


PRELIMINARY INVESTIGATION REPORT INTO PRASA RAIL REAR-END COLLISION IN THE SECTION BETWEEN BOOYSENS AND CROWN STATION

OPERATOR	PRASA RAIL	
PERMIT NUMBER	ASP0002NTS	
INVESTIGATION SUBJECT	PRASA Rail -BooySENS-Crown Station rear-end collision	
DATE OF OCCURRENCE	17 July 2015	
REFERENCE NUMBER	RSR/20150717/001	
HEAD: OCCURRENCE INVESTIGATIONS	Thanduxolo Fumbata	

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1. ABBREVIATIONS

BOI	Board of Inquiry
PRASA	Passenger Rail Agency of South Africa
RSR	Railway Safety Regulator
TCO	Train Control Officer

2. STATEMENT OF INTENT

This investigation has been conducted in accordance with section 38 of the National Railway Safety Regulator Act, Act 16 of 2002 (as amended) and is conducted with the objective of determining the facts of the occurrence, the immediate cause and of making recommendations thereof.

3. OBJECTIVE

The preliminary investigation's objective is to collect and understand the factual data relating to this occurrence to assist the Board of Inquiry process.

4. SCOPE OF THE INVESTIGATION

This preliminary investigation included the following:

- (a) Inspection and analysis of the occurrence site
- (b) Facts gathered from the Booyens signal Control office

5. BACKGROUND TO THE INVESTIGATION

- 5.1 On the 17th July 2015 at approximately 17h54 PRASA Rail Train 9404 collided into the rear of the Train 9934 which had stopped at signal CRN69 which was at danger in the section between Booyens and Crown stations. The trains had departed from Booyens station seven minutes apart at 17h40 and 17h47 respectively.

- 5.2 The collision resulted in extensive damage to rolling stock and minor damage to the railway infrastructure. It was reported that 239 passengers and 2 train crew members were injured.
- 5.3 The collision occurred in the evening in clear weather conditions.

6. ON-SCENE PRELIMINARY INVESTIGATION

- 6.1. On the same evening the RSR despatched an investigation team to the occurrence scene and the following was found:
 - i. Train 9934 had stopped at signal CRN69 that was at danger (red) and at the rear signal BOY80 (which was supposed to protect this train) was at yellow (caution). Train 9404 proceeded through the yellow signal and collided with Train 9934. Signal BOY80 was supposed to protect Train 9934 and should have been red.
 - ii. No other anomaly was found with the other signals backward of the collision.

7. BOOYSENS SIGNAL CONTROL CABIN FACT FINDING

- 7.1 On 18 July 2015 the RSR investigation team visited the BooySENS signal control cabin to gather more facts regarding this occurrence, the following were the findings:
 - i. The signal technicians found that there was incorrect wiring which resulted in a false feed, this means that the detection was lost in this particular track.
 - ii. The last fault reported on signal BOY80 was on 24 February 2015. The reported fault was a track which was down and it was found there was a faulty cable. The fault was corrected by the technician on the same day but no verification was conducted on the work done. There were no other reported faults on this signal until the day of the collision.

- iii. No maintenance was done on this signal since the last fault. The maintenance cycle is supposed to be every three months.
- iv. There is a challenge with the availability of spares for the signalling system which is old and has gone obsolete.

8. RSR INTERVENTIONS AFTER THE OCCURRENCE

- 8.1 On 18 July 2015 the RSR issued PRASA Rail with a Prohibition Directive to halt train operations in the sections Kazerne-New Canada and Park-Naledi until assurance is given regarding the integrity of the signalling system.
- 8.2 PRASA Rail responded to the RSR on 19 July 2015 giving assurance that they have tested the signalling system in the affected sections and all was found to be functional. The RSR then uplifted the directive to allow for the operation of train. The up slow line where the collision occurred remains closed until further notice.

9. RECOMMENDATIONS

- 9.1. PRASA must adhere to the three monthly maintenance cycle.
- 9.2. PRASA must observe standard operating procedures for the maintenance of the signalling system.
- 9.3. An independent assessment by competent persons on the integrity of the signalling system will be conducted over the next four weeks.
- 9.4. The RSR to conduct an independent Board of Inquiry into the circumstances that led to this collision. The BOI will amongst other things scrutinize the following:
 - 9.4.1 The adequacy, effectiveness and personnel knowledge of the relevant procedures and training.

- 9.4.2 Background regarding activities pertaining to adherence to, specifically applicable train operating procedures by the train drivers and the TCO concerned as set out in local instructions, General Appendix and other applicable directives.
- 9.4.3 The adequacy and effectiveness of maintenance systems and procedures for signals.