advised it would take 5 to 10 years to complete installation to the existing fleet and that in the meantime the modifications detailed in 1.6.4 will continue.



Figure 9
The new hoop style handgrip in service

1.7 Shunting practices

- 1.7.1 Site inspection of the “Ashley pool” private siding facilities showed shunting methods were being employed which were likely to have resulted in loads being applied to handgrip frames. These included the use of both a rubber-tyred tractor and a forklift for positioning wagons to loading points. During the inspection one of the private sidings was being operated using a rubber-tyred vehicle to cut out empty wagons and place them to another road for loading. Bent and damaged handgrips were found during the inspection.
- 1.7.2 The random sample also revealed evidence of damage to wagon headstocks and the attached coupling handgrip used by shunting staff when moving between wagons for coupling or uncoupling purposes. In many cases these handgrips were badly damaged as a result of impact from equipment being used to shunt wagons from the headstock. Figure 10 shows a typical wagon.



Figure 10
Typical damage to a coupling handgrip, headstock and container

- 1.7.3 Certification requirements varied for private siding staff employed in shunting operations at the loading points. If private siding staff were required to enter Tranz Rail property during shunting operations they were required to be certified in “Stationary Shunting Duties” by Tranz Rail staff training personnel. In such cases a copy of Tranz Rail Operating Code Section 5 was provided to the private siding holder. Instruction 1.11 “Rubber Tyred Vehicles Engaged in Stationary Shunting Duties” of Section 5 stated in part:

Only staff certified in “Stationary Shunting Duties” are permitted to control the movement or assembling of wagons at Freight Branches or Sidings.

Before commencing shunting the operator will: ...

- * move wagons from a position clear of handbrakes, handgrabs and footstep but off centre on the headstock so that an adequate range of vision can be maintained at all times.

When private siding staff were involved in moving wagons but were not required to enter Tranz Rail property there was no requirement for any formal staff certification or training in shunting procedures by Tranz Rail training staff. This was the case in the private sidings involved in the wood chip traffic.

- 1.7.4 There were no joint operating plans in effect between Tranz Rail and any of the private siding holders involved in the wood chip traffic at the time of the incident.

1.8 Licensing of rail siding holders

- 1.8.1 To carry out the requirements of the Transport Services Licensing Act 1989 the Land Transport Safety Authority (LTSA) formulated criteria for the licensing of rail siding holders. These were advised to known rail siding holders by letter from July 1995 and stated in part:

If your siding and rail operations meet any of the following three criteria then you will require a rail service licence:

- i. If any movement (other than a minor alignment of rail wagons with the loading / unloading facility) of any railway wagon/s by your company (i.e. under the direct control of your management, employees, contracted staff, etc) is by means of a railway locomotive, a rubber tyred or tracked road vehicle; or fixed winch.
- ii If there is breaking up and/or assembly of rail wagon consists by your company.
- iii If there is any movement of rail wagons by your company over and/or immediately adjacent to a public road; and/or there is any public access to your private railway siding.

If your operation complies with any of the above criteria then you will require a rail service licence under the Transport Services Licensing Act 1989.

An exemption clause was included in the letter as follows:

However, if your siding does not meet any of the above three criteria then you can be exempted from the railway provisions of the Transport Services Licensing Act 1989. In order for us to be able to confirm that your organisation does not require a license would you please:

1. Ensure that the details shown on the attached LTSA reply form regarding the contact details of your company is correct.
2. Supply LTSA an update on the attached reply form regarding the nature and scale of your operations on your railway siding.
3. Sign the attached form that includes a written undertaking from your company that:
 - (a) To the best of your knowledge your company does not require a rail service licence as your rail siding and associated operation do not meet with any of the above criteria (i-iii); and
 - (b) That you will promptly advise LTSA should any of the above information regarding your company and/or your rail operation change.

- 1.8.2 None of the 5 rail siding holders involved in the "Ashley pool" woodchip traffic were known to LTSA as at 1 October 1999. For this reason no contact regarding licensing had been made with these siding holders.

- 1.8.3 LTSA advised that they have a register of licensed rail service operators and a separate register of exempted rail siding operators. LTSA considered these registers to be ongoing, rather than a list that is complete at a given date, to reflect new operators, change of ownership, new construction etc.
- 1.8.4 On 26 October 1999 LTSA received an updated list from Tranz Rail which included 4 of the 5 private siding holders involved in the “Ashley pool”. These private siding holders were written to and advised of the requirement to apply to be licensed or exempted, depending on the extent of their operations, under the terms of the Transport Services Licensing Act 1989. As a result of the responses received following that contact the LTSA exempted these 4 from requiring licenses.
- 1.8.5 As a result of the investigation into this incident the LTSA contacted the remaining rail siding holder concerned and have now certified this siding to be exempt.
- 1.8.6 LTSA advised that it periodically seeks updates from all siding holders on their operations, and along with all other siding holders known to LTSA the “Ashley pool” wood chip traffic organisations will be periodically audited to satisfy any possible future change in their status.

1.9 Personnel

- 1.9.1 The RO commenced employment with Tranz Rail in 1986. He was certified for shunting duties in 1989 and was certified for ASP¹ Shunting Duties in 1998. He was also certified for train examiner operations duties. All certifications were current for the duties he was performing.

1.10 Control of handgrip repairs

- 1.10.1 Mechanical staff advised that bent handgrips were either straightened while cold, or heated and straightened, depending on the severity of the bend. Repair welds were made after the handgrip had been straightened.
- 1.10.2 When the repair welds were undertaken on PK1123 at Timaru in March 1999 the requirements were covered by Mechanical Code M2000, Instruction 103.5 effective 6 October 1998, which stated:

Handrails, handgrabs, footsteps, ladders, walkways and guards must be in place, structurally secure, not bent or deformed such as to render them unsafe or unserviceable, clear of all obstructions and clearly visible. All welding must be performed by approved welders.

¹ The term ASP refers to the use of radios as a means of communication between the shunter and LE during shunting operations instead of the more traditional line of sight method.

1.10.3 In June 1999 this code was reissued and the following requirement was introduced:

5. Welding and securing of handrails, Grabs etc

Handrails, handgrabs, footsteps, ladders, walkways and guards must be in place, structurally secure, not bent or deformed such as to render them unsafe or unserviceable, clear of all obstructions and clearly visible. All welding only be undertaken by staff certified and approved to New Zealand Standard 4711 – testing of welders in the position they use, or NZS 1554 part 1, AWS or ASME. Fastenings must be tight, secure and free of rust deeper than light surface rust.

1.11 Wagon inspection

1.11.1 At the time of the incident the Tranz Rail wagon inspection regime included 4 wagon inspection procedures which were:

- an A check (terminal brake test) which was the responsibility of the terminal manager and was undertaken by a certified member of his staff prior to the departure of a train from a starting terminal. There was no requirement for inspection of safety items such as handgrips as part of the terminal brake test.
- a B check which covered safety items and was performed whenever 2 or more brake blocks were replaced, or after an incident. This replaced a previous 3 monthly check. However, Tranz Rail advised that brake block life averaged about 3 months depending on utilisation. The inspection requirements for handgrips during a B check were:

Safety Appliances	
Steps, ladders, handrails, walkways, handgrabs, guards:	Secure (welds not cracked) Not bent Treads not painted or slippery

- a C check which was performed before a wagon left a depot after repairs, with an upper limit of 27 months between checks. The inspection requirements for handgrips during a C check were:

Safety Appliances	
Steps, ladders, handrails, walkways, handgrabs, guards:	Secure Not bent Treads not painted or slippery

The last C check was done on PK1123 on 27 May 1999 when the wagon was over the wheel lathe.

- a random inspection of wagons available in yards and sidings. The inspection requirement for handgrips during a random inspection was to ensure “handgrips were satisfactory”.

1.11.2 The wagon repair inspection record for this wagon showed:

Notification	Description	Functional location	PPlt	Created on
10003014	3 Monthly Check twistlock jammed	PK1123	M823	08.10.1998
10016188	Wagon rep	PK1123	M220	25.11.1998
10031307	Cause 91 Defect 9960	PK1123	M720	12.02.1999
10036715	Straighten hand grip	PK1123	M823	09.03.1999
10050622	Clean numbers t/locks whb hose	PK1123	M823	13.05.1999
10052674	Spring pak fitted (ashley pool)	PK1123	M720	24.05.1999
10053816	W/lathe	PK1123	M720	27.05.1999
10084360	Cause 91 Defect 9960	PK1123		01.10.1999

Tranz Rail advised that the 3 monthly was in fact the last B check and that a C check would have been carried out at the time the wagon was in the repair depot for the wheel lathe.

1.11.3 There was no evidence to indicate that a random inspection on the wagon had been carried out between March 1999 and the date the handgrip detached from the wagon, although such an inspection may have taken place without any defects being found.

1.11.4 With a random check it was not necessary for wagons that had been found fit for service to be reported. Defective wagons were required to be “bad-ordered” with the appropriate codes and marked up for repair.

1.12 A previous handgrip failure investigated by the Commission

1.12.1 On 23 November 1998 a shunter was seriously injured during shunting operations in Wellington yard when the handgrip the shunter was holding failed during a coupling movement. The Commission’s initial investigation of this accident (98-121) showed the failure was a result of corroded fastenings which had not been identified during inspections. The Commission did not publish a report on this accident.

2. Analysis

2.1 The handgrip failure

2.1.1 The repaired handgrip had cracked under shock impact loading during normal operations some time before the incident. The small amount of remaining parent metal was insufficient to take the weight of the shunter and it failed as he pulled himself up.

2.1.2 The RO had not noticed anything unusual about the handgrip prior to departing Greymouth or on boarding the wagon, which would suggest that the handgrip was most likely in the upright position. It is likely that following repairs in Timaru in March 1999 the handgrip was bent in service and subsequently straightened, by persons unknown.

- 2.1.3 The repairs carried out in March 1999 by straightening and welding were undertaken in accordance with Tranz Rail practice at the time. The handgrip was repaired following cold re-straightening which would have introduced cold deformation into the remaining material making it more prone to brittle failure in that area.
- 2.1.4 The wagon had been booked for handgrip repairs 6 times in the last 9 years. Although details of the repairs were not kept, the handgrip frame showed evidence of repeated weld repair which is an indication of the demanding operating environment in which handgrips must be maintained.

2.2 Loading and shunting procedures

- 2.2.1 In general, loading and shunting in Tranz Rail yards is under controlled conditions using rail locomotives or properly equipped road tractors for shunting and approved equipment for loading. While damage to critical elements such as handgrips can occur, the probability of damage occurring is low and the probability of detecting any such damage high.
- 2.2.2 Such controlled conditions do not generally apply in private sidings where loading and shunting can be carried out in a variety of ways which increases the possibility of damage. The probability of such damage being “corrected”, such as by cold straightening bent handgrips, can lead to the situation where a sub-standard component continues in service undetected. The damage to the handgrip of PK1123 after its repairs in Timaru was probably sustained while the wagon was in a private siding during shunting or loading/unloading operations and it is likely that the bent handgrip was straightened, probably with the help of machinery, before the wagon was returned to Tranz Rail.

2.3 Handgrip design philosophy

- 2.3.1 The original CFT handgrips could cope with the harsh operating environment, but the potential arose for them to be used for other than the purpose for which they were designed, in particular as a point for moving wagons. The handgrips also got damaged from impact during the loading and unloading of containers. The danger is that the robust nature of the handgrip components gives a false indication of their fitness for purpose when damaged.
- 2.3.2 The new hoop design is much more flexible and less able to absorb impact and hide potentially dangerous damage.
- 2.3.3 Until the new hoop design is fully introduced the safety critical nature of this fitting is such that it is imperative that a system of damage control and authorised repair is introduced which, together with inspection, ensures they remain fit for purpose.

2.4 Inspection and repair standards

- 2.4.1 Wagon inspection frequencies were to code requirements. However, the current inspection regime did not identify the type of damage which caused this incident. Considering the possible nature and timing of this damage it is difficult to see how this deficiency can be overcome purely by improved inspection. Tighter control of shunting and loading practices, improved repair standards, and the prompt removal from service of wagons with deformed safety critical components should, however, minimise the possibility of a recurrence.
- 2.4.2 The investigation found difficulty in clearly defining when the equivalent of B and C checks had been done from the Tranz Rail records available. However, there appears no doubt that the wheel lathe attention some 4 months prior to the incident would have included inspection of safety items, including handgrips.

2.5 Previous handgrip failure

- 2.5.1 Following this incident a previous investigation (98-121) involving a handgrip failure resulting in serious injury which occurred in Wellington yard in November 1998 was reviewed to see if there was any commonality. Although the end result of handgrip failure was common, the circumstances were different and there is no indication of this being a repeat occurrence.

2.6 Licensing of rail siding holders

- 2.6.1 Although the 5 siding holders involved in the “Ashley pool” traffic had all been granted exemptions based on their questionnaire response one was observed carrying out shunting operations which were defined by the LTSA as requiring a rail service license.
- 2.6.2 Once siding holders were identified the granting of an exemption relied on the response from the rail siding holder to questions asked by LTSA in the letter, rather than a physical inspection of the site and the operating requirements. LTSA did have the right to request access to a site for this purpose. The damage identified, and the type of operation observed in this investigation indicates a review is desirable to ensure some form of control over operations involving limited wagon movements is achieved, either by licensing or by specific requirements being met before exemptions are granted.

3. Findings

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

- 3.1 The RO was appropriately certified and was carrying out a correct operation in the approved manner at the time of the incident.
- 3.2 Previous damage to the handgrip causing deformation and weld fracture was likely to have been masked by bending it back into position without repair, probably while the wagon was in a private siding.
- 3.3 Although the wagon had been inspected to Code requirements, such inspections could not be expected to detect all such damage and avoid incidents of this nature.
- 3.4 The design of the handgrips to resist high operational loads gave a false impression of the fitness for purpose of damaged handgrips.
- 3.5 There was no effective system to reduce the likelihood of damage to handgrips on wagons in private sidings and ensure they remained fit for purpose, nor was there an effective procedure to remove or repair those wagons that were damaged.
- 3.6 Although the standard of weld repairs to the damaged handgrip were less than optimum, the handgrip would have been strong enough for its intended purpose had it not been subject to further unauthorised and inappropriate repair techniques.
- 3.7 As at 1 October 1999 none of the rail siding holders involved in the woodchip traffic had been assessed in terms of the Transport Services Licensing Act 1989. It is possible that the damage concerned occurred during limited shunting movements within these sidings.
- 3.8 One of the since exempted rail siding holders was operating in a manner which required licensing under the LTSA’s defined criteria.

- 3.9 There is a need for control of both licensed and exempt rail siding holders to ensure the type of damage to wagons highlighted by this report is minimised by appropriate training and procedures.

4. Safety Actions

4.1 Tranz Rail advised the following safety actions were in hand or proposed:

- A joint operating plan had been formalised with Keighleys for the operation of the Stillwater siding.
- Similar requirements are under negotiation with all other private siding operators in the West Coast area.
- The lessons learnt from this incident will be applied to all private siding holders.

5. Safety Recommendations

5.1 On 14 December 1999 it was recommended to the Managing Director of Tranz Rail Limited that he:

- 5.1.1 undertake an immediate inspection of all wagons utilizing this type of handgrip and remove from service those showing evidence of straightening and welding which could adversely affect the integrity of the handgrip and its fitness for purpose (078/99); and
- 5.1.2 take immediate steps to control the weld repair of safety critical components to recognised standards to ensure the integrity of the original installation is retained (079/99); and
- 5.1.3 introduce operating procedures for Tranz Rail staff and customers who move wagons without using rail mounted vehicles, or load or unload wagons, which ensure:
- only approved equipment is used, and only by appropriately certified staff
 - equipment for moving wagons is applied at approved positions, and that these positions are clearly defined to staff concerned
 - that any damage causing deformation to safety critical components such as handgrips which could compromise fitness for purpose is identified promptly and the wagons removed from service (080/99); and
- 5.1.4 introduce standards for design, inspection and repair of safety critical components which ensure they remain fit for purpose in the intended operating environment (081/99).

5.2 On 13 April 2000 the Managing Director of Tranz Rail Limited responded as follows:

5.2.1 Tranz Rail has adopted safety recommendation **078/99**.

5.2.2 Tranz Rail has adopted safety recommendation **079/99**.

5.2.3 **080/99** Tranz Rail had adopted this safety recommendation as it relates to Tranz Rail's operations and staff. Furthermore, Tranz Rail has taken steps to ensure customers are aware of and are encouraged to comply with the recommendations.

Operating procedures currently exist in the form of the rail operating code and siding agreements. In addition, a damage reporting system is being trialled so customers and staff can ring the service centre 24 hrs to report damage. A wagon can be bad ordered on the spot and if appropriate prevented from entering service until the wagon has been inspected and repaired.

- 5.2.4 Tranz Rail has adopted safety recommendation **081/99**. Design standards exist. Design work is in accordance with the Mechanical Engineering Design manual and ISO 9001. A new design of handgrip is being fitted to this class of wagon at wagon overhauls and upgrades. The introduction of the wagon B check addresses the inspection and repair of safety critical components.

5.3 On 20 June 2000 it was recommended to the Director of the LTSA that he:

- 5.3.1 improve methods of identifying rail service operators and ensure that all identified operators are licensed or exempted as appropriate.
- 5.3.2 ensure that exemptions are only granted when LTSA is satisfied that operating methods meet approved criteria (049/00)
- 5.3.3 ensure that licensed rail siding holders have an approved operating plan that includes appropriate training and procedures to minimise damage to safety critical wagon components (050/00).

5.4 On 27 June 2000 the Director of LTSA responded as follows:

- 5.4.1 (a) LTSA intends to accept all three recommendations.
- 5.4.2 (048/00): LTSA considers the identification of current rail siding holders to be an ongoing process with LTSA seeking to correctly identify all such organisations.
- 5.4.3 (049/00): This recommendation has been in place since July 1995
- 5.4.4 (050/00): This recommendation has been a requirement on all licensed rail siding holders since the introduction of the rail safety regulatory regime by the Transport Services Licensing Act in April 1993.

Approved for publication 13 June 2000

Hon. W P Jeffries
Chief Commissioner