



NATIONAL TRANSPORTATION SAFETY BOARD  
**Investigative Hearing**

Norfolk Southern Railway general merchandise freight train 32N  
derailment with subsequent hazardous material release and fires,  
in East Palestine, Ohio, on February 3, 2023

<b>GROUP</b>	<b>F</b>
<b>EXHIBIT</b>	
27	

Agency / Organization

**NTSB**

Title

**Summary of NTSB Pressure Relief Device Testing  
at Trinity Rail Maintenance Services, Saginaw,  
Texas, March 15-16, 2023**

**NTSB PRD Testing Summary Trn Saginaw**  
3/16/2023r1

Mark	Number	Tank Car built Date	Pressure Relief Device (PRD) Model	PRD Mfr Date	PRD Pressure Setting	Valve Removal from pressure plate	O-ring Material	AAR / DOT/ PHMSA STD Min	AAR/DOT/ PHMSA STD MAX	AAR/ DOT/ PHMSA Vapor Tight Min VTP	PRD Functioned at Derailment	PRD Functioned when tested	Pressure PRD functioned STD As received	Aluminum Debris in PRD Top guide	Aluminum in PRD Top guide -Any effect on function	PRD / stem seized in PRD guide bushing	Pressure PRD functioned STD w/ new o-rings	Midland Spring Free height Min 15.01	Spring ID/ Coating Specs	Stem out of round max .025	Stem condition	Stem / O-ring Retained cap	O-ring condition	Top Guide condition	Protective housing lid Composition	Protective housing lid Heated/ melted/ destroyed
GATX	95098	1992	Midland A-34247-VA	*01-08	247.5	Disassembled /Components	VA Viton A	240.07	254.9	198	Yes	DNT	DNT	No	No	No <i>See Note 3</i>	DNT	10.793	UR Burned/ rusted DNT Compressed	DNT	DNT	DNT	Melted	Melted/ Destroyed	B209-6061-T651 Alum	Melted/ Destroyed
OCPX	80179	1990	Midland A-34247-SS-R-VGFS	*10-90 (12-94 Mid records)	247.5	Yes Complete	VGFS Viton GFS	240.07	254.9	198	Yes	Yes <i>See Note 1</i>	STD 49.2 & 149.7	No	No	Yes <i>See Note 2</i>	DNT	13.73 (2 1/2 coils at top compressed)	Non-coated D241634255 ASRH	0.007	Crack indication-PT	Dirty soot	Burned/ Missing	Heated /tight <i>See Note 4</i>	B209-6061-T651 Alum	Melted/ Destroyed
OCPX	80235	1990	Midland A-37247-XS-ASXY-CVGFS	*01-09	247.5	Yes Complete	CVGFS Viton GFS	240.07	254.9	198	Yes	Yes	STD 122psi	Yes	No	No	No leak 150 psi	15.43	Xyland coated A34255ASXY	DNT	Dirty- No PT	Ok	Melted/ Degraded	Heated	B209-6061-T651 Alum	Melted/ Destroyed
OCPX	80370	2006	Midland A-34247-VA	*11-15	247.5	Yes Complete	VA Viton A	240.07	254.9	198	Yes	No	DNF Tested to 275 psi	No	No	Yes <i>See Note 2</i>	DNT	15.472	Non-coated DR3315342555ASRAW	0.003	Corrosion/ Crack-indication-PT	Dirty/ Corrosion	Heated/ Degraded	Seized @ guide w/ stem	A36 Steel	Heated
TILX	402025	2016	Midland A-37247-XS-ASAL-VB	*08-16	247.5	Yes Complete	VB Viton B	240.07	254.9	198	Yes	Yes	STD 33.4 psi	No	No	No	DNT	15.44	ASAL =Aluminum coated D24163255A SRAW	0.003	Pitting	Ok	Melted	Good	A36 Steel	Heated

The data recorded in this summary is taken from each EXB-015 form completed at the NTSB testing March 15 and 16, 2023

*Note 1 - Gas discharged when tested. Possibility valve leaked from burned out O-ring since the valve stem was seized in the top guide bushing.*

*Note 2 - Required the cage to be torch cut and hammered apart from the stem.*

*Note 3 - Undetermined - Top guide burned away.*

*Note 4 - Valve stem was also seized even though gas leaked from the valve during the test.*

DNF= Did Not Function  
DNT= Did Not Test  
PRD= Pressure Relief Device/ Safety Valve  
PT = Penetrant Test (dye Penetrant test)  
STD= Start To Discharge  
UR= Un-Readable  
VTP= Vapor Tight Pressure