

FRA field report CBTX 718470

Tank car: CBTX 718470

Manufacturer: Gunderson

Stub Sill design: GBW-GBW

COC#: L154003

DOT class: 111A100W1 retrofitted to 117R

Tank material: Normalized TC-128 Grade B

Nominal Shell Thickness: 9/16" or .563"

Nominal Head Thickness: 9/16" or .560"

Insulation: Fiberglass and Ceramic

Interior Coating: Carboline Plasite 3070

Coils: Exterior

Head Shield: A572 gr 50

Commodity: 1267 Petroleum Crude, Class 3. (Kerl Crude)

Derailment Site: In the area of Money MS

Inspection site: Memphis TN.

Inspection Date: 5-16-17

Inspection Team: Paul Stancil-NTSB. Matt Fox-NTSB. Manual Kotchounian-BST-TSB. Greg Vaughan-CN.

Gregory Saxton-Greenbrier. Vernon Walker-FRA

Tank welding processes: FCAW-E81T1 Girth welds SAW

Attachment welding process: FCAW E71T1

The following was not witnessed by the inspection team but reviewed at the time of the inspection on 5-16-17.

Derailment: CBTX 718470 was involved in a derailment on 04-30-17 in which it was engulfed in fire on the B-end, reportedly for approximately 45-55 minutes with flames 8-10 feet up car. Tank car did not experience loss of lading and was still in the upright position on the tracks after the extinguishment of the fire. During the fire the safety valve did not activate.

After the fire: CBTX 718470 was still coupled to another car on the B-End. There were no impacts to the tank, only signs of buckling in the area of the stub sill and cradle pads on the Bottom B-End. All attachments had sheared off on the B-end and were attached by minimal weld and parent material of the draft sill on the inboard B-Right at the toe of sill to pad and a small section of the body bolster on the B-Left at approximately 3 O'clock to their prospective pads. The coupler and draft system was shoved directly down and inboard toward the center of the tank.

Approximately 2-3 hours after the fire was extinguished the contractors applied a 0-60 psi gage to the tank and observed 1-2 psi of pressure. (Unknown if gage was calibrated or which valve it was applied to)

Scrapping: Prior to our inspection in Memphis pieces of the tank were cut up and not shipped to Memphis.

Inspection: Part of the tank and the head shield were made available for our inspection on 5-16-17. The lower half of the tank head and the number 1 ring and approximately $\frac{3}{4}$ of the bottom half of the number 2 ring. All attachments and jacket were already scrapped and not available to include the head braces and the draft sill assembly. The team was able to obtain Ultrasonic Thickness Readings from this position in the ID (Inner Diameter of the tank) with a .511 being the lowest at the sharpest radius of an inboard buckle. The rest of the readings were relative to nominal thickness. The coupon was then flipped over to give us access to the OD of the tank and the area where the attachments had sheared off. Without the presence of the attachments I would consider this inspection inconclusive due to our

inability to inspect the size of the welds that were still on the attachments. The following photo illustrates what was observed:



- Item #1 Cradle pad is split in half and half is no longer there. It was split at the Heat Affected Zone created from the application of the body bolster.
- Item #2 is the remainder of the weld that attached the head brace and draft assembly to the head brace and sill pad. It sheared away in the throat of the weld leaving only half of the weld deposit on the pad.
- Item #3 is the cradle pad to draft sill weld and illustrates that it was not welded to the tank by design and therefore did not tear the tank.
- Item #4 is the draft sill pad sheared away in the throat of the pad to tank longitudinal weld possibly absorbing the energy of the impact.

Respectfully submitted
Vernon L. Walker
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