Heritage & Mainline Steam Locomotives, at their General Overhaul: NDT requirements, what’s the difference?
10 year General Overhaul from the Competent Persons prospective.

- Scope of NDT requirements i.a.w. the PSSR 2000 Written Scheme of Examination.
- NDT company operator(s) undertaking the work;
  - Qualified
  - Experienced
  - Comprehensive NDT report(s)
- Initial NDT to determine scope of work (cost implications)
- Ongoing NDT visits dependant on extent of boiler repairs
10 year General Overhaul from the Competent Persons prospective.

- Preparation of the boiler prior to NDT survey – what needs doing / where / how?
- NDT company operator(s) initial site visit not liaising with the Competent Person;
  - Completing their own scope of work
  - Competent Person requiring more NDT due to their findings
  - Further initial NDT required
Do we need to account for rivets?

\[ D = 24'' \]
\[ P = 150 \text{PSI} \]
\[ C = 3.3 \]

\[ t = \frac{PD}{C} \]
\[ t = \frac{150 \times 24 	imes 3}{3} \]
\[ t = 6.25 \]
\[ T = 32'' \]
\[ s = 5 \text{mm} \]

How do I prepare my Boiler for the NDT examination?
Visual examination by the Boiler Smith and Competent Person will identify some repairs required.
The obvious places to undertake NDT examinations
GROOVING:

- Corrosion fatigue type mechanism
- Lap joints
- Foundation ring to firebox
- Throat & Backhead radii
Do we need to account for rivets?

D = 24"
P = 150 PSI
C = 3.3

\[ t = \frac{P \times D \times C}{S_J} + 2 \]

\[ t = \frac{150 \times 24 \times 3.3}{28 \times 100} + 2 \]

\[ t = 6.25 \]

\[ T = 32' = 5\, \text{mm} \]

The not so obvious places to undertake NDT examinations
Don’t forget the superheater header & main steam pipe NDT examinations
Don’t forget the flue tube bottle neck weld(s) NDT examinations
On going repairs will require further NDT examinations.

Removal of plates may reveal further defects. NDT doesn’t reveal the full picture.
In Summary:

- Approved NDT operator(s) by the Competent Person
- Approved scope of NDT examinations required by the Competent Person
- Owner/user informed of what needs doing / where and how
- Closer liaison with the NDT operator(s) and Competent Person
- Production of comprehensive NDT reports