

**FINAL REPORT OF INVESTIGATION A&I E18212**

June 2, 2018

Serious Injury

*Adopted by the Metrorail Safety Commission at its meeting on June 11, 2019.*

Washington Metrorail Safety Commission  
777 North Capitol Street, NE, Suite 402  
Washington, DC 20002



**FINAL REPORT OF INVESTIGATION A&I E18212****SMS # 20180603#71505**

<b>Date of Event:</b>	6/2/2018
<b>Type of Event:</b>	Serious Injury
<b>Incident Time:</b>	23:35 hrs.
<b>Location:</b>	Between Landover and New Carrollton at CM D2 567+00, Track 2
<b>Time and How received by SAFE:</b>	23:55 hrs., ROCC
<b>Safety Officer Response:</b>	None
<b>Time of Safety Officer Arrival:</b>	N/A
<b>Time of Safety Officer Departure:</b>	N/A
<b>Train Consist:</b>	N/A
<b>Injuries:</b>	2 <sup>nd</sup> Degree Burn to Right Hand
<b>Damage:</b>	Yes, Broken torch
<b>Emergency Responders:</b>	TRST Personnel

**Executive Summary**

On June 2, 2018 at approximately 23:35 hrs., a Track and Structures (TRST) employee sustained an injury while performing thermite welding. The employee was welding at Chain Marker (CM) D2 567+00 when the torch, used to heat the thermite mold, broke and subsequently causing 2<sup>nd</sup> degree burns to his right hand. The employee was transported for medical evaluation with a non-life-threatening injury. There were no other damages except to the torch which broke during use. Following treatment the employee was post incident tested.

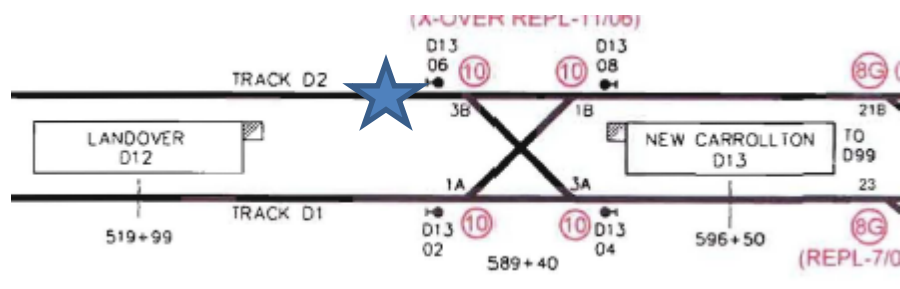
**Notification**

<b>Title</b>	<b>Time</b>	<b>Comment:</b>
<b>FTA</b>	23:55 hrs.	Email sent
<b>TOC</b>	23:55 hrs.	Email sent
<b>NTSB</b>		

## Incident Site

Between Landover and New Carrollton at CM D2 567+00, Track 2

## Field Sketch/Schematics



## Investigation

On 06/02/2018 at approximately 23:35 hrs., a TRST employee received 2<sup>nd</sup> degree burns to his right hand. The employee was performing a thermite weld which joins two sections of track together. The employee was heating the mold using an oxygen/propane torch (See Photo 2). It was reported to SAFE during injured employee's interview that he was wearing cotton gloves and not welding gloves when the 2<sup>nd</sup> degree burn occurred. The employee was transported for medical treatment and doctors determined the employee received a second degree burn to his right hand between his thumb and index finger. (See Photo 1) The employee was treated and discharged the same day.

## Weather

At the time of the incident, the temperature was approximately 71 degrees Fahrenheit and clear. SAFE has determined that weather was not a factor in this incident. (Source: National Oceanic Atmospheric Administration (NOAA) for Landover, MD).

## Findings

- Employee received 2<sup>nd</sup> degree burn on his right hand
- Employee was wearing a brown cotton glove not welding hand gloves
- Employee was treated and discharged from Doctor's Community Hospital
- Employee was heating the mold during a thermite weld process
- The welding torch broke while in use

## Immediate Mitigation to Prevent Re-Occurrence

- The torch was removed from service
- Employee was treated for 2<sup>nd</sup> degree burns
- Employee was removed from service and post incident testing was performed.

## Conclusion

Based on the salient facts, SAFE concludes that this incident was a results of defective tools and improper use of Personal Protective Equipment (PPE). The welding torch failed while in use causing a kick back of heat that subsequently burned the employee. Furthermore, the employee failed to use the proper welding glove associated with thermite welding. As a result, TRST has released a Lessons Learned (20181011-03-Required Welding Gloves) for this incident, therefore SAFE has no further actions and recommends E18212 for closure.

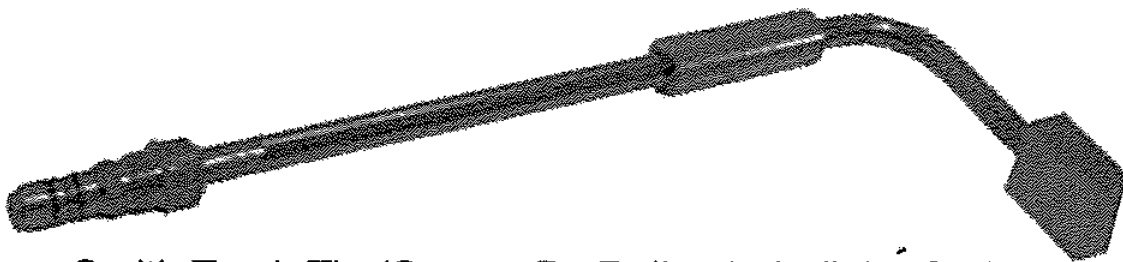
## Corrective Action

1. TRST shall take the appropriate action deemed necessary to support prevention of repeated improper actions:
  - **TRST will provide a Lessons Learned to the department on the importance of using PPE while welding (Completed 10/11/2018)**

**Photos**



Photo 1 – Employee's Right Hand



Smith Torch Tip (Specs. By Railtech, built by Smith)  
2541-0000SM


Photo 2 – Torch similar to one used to heat mold



Photo 3 – Broken torch which caused injury

## Attachments

Office of Track and Structures



# Lessons Learned

October 11, 2018


### LL # 20181011-03 – Required Welding Gloves

**Incident Summary**

Approximately 11:35 p.m., Saturday, June 2, 2018, between Landover Station and New Carrollton Station at Chain Marker (CM) D2 567+00, a TRST employee sustained an injury while performing thermite welding to join together two sections of rail. While heating the mold using an oxygen/propane torch, the torch broke and subsequently caused 2nd degree burns to the employee's right hand between his thumb and index finger.

The employee was immediately transported to the hospital for medical evaluation with non-life-threatening injuries. During the employee's post-incident interview, it was determined that he was wearing cotton gloves, instead of the required welding gloves when the 2nd degree burn occurred. This information was reported to SAFE.

**NOTE:** This incident has been investigated by SAFE.



**Exothermic Heat Resistant Welding Hand Gloves**

**Preliminary Findings**

The Supervisor or Leadman shall conduct an onsite safety briefing to address issues specific to thermite welding. Also, during the briefing the Supervisor or Leadman shall discuss and make all personnel aware of the proper PPE that is required for thermite welding, such as:

- Approved Safety Vest or Shirt
- Leather Gloves
- Exothermic Heat Resistant Welding Gloves
- Safety Glasses or Goggles
- Hard Hat
- Hearing Protection
- Respiratory Protection
- Knee Pads

**Lessons Learned**

To prevent serious burns to the hands, it is imperative that proper Exothermic Heat Resistant Welding Gloves are worn while handling a torch during any thermite welding job.

LL # 201801011-03 October 11, 2018

### Attachment 1 – Lessons Learned Requiring Welding Gloves