Transit Advisory Committee for Safety (TRACS)

Rail and Rail Transit Suicide Prevention

September 9, 2019

Scott Gabree, PhD
RAIL SAFETY IN THE US

- Over the past 30 years crossing fatalities have dropped significantly
- Trespass and suicide have not experienced the same safety improvement
SUICIDE IN THE US - RAIL

- Data only available since June 2011
- More variable, year-to-year
- Suicide is approximately 30% of all rail fatalities
- Mix of stations, crossings, and open track
SUICIDE IN THE US - TRANSIT

• Four highest years have been since 2013

• Suicide is between 29% and 40% of all transit-related fatalities

• But, suicide is between 49% and 66% of rail transit-related fatalities

• Majority occur in stations
In 2017, 47,173 Americans died by suicide.

Rates are increasing annually.

In 2017, an estimated 1.4M suicide attempts.

Annually, 300 - 400 rail and transit suicide deaths.

Rail and transit suicide represent less than 1% of US suicides.

Still, impacts on the rail industry are tremendous.

www.afsp.org/about-suicide/suicide-statistics/
SUICIDE IN THE US (YOUTH)

• Youth suicide, ages 10-24, is growing most rapidly in the US (and second leading cause of death)

• Nationwide survey of high school students:
  – 16% seriously considered suicide in past year
  – 13% created a plan to take their life in past year
  – 8% attempted to take their life in the past year

• 157,000 10 to 24-year olds treated in Emergency Rooms in the US for self-inflicted injuries each year

https://www.cdc.gov/healthcommunication/toolstemplates/entertainmented/tips/SuicideYouth.html
WHY RAIL?

• Death believed to be certain
• Death believed to be quick and painless
• Aware of prior incidents from media and announcements
• Accessible and intervention is unlikely
• The 3 E’s approach has traditionally focused on trespass and crossing safety

• How these strategies may be used to address rail suicide, specifically, is less well understood
CURRENT SUICIDE PREVENTION PROGRAM (FRA)

- Volpe is currently funded by the FRA Office of Research, Development, & Technology (RD&T) to study rail suicide prevention.
- Details of the program are available here:
  www.volpe.dot.gov/rail-suicide-prevention
The FRA program has six key program areas:

- Suicide Countermeasure Pilot Testing
- Media Reporting of Rail Incidents
- Data Quality Improvement
  - Determination of Intent
  - Prevalence/Demographic Assessments
  - GIS Mapping
- Global Railway Alliance for Suicide Prevention
COUNTERMEASURE PILOT TESTING

• Direct collaboration with US rail carriers to implement and evaluate rail suicide prevention countermeasures

• Currently, little empirical evidence is available about rail suicide prevention
  – Most rail suicide mitigations are done reactively, without time for a proper evaluation

• Countermeasures may involve the direct implementation of engineering or other mitigations, or involve coordination with external groups
COUNTERMEASURE PILOT TESTING

• What are rail carriers doing, currently?
  – Awareness signage in stations
  – Identifying behaviors indicative of suicidal risk
    • Staff training
    • CCTV
    • Passenger responsibility
  – Community collaboration
  – Station improvements
  – Fencing
  – Lighting
  – Improve media reporting
IMPACT OF MEDIA ON SUICIDE

• Established body of literature about the impacts of the media on suicide
  – The Werther Effect is the term used to describe a rise in suicide rate following a highly publicized suicide

• Effects have been found specifically for rail suicides
  – Robert Enke – Germany
  – Viennese Subway System – Austria
  – Student Clusters – Palo Alto, CA

In addition to the short-term increase in railway suicides, Pereg et al. (2013) identified a long-term effect: 19% increase in railway suicides in the two years after the suicide by Robert Enke.
IMPACT OF MEDIA ON SUICIDE

• Reporting guidelines can work

• Responsible reporting guidelines are widely available (a few, of many, below):
  – ReportingOnSuicide.org
  – World Health Organization
  – Mindframe
  – SAVE
DATA-DRIVEN EFFORTS

• Determination of Intent
  – How reliable are suicide vs. trespass determinations?
  – TIDE criteria

• Prevalence and Demographic Analyses
  – What can we learn from studying trends in the data?
  – Are there any common characteristics with respect to:
    • individual involved
    • location
    • timing

• GIS Mapping of Incidents
  – Can mapping be used to allocate resources more effectively?
GRASP

- The **Global Railway Alliance for Suicide Prevention**
  - International work group of experts in rail suicide prevention

- Partners from ten countries

- Learning best practices from experts who have been attempting to address this issue for many years
### GRASP

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>2017 Rail Suicide Incidents</th>
<th>2017 Train Person Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>5.5M</td>
<td>56</td>
<td>6</td>
</tr>
<tr>
<td>France</td>
<td>65.0M</td>
<td>297</td>
<td>87</td>
</tr>
<tr>
<td>Germany</td>
<td>83.1M</td>
<td>771</td>
<td>198</td>
</tr>
<tr>
<td>Ireland</td>
<td>4.8M</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>17.0M</td>
<td>215</td>
<td>7</td>
</tr>
<tr>
<td>Norway</td>
<td>5.3M</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>10.0M</td>
<td>50</td>
<td>11</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>67.1M</td>
<td>245</td>
<td>39</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td><strong>327.0M</strong></td>
<td><strong>313</strong></td>
<td><strong>1,018</strong></td>
</tr>
</tbody>
</table>

- US has fewer rail suicide incidents, per capita, than most European countries.
- US has far MORE train person collisions than most European countries.
- Much to be learned from European (and other) countries who have prioritized rail suicide prevention strategies.

Data from: [FRA Safety Data Website](https://www.fra.dot.gov) and [ERAIL Website](https://www.eralin.com)
INTERNATIONAL EFFORTS TO ADDRESS RAIL SUICIDE

• REduction of Suicides and Trespasses on RAILway property

• European Union effort to implement, evaluate, and document countermeasures to mitigate rail trespass and suicide
RESTRAIL: TOOLBOX

• Two action plans:
  1. Prevention of incidents
  2. Mitigation of consequences

• Explore Measures by Type:
  1. Organization & Procedural
  2. Physical & Technological
  3. Public Awareness & Educational

• Explore Measures by Study Results:
  1. No studies
  2. Yes (general)
  3. Yes (RESTRAIL)

• Explore Measures by Target Problem:
  1. Suicide
  2. Trespass
  3. Suicide & Trespass
  4. Mitigation

• Explore Measures by Effect Mechanism:
  1. Improve practice & process
  2. Influence decision
  3. Deter access
  4. Influence behavior
  5. Reduce consequences
TOOLBOX EXAMPLE: FENCING

- Toolbox > Physical & Technological: **Fencing**
  - Between tracks
  - Mid-Platform
  - Platform ends
  - Platform edge doors
  - Anti-trespass grids
  - Symbolic fencing
  - Hotspot fencing
  - Nets at bridges
CAMERAS AND SURVEILLANCE

- Toolbox > Physical & Technological: **Surveillance**
  - Intelligent CCTV with sound warnings
  - Intelligent CCTV with live response
  - Detection systems with sound warnings
  - Forward facing CCTV
TOOLBOX EXAMPLE: TRAINING/EDUCATION

• Toolbox: Training/Education
  – Educating the public
    • Awareness of services/encourage help-seeking
    • Education at schools (dedicated time & incorporation into existing disciplines)
    • Educate adults living/working near rail lines
  – Training to Identify Risk
    • Training to identify suicidal risk and intervene
    • Local law enforcement
    • Dedicated volunteer patrols
ACTIVE US EFFORTS

- Suicide Intervention Training
  - Identify individuals at risk for suicide and intervene
- Surveillance
  - Smart cameras with live response
  - Volunteer patrols
- Increasing awareness of help services
  - Posters at stations
  - Booths at stations or events
- Fencing
  - ROW fencing (in hotspots)
  - Platform fencing (mid and end)
OTHER: CARE FOR THOSE WHO EXPERIENCE EVENT

• Adequate care for crews who experience potentially traumatic events
  – FRA Rule effective June 23, 2014

• What about bystanders who experience these incidents or first responders who are experience the result of the collision?
WHERE DO WE GO FROM HERE?

• Study the impact of various strategies (empirical evidence)

• Improve quality of data collected
  – Collect data that can inform action
  – Improve consistency of data collected

• Identify how to establish effective partnerships with experts in suicide prevention
THANK YOU TO OUR SPONSOR AND TEAM

U.S. Department of Transportation
Federal Railroad Administration

This work is sponsored by
Starr Kidda, PhD of the FRA
Office of Research, Development, & Technology

Thank you to the rest of our team at Volpe:
Stephanie Chase, PhD
Danielle Hiltunen
THANK YOU!

Thoughts? Questions? Ideas?

Scott H. Gabree, PhD
Volpe National Transportation Systems Center
Surface Transportation Human Factors Division
Scott.Gabree@dot.gov
617-494-2530
www.volpe.dot.gov/rail-suicide-prevention