RAIL PAINTING CARLINGFORD LINE OCTOBER 2005

INTRODUCTION

Pacific Edge Pty Ltd was requested by RailCorp (RIC) to arrange painting of rails on the Carlingford Line between Camelia and Carlingford stations.
In order to undertake this project, Kingston Industries were requested to act as major Contractor to RailCorp. Kingston Industries appointed Sheridan Hire as the subcontractor to perform the physical work and supply the hirail equipment necessary to complete the works.
Work was planned to be carried out on the weekend of 8/9 October 2005.

SCOPE

The tasks required to complete the works included:

- Purchase of 1500 litres in total of Solacoat heat reflective paint and anti rust primer
- Provision of paint application equipment previously compiled for North Coast Rail Painting woks
- Modification and fitting of equipment to a hirail truck supplied by Sheridan Hire
- Training of staff in the fitting and operation of the apparatus
- Applying the paint to the main line during track possession

DETAIL

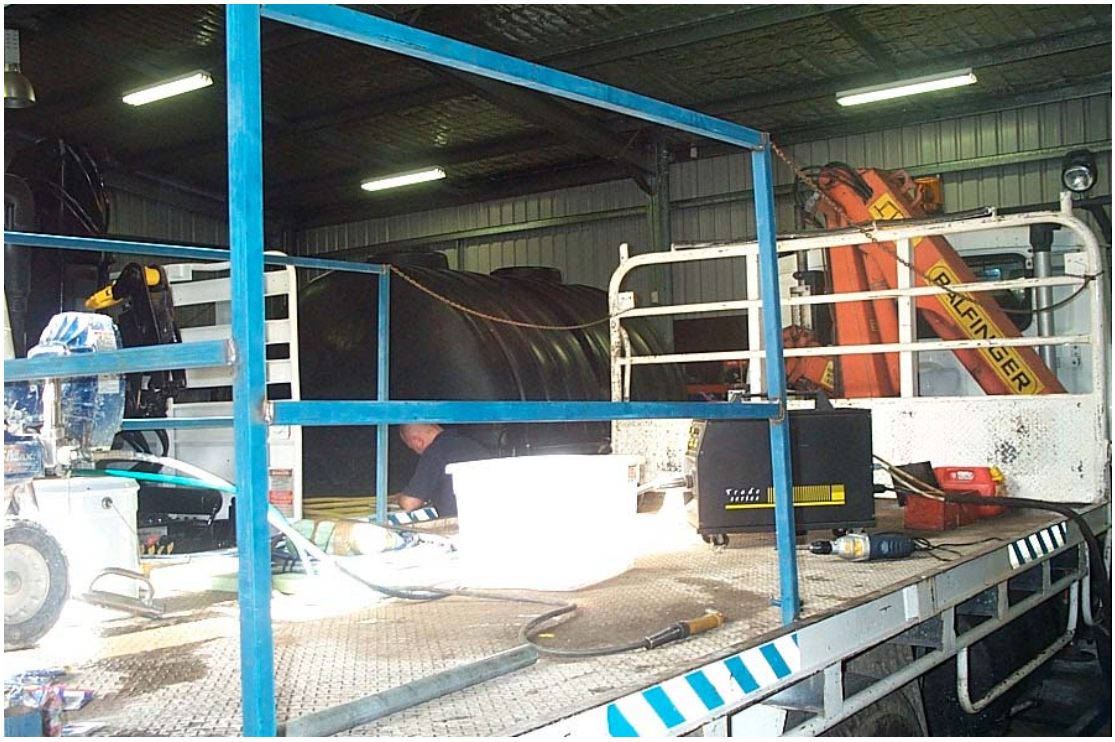
The following illustrated journal reveals the step by step process of preparation and application.

1. Sheridan Hire Depot is utilised to mount apparatus to hirail truck

2. The Mounting Frame previously used on the North Coast Line and the Main South Line

3. Tow Bar is removed from the hirail to facilitate installation of the Mounting Frame

4. Square tube is welded to the hirail to facilitate bolting the Mounting Frame to the Hirail



5. A safety railing is constructed on the Hirail to provide protection for employees travelling on the moving vehicle. The chained off area is for stored goods (paint), not for working men.

6. The Mounting Frame is fitted with a platform to allow a worker to stand and adjust paint spray guns whilst in motion.

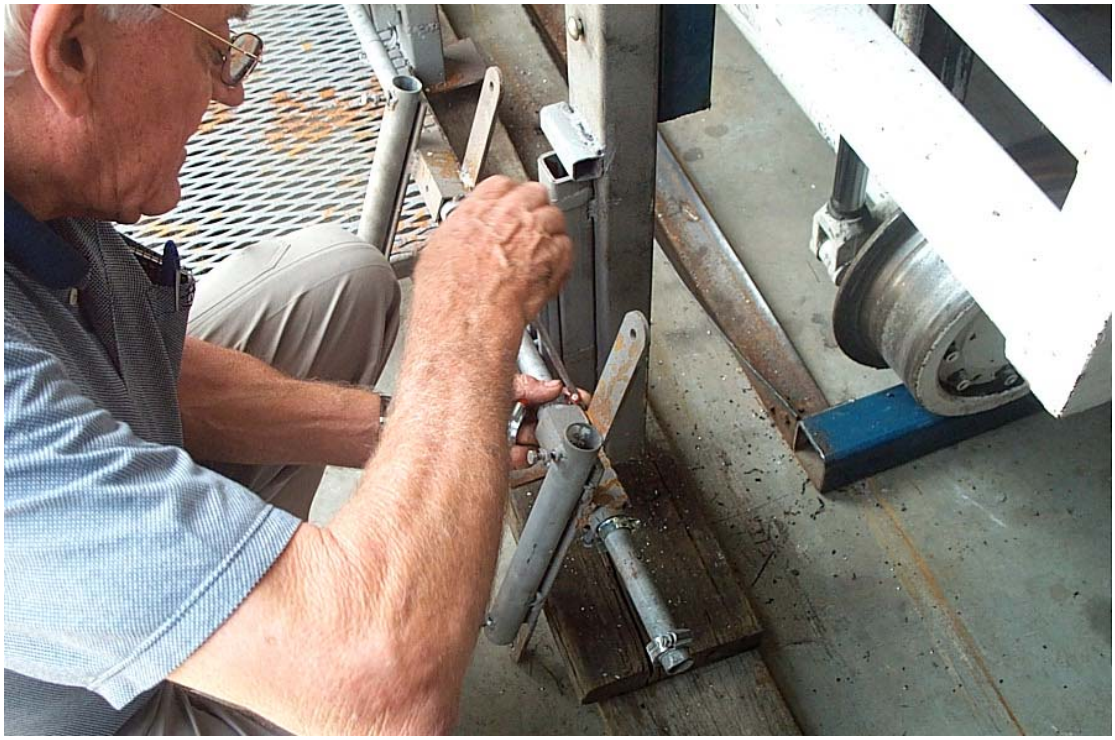
7. The spray gun holder is positioned on the frame at an approximate height to facilitate the spray guns (4)

8. The spray gun stems slide into the holder

9. Spray Tip Holders are fitted to the stems

10. The spray gun is fitted to the top of the stem

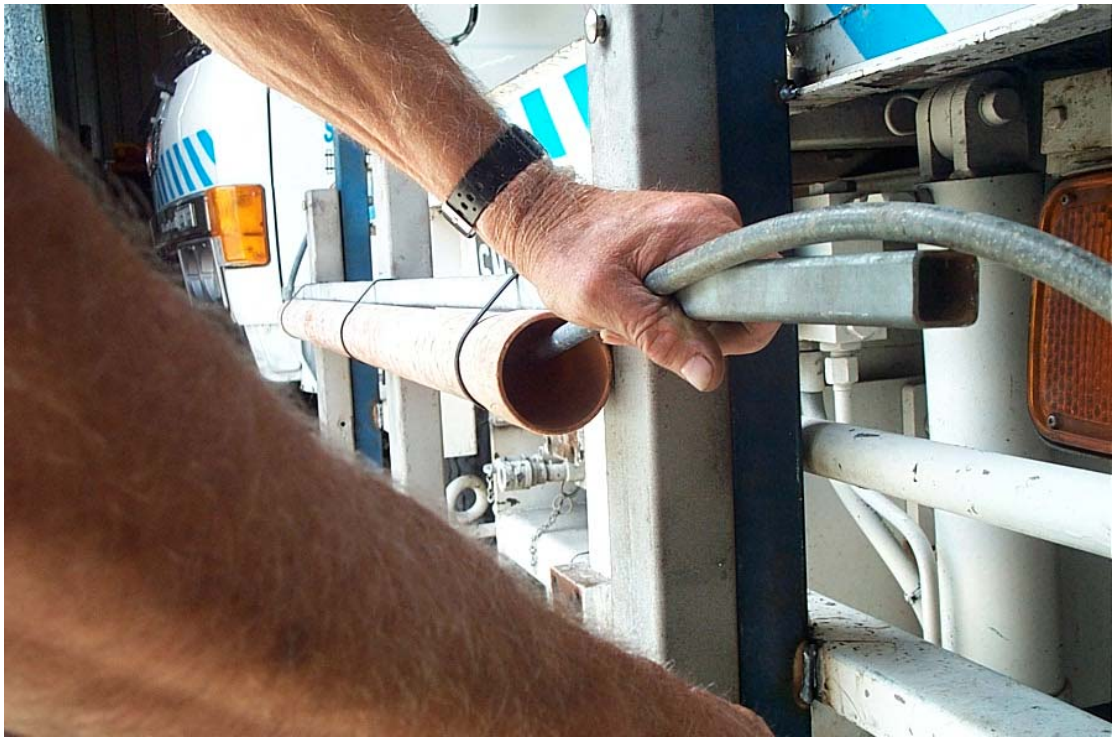
11. Octopus straps are used to hold the spray guns vertical while allowing the guns to flip up when coming in contact with ballast or other objects on the track



12. Hose clamps are used to limit lateral travel of spray guns

13. High Pressure hoses are connected to each spray gun

14. A total of 4 Hoses are used to connect the spray guns


15. Hoses are fed through a PVC pipe to offer protection to both hoses and staff

16. Cable ties hold hoses in position

17. The Primary Hose from the Pump is connected to a distributor connection

18. The Graco Airless Pump is positioned on the hirail truck

19. The pump is locked to the mounting bracket for security

20. The mounting bracket is welded to the hirail tray

21. Showing the hose connection points on the pump

22. A priming hose is fitted to the pump

23. All hoses are laid out on foam to stop rubbing. The hoses are long to absorb high impact hammer effect of the pump

24. All hoses (5) are connected via the distributor fitting

25. The hose distributor is then wrapped in foam for protection

26. The Nozzle of the pump has internal components that must be free to move and clean

27. The nozzle prior to connecting to the pump throat

28. The nozzle is installed onto the throat and tightened with a hammer

29. A tub is placed beneath the nozzle to supply paint to the pump

30. The frame is bolted in an elevated position whilst travelling to the worksite

31. Paint is transferred to the hirail from the support vehicle

32. The loaded hirail is positioned on the running line. As painting can only be carried out in the forward direction, the hirail will propel to the start of the worksite.

33. The Frame is now lowered to the working height

34. The spray guns are adjusted to the correct working height

35. Spray tips are adjusted to achieve optimum cover to the rail

36. A staff member stands on the platform and adjusts spray tips and clears blockages on the run. The hirail travels at 5 kph

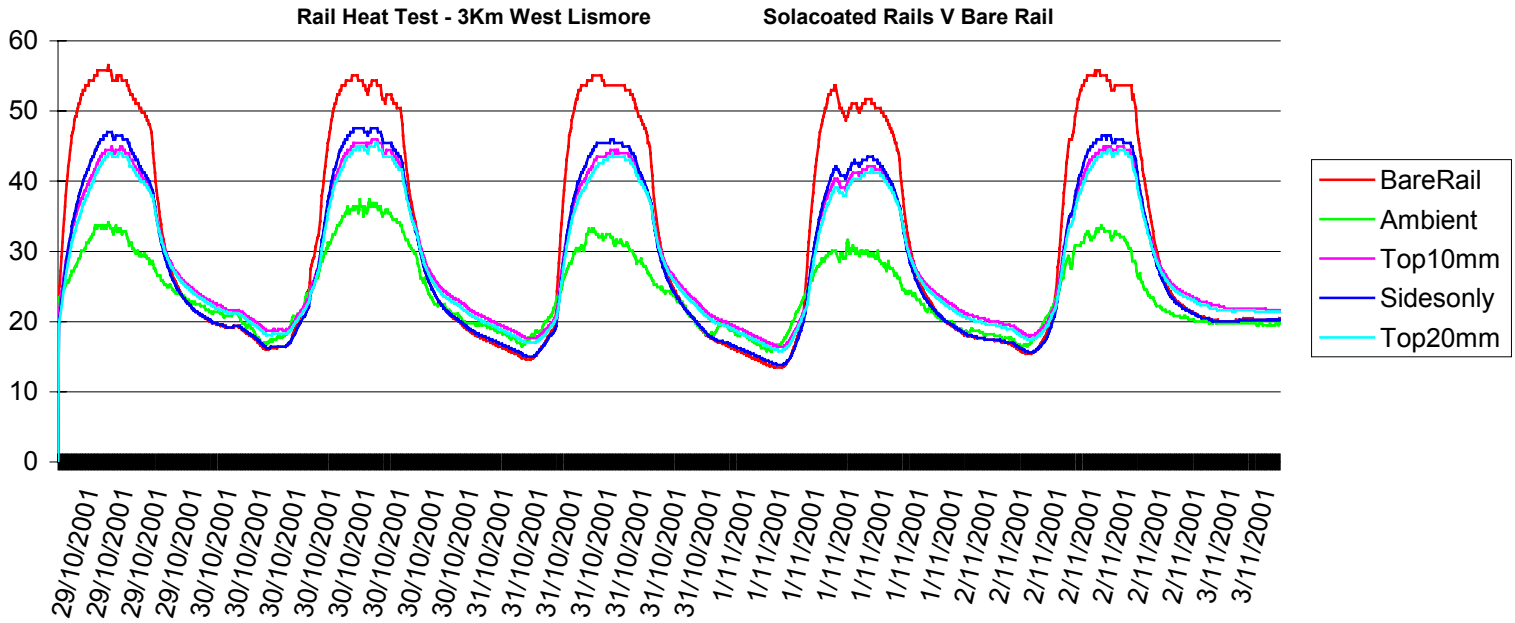
37. Paint is stirred prior to emptying into the tub

38. Paint is poured into the tub where it is sucked through the pump and into the spray hoses to the track

39. The finished product. Note the paint covers the sleeper plate and the ballast adjacent to the rail. This reduces heat radiating to the underneath of the foot of the rail. The rail received 2 coats of primer and 2 coats of Solacoat heat reflective paint.

40. Another view of the finished product

41. A Happy Client



The above chart shows results from North Coast Tests on Painted Rails in 2001.
These tests continuously logged ambient and rail temperature for painted and non painted rails.
Over 5 days the ambient temperature peaked between 30 and 37 degrees.
Rail Temperature peaked at 53 to 55 degrees for unpainted rail.
Rail Temperature peaked at approximately 43 to 48 degrees for painted rail.
If Rails are adjusted to be stress free at 35 degrees Celsius, then the compressive stress due to rail temperature is approximately halved for painted rails.
Thermal contact paste should be applied to the rail thermometer if field measurements are to be taken.
Rusty rail tends to show a lower temperature reading without such paste.

Peter Hanrahan
Pacific Edge Pty Ltd