Government of South Australia

Department of Planning, Transport and Infrastructure

PUBLIC TRANSPORT SERVICES

ENGINEERING INSTRUCTION

RAIL STRESS CONTROL

OF

ONKAPARINGA VALLEY BRIDGE

(VIADUCT)

TC1-DOC-000393

STOP **and THINK**

Zero Harm

Document Control

DOCUMENT STATUS

Document Owner: Director, Asset Management			
Action	**Name and Position**	**Signature**	**Date**
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DOCUMENT AMENDMENT RECORD

Rev	Change Description	Date	Prepared	Reviewed	Approved
0	Initial Issue	November 2013	Matthew Reedman	Philip Degenhardt	Brian Green

Contents

1.0 INTRODUCTION AND CONTEXT

1.1 INTRODUCTION

The Department of Planning, Transport and Infrastructure (DPTI) Public Transport Services Division (PTS) owns, operates and maintains the Adelaide Metropolitan Passenger Rail Network (AMPRN). This standard forms part of the engineering management system used to ensure safety and customer service levels are efficiently and effectively supported.

1.2 PURPOSE

The purpose of this document is to provide an engineering instruction for rail stress control of Onkaparinga Valley Bridge (viaduct).

1.3 SCOPE

This instruction applies to Seaford - Onkaparinga Valley Rail Bridge (Viaduct)

1.4 ACRONYMS AND REFERENCED DOCUMENTS

1.4.1 Acronyms

Acronym	Full Name
AMPRN	Adelaide Metropolitan Passenger Rail Network
COP	Code of Practice
DPTI	Department of Planning, Transport and Infrastructure
O&M	PTS Operations and Maintenance
OVB	Onkaparinga Valley Bridge (Viaduct)
PTS	Public Transport Services
REJ	Rail Expansion Joint

1.4.2 Referenced Documents

Document Number or Abbreviation	Title
CP-TS-964	Code of Practice - Volume Two - Train System - Rail Stress Control
ITPLR/TA2901	Seaford Extension - Onkaparinga Valley Bridge Rail Maintenance Plan (Interfleet Technology) (Knet #8021611)
SC-PW-PM-PLN-01200592	Viaduct Rail Stress Management Plan (Knet #7951992)

Note: Both the above documents (plans) should be used to managed the Viaduct

2.0 AMENDMENT TO PTS CODE OF PRACTICE CP-TS-964 - RAIL STRESS CONTROL

2.1 SECTION 6.2

Section 6.2 from CP-TS-964 shall be read as:

6.2.1 ***High temperatures***

Whenever the condition in clause 6.1(a) occurs or the rail temperature reaches seven degrees above the Monthly Adjusted Stress Free Temperature the following shall apply:

a) all tamping and lining shall cease;

b) the opening out of ballast cribs or shoulder ballast, jacking of sleepers, re-alignment of track and any work which requires removal of all the rail fastenings from the track shall not be carried out.

6.2.2 ***Taking rail temperatures during work***

If on a day when maintenance work is in progress, the Bureau of Meteorology predicts a temperature for that day exceeding ten degrees less than the Monthly Adjusted Stress Free Temperature, rail temperatures shall be taken frequently between 11.00am and the end of the work period. If the rail temperature approaches seven degrees above the Monthly Adjusted Stress Free Temperature, work shall be stopped and opened out cribs refilled immediately, full ballast shoulders restored, rails refastened, so that track is secure by the time seven degrees above the Monthly Adjusted Stress Free Temperature is reached.

6.2.2 ***Speed restrictions in hot weather***

When the shade temperature reaches two degrees less than the Monthly Adjusted Stress Free Temperature, all locations where major resleepering (ie 20 or more sleepers on a face) has been undertaken within the preceeding 6 months, a speed restriction of 40km/h shall be imposed over the affected track.

APPENDIX 1 OVB - RAIL MOVEMENT RECORD SHEET

Onkaparinga Valley Bridge - Rail Movement Record Sheet

Recorded By					**Signature**				**Date**	

Measurements

Nominal Rail Temperature (Dec C)						**Nominal Bridge Temperature (Dec C)**					
Location		**Item**	**Down Track**				**Up Track**				
			East Rail		**West Rail**		**East Rail**		**West Rail**		
REJ Blade Positions			**Expansion Deck**	**Inert Deck**	**Expansion Deck**	**Inert Deck**	**Expansion Deck**	**Inert Deck**	**Expansion Deck**	**Inert Deck**	
North Abutment	31625	Creep Monitoring Point									
Pier 4	31803	Creep Monitoring Point									
Pier 4	31833	Deck Gap Measurement									
Pier 4	31837	Rail Expansion Joint									
Mid Span 5	31854	Creep Monitoring Point									
Pier 5	31872	Rail Expansion Joint									
Pier 5	31876	Deck Gap Measurement									
Pier 5	31906	Creep Monitoring Point									
Mid Span 9	32059	Creep Monitoring Point									
Pier 12	32212	Creep Monitoring Point									
Pier 12	32242	Deck Gap Measurement									
Pier 12	32246	Rail Expansion Joint									
Span 13	32264	Creep Monitoring Point									
Pier 13	32282	Rail Expansion Joint									
Pier 13	32289	Deck Gap Measurement									
Pier 13	32316	Creep Monitoring Point									
Pier 15	32390	Creep Monitoring Point									
Pier 17	32465	Creep Monitoring Point									
Pier 17	32495	Deck Gap Measurement									
Pier 17	32499	Rail Expansion Joint									
Span 18	32516	Creep Monitoring Point									
Pier 18	32534	Rail Expansion Joint									
Pier 18	32538	Deck Gap Measurement									
Pier 18	32568	Creep Monitoring Point									
South Abutment	32746	Creep Monitoring Point									

Notes

1. Positive creep measurements indicate rail has moved towards Seaford

2. REJ gap to be measured for each blade. The gap between the blade stop block and the sleeper stop block nearest to the end of the respective blade to be measured.

3. OVB- Rail Movement Record Sheet can be accessed via PTS Engineering and Maintenance webpage for Control Register Forms