

Date Distributed: August 19, 2020



THE
NATIONAL
BOARD
OF BOILER AND
PRESSURE VESSEL

NATIONAL BOARD TASK GROUP LOCOMOTIVE BOILERS

AGENDA

Meeting of August 27th, 2020
Virtual Meeting using Zoom

The National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229-1183
Phone: (614)888-8320
FAX: (614)847-1828

1. Call to Order

1:00 PM local time.

2. Introduction of Members and Visitors

3. Check for a Quorum

4. Awards/Special Recognition

5. Announcements

6. Adoption of the Agenda

7. Approval of the Minutes of July 2019 Meeting

The minutes are available for review on the National Board website, www.nationalboard.org.

8. Review of Rosters (Attachment Page 4)

a. Membership Appointments

b. Membership Reappointments

c. Officer Elections

9. Interpretations

None

10. Action Items

Old Business

Item Number: 18-6	NBIC Location: Part 2, S1.4.2.9	Attachment Page 5
General Description: was NB14-1802, Riveted Stay bolt dimensions		
Subgroup: Locomotive		
Task group: (PM) M Janssen		
July 2019 Meeting Action: Progress Report		
August 2020 Meeting Action:		

New Business

Item Number: 20-69	NBIC Location: Part 3, S1.2.11.5	Attachment Pages 6-7
General Description: Welds Across Riveted Lap Seams		
Subgroup: Locomotive		
Task group: (PM) L. Moedinger		
Explanation of Need: Clarify wording regarding weld taper and provide a cleaner figure to better illustrate the repair. Historical Boilers is considering adding the same text to their Section.		
August 2020 Meeting Action:		

Item Number: 20-70	NBIC Location: Part 2, S1.4.2.5	Attachment Page 8
General Description: Inspection of Furnace Slides		
Subgroup: Locomotive		
Task group: (PM) G. Ray		
Explanation of Need: Furnace slide supports which are locked in-place by corrosion will adversely impact the thermal expansion of the boiler and lead to staybolt breakage.		
August 2020 Meeting Action:		

Item Number: 20-71	NBIC Location: Part 2, S1.6	Attachment Page 9
General Description: Safety Valve Sizing (Correct Use of Capacity Charts)		
Subgroup: Locomotive		
Task group: (PM) G. Ray		
Explanation of Need: This is to ensure safety valves provide the adequate relieving capacity for steam locomotive boilers.		
August 2020 Meeting Action:		

11. Future NBIC Meetings

- January 11-14, 2021, Loews New Orleans, New Orleans, LA
- July 12-15, 2021, The Hilton Netherland Hotel, Cincinnati, OH

12. Adjournment

Respectfully submitted,



Jeanne Bock
TG Locomotives Secretary

Committee Roster

Last Name	First Name	Interest Category	Role	Exp. Date
Ray	G. Mark	General Interest	Chair	10/30/2022
Musser	Rick	Users	Vice Chair	10/30/2022
Bock	Jeanne		Secretary	01/30/2099
Butler	Steven	General Interest	Member	01/30/2022
Conrad	David	Users	Member	01/30/2022
Cross	Charlie	Users	Member	07/30/2023
Franzen	Robert	General Interest	Member	01/30/2022
Griner	David	General Interest	Member	01/30/2022
Janssen	Matthew	General Interest	Member	07/30/2022
Jordan	Mark	Jurisdictional Authorities	Member	07/30/2023
Lee	Stephen	Users	Member	01/30/2022
McCormack	Doyle	General Interest	Member	01/30/2022
Moedinger	Linn	Users	Member	07/30/2022
Stone	Richard	Manufacturers	Member	01/30/2022
Welch	Paul	Authorized Inspection Agencies	Member	07/30/2023

Item 18-6

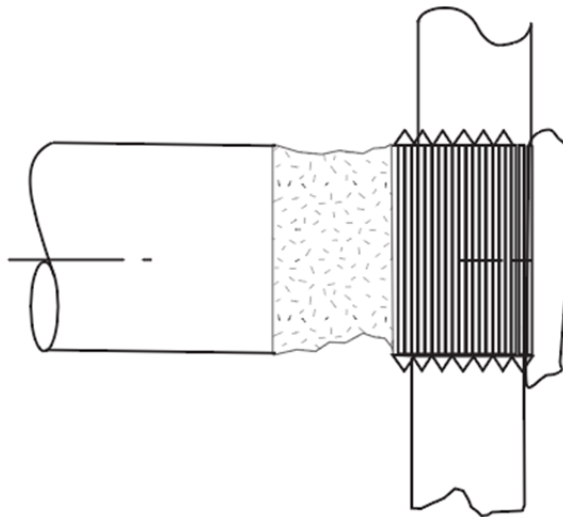
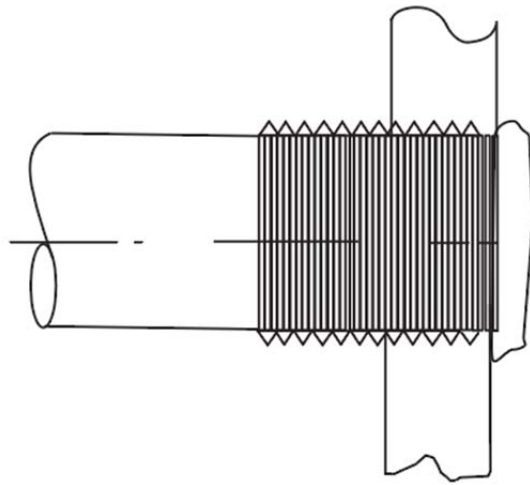
S1.4.2.9 STAYBOLTS

c) Staybolt head flush with or below the surface of the sheet; NBIC Part 2, Figure S1.4.2.9-a

Insert Figure S1.4.2.9-a "Riveted Head Staybolt Dimensions" figure below "g)"

e) Waterside corrosion; NBIC Part 2, Figure S1.4.2.9-b

Insert Figure S1.4.2.9-b "Riveted Head Staybolt Dimensions" figure below Figure S1.4.2.9-a



Task Group Locomotive Boilers

Summary

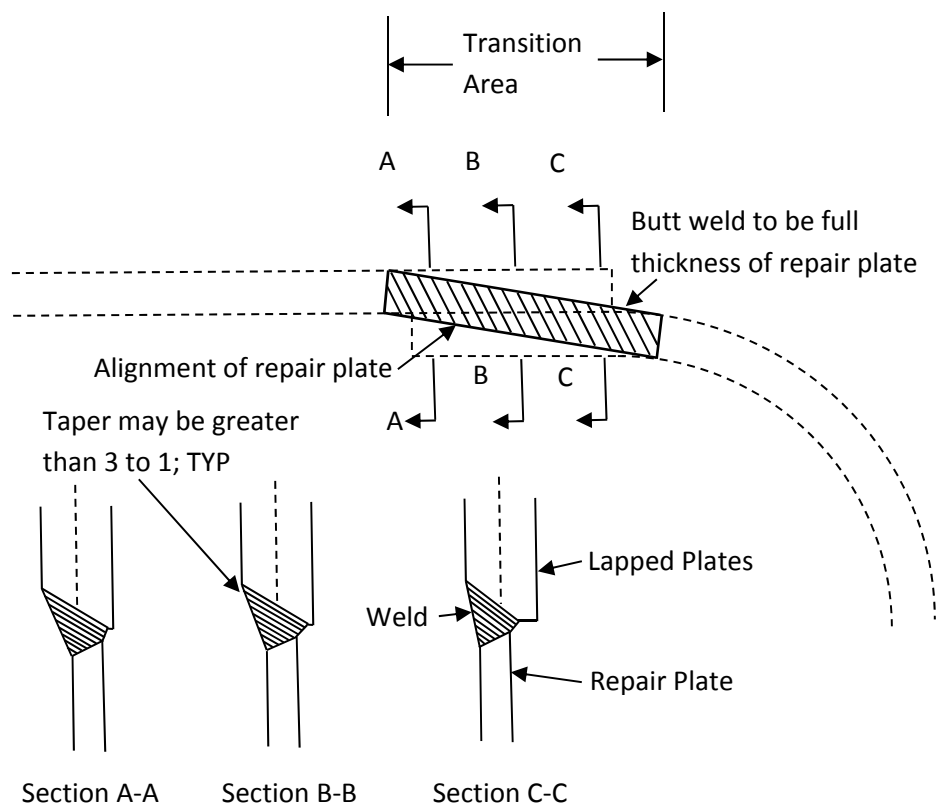
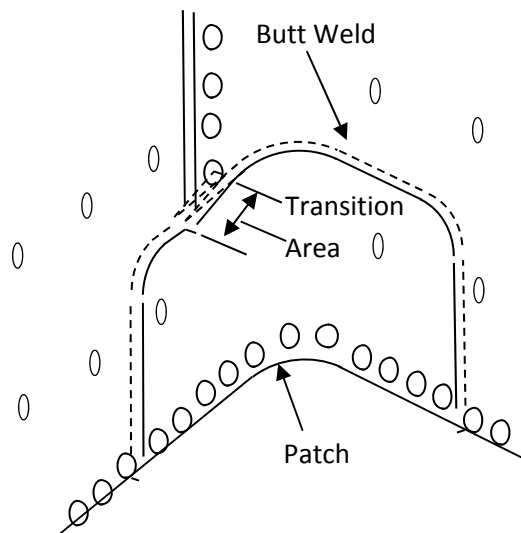
Add a sentence in S1.2.11.5 i); Replace drawing in Figure S1.2.11.5-c1 with new drawing below.

Proposal

S1.2.11.5 REPAIR OF FIREBOX, WRAPPER, AND TUBESHEET KNUCKLES

i) For one-piece flange knuckle joint patches in portions of a riveted lap joint or in mud ring corners with a lap joint in the firebox, the knuckle patch shall be supported on at least one of the two planes adjacent to the flange, by means other than the weld. See Figure S1.2.11.5-c1. The weld shall be at least the full thickness of the new plate being installed. Taper of weld in transition area may be greater than 3 to 1. Volumetric examination is not required. This type of repair shall be considered a repair.

FIGURE S1.2.11.5-c1
NEW PATCH ALIGNMENT WITH ORIGINAL MATERIAL



Task Group Locomotive Boilers

Summary

Many steam locomotive operators do not inspect the sliding firebox supports on their locomotives (when they are equipped). Inspections have found them to be rusted in-place causing breakage of connection bolts and other damage to the locomotive firebox and mudring.

Furnace slide supports which are locked in-place by corrosion will adversely impact the thermal expansion of the boiler and lead to staybolt breakage.

Proposal

S1.4.2.29 BOILER ATTACHMENT BRACKETS

The boiler attachment brackets and associated components and fasteners used to secure the boiler to the frame shall be inspected for:

- a) Correct installation;
- b) Damaged or missing components;
- c) Looseness;
- d) Leakage;
- e) Loose, bent, broken, or damaged rivets, nuts, bolts and studs;
- f) Defective rivets;
- g) Provision for expansion; and
- h) Corrosion which may preclude free movement of sliding supports

Task Group Locomotive Boilers**Summary**

Locomotive safety valves may have nameplate data that is missing or illegible. Owners have to rely on capacity charts produced by the manufacturers. These charts were dependent upon the lift of the valve. The valve lift prior to around 1920 was fixed at 0.1 inch. However, after 1920 or so, manufacturers began to increase the lift of their valves. This lead to increased relieving capability. Thus, it is imperative to understand the lift of the valve on the locomotive in order to assign the correct relieving capability.

This is to ensure safety valves provide the adequate relieving capacity for steam locomotive boilers..

Proposal

a) The minimum safety valve capacity in pounds per hour (kilograms per hour) shall be calculated by multiplying the boiler heating surface area by the factor from the appropriate chart in NBIC Part 2, Table S1.6 (1 pound steam/hr/sq. ft = 4.88 kg steam/hr/sq meter).

b) If the original nameplate data for the locomotive's safety valves is missing or illegible, the relieving capacity of the installed safety valve(s) shall be obtained from the manufacturer's capacity charts corresponding to the valve model, diameter, pressure setting, and valve lift.