

Date Distributed: August 19, 2020



**THE
NATIONAL
BOARD**
OF BOILER AND
PRESSURE VESSEL

NATIONAL BOARD TASK GROUP LOCOMOTIVE BOILERS

MINUTES

Meeting of August 27th, 2020
Virtual via Zoom

These minutes are subject to approval and are for committee use only. They are not to be duplicated or quoted for other than committee use.

The National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229-1183
Phone: (614)888-8320
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1. Call to Order

Chair, G. Mark Ray called the meeting to order at 1:07 pm EDT.

2. Introduction of Members and Visitors

Introductions took place amongst all members and visitors virtually via ZOOM. The attendance sheet was checked off by the Chair and Secretary. (Attachment Page 1)

Task Group Locomotive Boilers

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

▪ Visitors

David Domitrovich	
John Rimmasch	

3. Check for a Quorum

With the attached roster a quorum (12 out of 14 present) was established. There was a motion to approve the roster. The motion was unanimously approved.

Task Group Locomotive Boilers

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

4. Awards/Special Recognition

None to report

5. Announcements

- Voice Voting for each item was used. It was assumed all voted approved and then asked if anyone is voting “not approved”, “abstention”, or “not voting”.
- Naming of Files is to be in the format of the following: Item Number Person Date
- The group was made aware of the Raise Hand feature.
- The group will be sent an email outlining making use of the cloud – Nfilesshare

6. Adoption of the Agenda

- Item 20-70 has the incorrect reference listed as Part 2, S1.4.2.5. It should read Part 2, S1.4.2.29

There was a motion to adopt the Agenda with the noted correction. The motion was unanimously approved.

7. Approval of the Minutes of July 2019 Meeting

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

There was a motion to approve the Minutes of July 2019 as published. The motion was unanimously approved.

8. Review of Rosters (Attachment Page 1)

a. Membership Appointments

- David Domitrovich – interest category = User. Mr Domitrovich will send his resume accordingly.
The TG took a vote to appoint David Domitrovich to the TG. The vote was unanimously approved.
This will be passed onto SC R&A and then to the Chairman of the Board for consideration.

b. Membership Reappointments

None to Report

c. Officer Elections

None to Report

9. Interpretations

None to Report

10. Action Items

Old Business

Item Number: 18-6	NBIC Location: Part 2, S1.4.2.9	Attachment Page 2
General Description: was NB14-1802, Riveted Stay bolt dimensions		
Subgroup: Locomotive		
Task group: (PM) M Janssen		
August 2020 Meeting Action: Progress Report – The group held some discussion on the attached proposal. An attempt was made to contact M. Janssen for further clarification on this item proposal with no success. This item will remain on the agenda for the next meeting.		

New Business

Item Number: 20-69	NBIC Location: Part 3, S1.2.11.5	Attachment Pages 3 - 4
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: Proposal – The group held extensive discussions sharing additional information\sketches. A revised proposal (V4) was presented and discussed amongst the group. There was a motion to approve the revised proposal (V4) to SC R&A. The motion was unanimously approved		

Item Number: 20-70	NBIC Location: Part 2, S1.4.2.529	Attachment Page 5
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: Progress Report – Correction was made to the above NBIC Location reference to be NBIC Location: Part 2, S1.4.2.29. G. Ray presented a proposal opening it up for discussion amongst the group. A motion was made to send the proposal out as a review and comment letter ballot. Mr. Ray will then address the comments and revise the proposal accordingly to have ready to present at the next TG meeting. The motion was unanimously approved.		

Item Number: 20-71	NBIC Location: Part 2, S1.6	Attachment Page 6
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: Progress Report – G. Ray presented extensive background information. After extensive discussions it was suggested to revise the attached proposal to utilize wording that is already written in the ASME code. A revised proposal will be presented at the next TG meeting.		

Open Discussion:

- M. Ray shared a document “ *HGR-B9009 Is01 Washout Plugs*” and entertained extensive discussions with the group as to whether this is something that the NBIC should incorporate into our code or have referenced accordingly so as to prevent future, what could be, catastrophic incidents.
- It was suggested that the group meet in 6 months via zoom.

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

A motion was made and unanimously approved to adjourn the meeting at 4:22 pm EDT

Respectfully submitted,



Jeanne Bock
TG Locomotives Secretary

Committee Roster

✓ = Present

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
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✓ 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

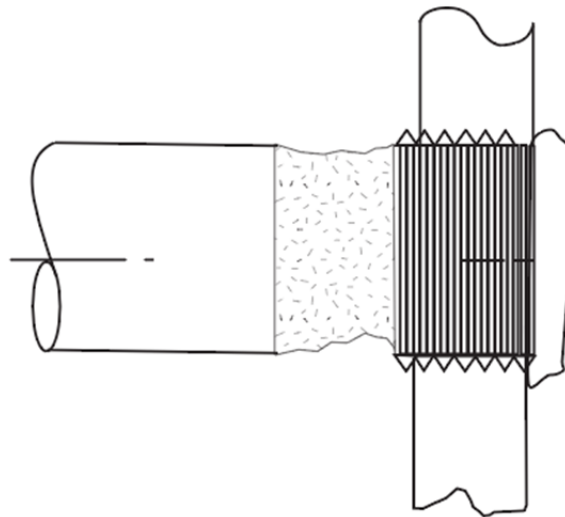
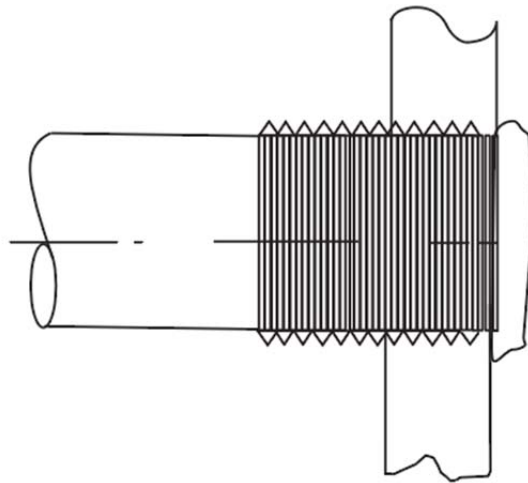
S1.4.2.9 STAYBOLTS

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



Item 20-69**Proposal V4****Task Group Locomotive Boilers****Summary**

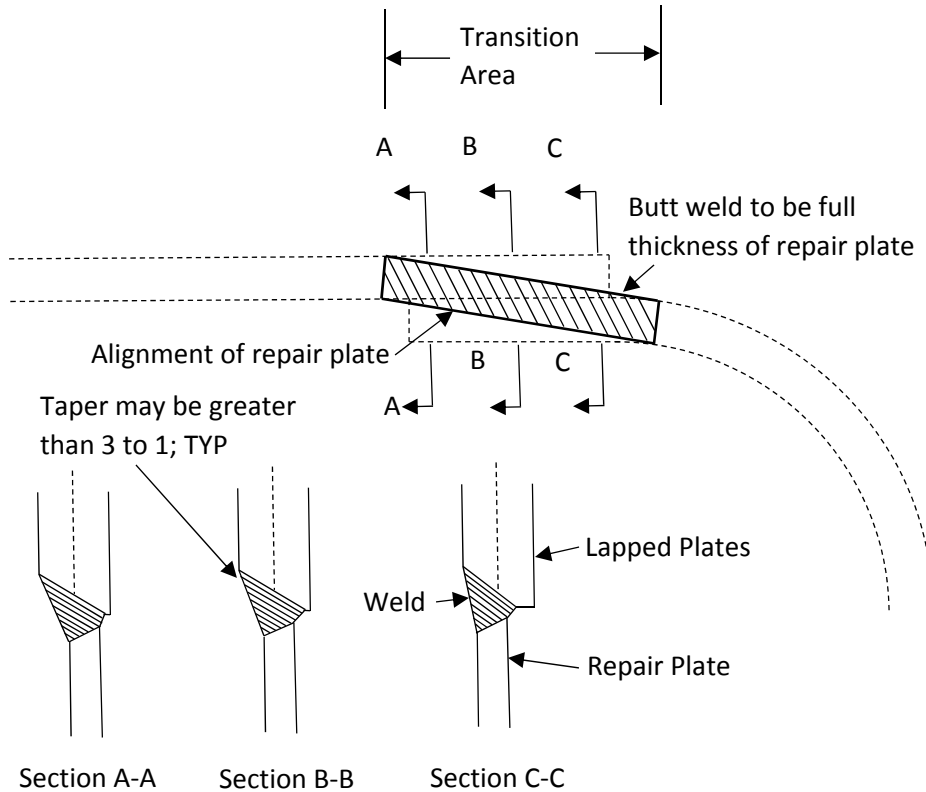
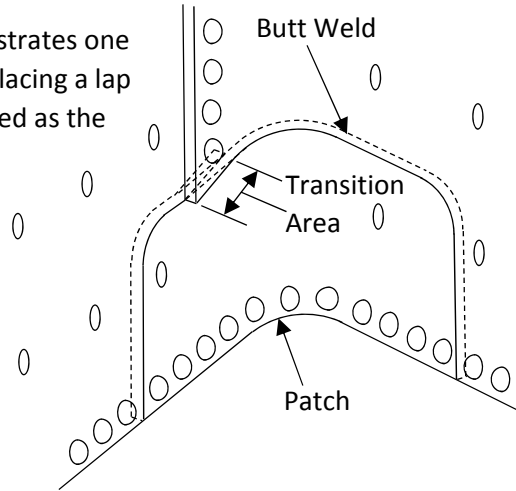
Add a sentence in S1.2.11.5 i); Replace drawing in Figure S1.2.11.5-c1 with new drawing below.

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**

This isometric view illustrates one instance of a patch replacing a lap seam and is not intended as the only location where this geometry may be used.



Item #20-70**Proposal V1****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

Item #20-71

Proposal V1

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.