Boilers for Rail, Code Of Practice

Alan Gardner
Background

- Australian Government Railways.
- Private sector.
- Vertically integrated.
- Chief Mechanical Engineer.
- Skilled artisans.
- Typically only construction drawings.
Boiler Workshops
End of the steam era

- Engineering moved onto diesel traction.
- Locomotives preserved.
- Reliance on existing government railway workshops.
- Operational staff carried on the tradition.
Preservation

• Operated on residual life.
• Loss of skills.
• Little supporting documentation.
• Contract labour.
• Set up of workshops.
• Payed staff required.
New Workshops
Today's environment

- Government regulation.
- Change to owner onus.
- Accredited inspectors.
- Government agency registration.
- Potential for prosecution.
Standards

• AS 1228. Design & construct.
• AS 3788. In service inspection.
• Principally covers welded construction.
• Does not account for cyclic service and good practice.
The pendulum

Regulation          De regulation

Accidents                   All well

Just right
Levels of control

- Standards (AS 1228 & 3788)
- Code of practice.
- Appendices.
- Guidelines.
RISSB

• Australasian Railway Association.
• Represent all stake holders of Rail.
• Including ATHRA.
• RISSB. Operations arm of the ARA.
• Engineering.
• Accredited with Standards Australia.
Four Parts

1. Scope
2. Inspection
3. Maintenance & repair
4. Appendices
Scope

- Sets the tone.
- Owner, Maintainer & Operator.
- Third party inspector.
- In house inspector.
- Government authority registration only!
How it works

Gov agency → Owner → SMS

Standards

Maintainer

Inspector

Engneering

Operator
Inspection

- Inspection zones.
Maintenance & repair

typical flush patch installed with full penetration welds

if access for welding or riveting is required, remove section of exterior or interior sheets

caulking
caulking tool

70°

Saw-Tooth Patch

WELD
Appendices

• Description.
• External corrosion.
• Expansion brackets.
• Stays.
• Tubes.
• Boiler fittings.
• Boiler history file.
Time line

• DG draft completed.
• 1\textsuperscript{st} open review completed.
• Re draft.
• 2\textsuperscript{nd} open review. Early 2010.
• Re draft.
• Validation April 2010.
• Publish. Mid 2010.
Thank you

Questions.