

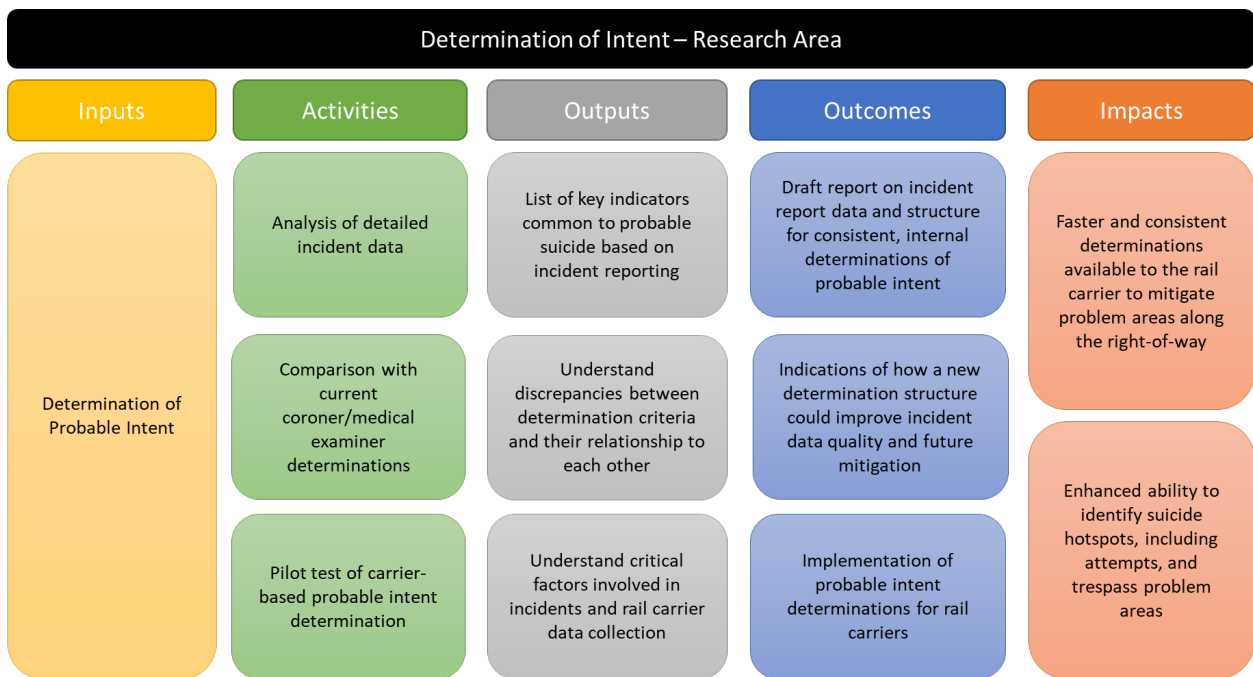


U.S. Department of
Transportation

**Federal Railroad
Administration**

Consistent Trespasser Intent Determination Criteria Pilot Project

Office of Research,
Development
and Technology
Washington, DC 20590



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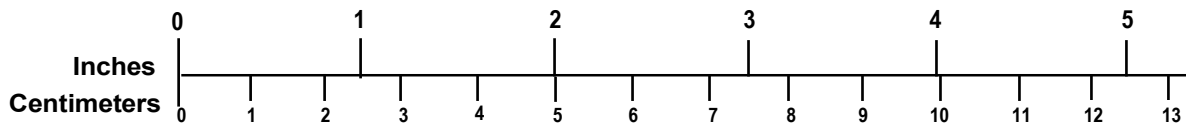
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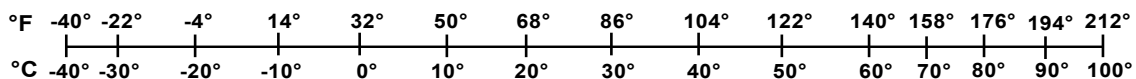
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<p>LENGTH (APPROXIMATE)</p> <p>1 inch (in) = 2.5 centimeters (cm)</p> <p>1 foot (ft) = 30 centimeters (cm)</p> <p>1 yard (yd) = 0.9 meter (m)</p> <p>1 mile (mi) = 1.6 kilometers (km)</p>	<p>LENGTH (APPROXIMATE)</p> <p>1 millimeter (mm) = 0.04 inch (in)</p> <p>1 centimeter (cm) = 0.4 inch (in)</p> <p>1 meter (m) = 3.3 feet (ft)</p> <p>1 meter (m) = 1.1 yards (yd)</p> <p>1 kilometer (km) = 0.6 mile (mi)</p>
<p>AREA (APPROXIMATE)</p> <p>1 square inch (sq in, in²) = 6.5 square centimeters (cm²)</p> <p>1 square foot (sq ft, ft²) = 0.09 square meter (m²)</p> <p>1 square yard (sq yd, yd²) = 0.8 square meter (m²)</p> <p>1 square mile (sq mi, mi²) = 2.6 square kilometers (km²)</p> <p>1 acre = 0.4 hectare (he) = 4,000 square meters (m²)</p>	<p>AREA (APPROXIMATE)</p> <p>1 square centimeter (cm²) = 0.16 square inch (sq in, in²)</p> <p>1 square meter (m²) = 1.2 square yards (sq yd, yd²)</p> <p>1 square kilometer (km²) = 0.4 square mile (sq mi, mi²)</p> <p>10,000 square meters (m²) = 1 hectare (ha) = 2.5 acres</p>
<p>MASS - WEIGHT (APPROXIMATE)</p> <p>1 ounce (oz) = 28 grams (gm)</p> <p>1 pound (lb) = 0.45 kilogram (kg)</p> <p>1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)</p>	<p>MASS - WEIGHT (APPROXIMATE)</p> <p>1 gram (gm) = 0.036 ounce (oz)</p> <p>1 kilogram (kg) = 2.2 pounds (lb)</p> <p>1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons</p>
<p>VOLUME (APPROXIMATE)</p> <p>1 teaspoon (tsp) = 5 milliliters (ml)</p> <p>1 tablespoon (tbsp) = 15 milliliters (ml)</p> <p>1 fluid ounce (fl oz) = 30 milliliters (ml)</p> <p>1 cup (c) = 0.24 liter (l)</p> <p>1 pint (pt) = 0.47 liter (l)</p> <p>1 quart (qt) = 0.96 liter (l)</p> <p>1 gallon (gal) = 3.8 liters (l)</p> <p>1 cubic foot (cu ft, ft³) = 0.03 cubic meter (m³)</p> <p>1 cubic yard (cu yd, yd³) = 0.76 cubic meter (m³)</p>	<p>VOLUME (APPROXIMATE)</p> <p>1 milliliter (ml) = 0.03 fluid ounce (fl oz)</p> <p>1 liter (l) = 2.1 pints (pt)</p> <p>1 liter (l) = 1.06 quarts (qt)</p> <p>1 liter (l) = 0.26 gallon (gal)</p> <p>1 cubic meter (m³) = 36 cubic feet (cu ft, ft³)</p> <p>1 cubic meter (m³) = 1.3 cubic yards (cu yd, yd³)</p>
<p>TEMPERATURE (EXACT)</p> <p>$[(x-32)(5/9)]\text{ }^{\circ}\text{F} = y\text{ }^{\circ}\text{C}$</p>	<p>TEMPERATURE (EXACT)</p> <p>$[(9/5)y + 32]\text{ }^{\circ}\text{C} = x\text{ }^{\circ}\text{F}$</p>

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Executive Summary

This report describes a pilot project evaluating the potential for developing standardized criteria for railroads to determine the probable intent (i.e., suicide or accident) of individuals involved in trespasser strikes on railroad right-of-way in the US, in support of the Federal Railroad Administration (FRA). In 2014, the John A. Volpe National Transportation Systems Center (Volpe) developed and began evaluating a modified version of the “Ovenstone” criteria, referred to as the Trespasser Intent Determination and Evaluation (TIDE) criteria, which used an approach similar to the criteria implemented by the Railway Safety and Standards Board (RSSB) (RSSB, 2015) and European Railway Agency (ERA) (ERA, 2013).

The TIDE criteria can be used to make consistent secondary judgments about the intent (i.e., suicide or accident) of an individual involved in a trespasser strike regardless of whether the outcome is a fatality or injury. Volpe’s modification was necessary in order to account for the availability of past and current mental health information due to regulations about the privacy of health information in the US. The TIDE criteria are intended to be used internally at railroads, and will not supersede official manner of death determinations made by a coroner or medical examiner.

The TIDE criteria consider the following types of information:

Direct Factors: This is the evidence that, on its own, can be used to determine if a suicide is probable.

Modifying Behaviors: This is evidence of behaviors, including eye contact and the direction the individual was facing, that can be used with other evidence to suspect probable suicidal intent. This information may be helpful in modifying determinations that are not already conclusive based on the direct evidence section.

Inconclusive Factors: When the information—or lack of information—about a particular incident does not provide evidence in accordance with the factors above, or there is an indication of drug or alcohol use without direct factors.

From the factors described above, one of three determinations of intent can be made:

Probable Suicide: The individual’s actions were intentional—they intended to harm themselves.

Probable Accident: The individual’s actions were unintentional—they did not intend to harm themselves.

Inconclusive: Insufficient information to determine probable intent of the individual.

To evaluate the TIDE criteria, the following steps should occur:

Step 1: Resource Availability. Information is collected by the railroads and it is used to create determination criteria for the individual’s intent, which will be evaluated for both reliability and validity. Volpe is currently partnered with two railroads, each in a different geographical region of the US.

Step 2: Development and Refinement. In this step, preliminary categories were created, the information collected from railroads was coded using TIDE, and the coding process was documented. A sample of those reports was selected to assess inter-rater reliability. This

process generated several iterations of the criteria. After any disagreements over intent determinations were resolved, researchers reported the process and findings to each individual railroad for stakeholder feedback to further refine the criteria. Ongoing data collection is also occurring for both railroads.

Step 3: Greater Stakeholder Involvement. The team is currently working to increase stakeholder involvement, and facilitate partnerships with additional railroads to better evaluate the TIDE criteria at different locations and types of railroads across the US.

Step 4: Evaluation – Usefulness of the TIDE Criteria. Finally, the last evaluation step is a long-term effort that will focus on mitigations that were proposed and implemented using knowledge gained by the TIDE criteria. This step is expected to include data analysis based on the incident reports and determinations made using the TIDE criteria. This will also provide an opportunity to further refine the criteria and implement a guidance and recommendation document for the criteria that can be made easily available to all railroads who wish to use this tool.

1. Introduction

The Federal Railroad Administration (FRA) is interested in learning more about the trespasser strikes on the US rail system that occur due to suicide attempts. Over the past several years, FRA has provided funding to the John A. Volpe National Transportation Systems Center (Volpe) to investigate this topic. While Volpe continues to advance the state of knowledge surrounding rail suicide and suicide attempts in the US, there is a need to better understand the factors involved in making determinations that explain the intent of these individuals, and assist railroads in selecting and evaluating potential mitigation strategies to reduce the number of suicides on the rail system.

This document discusses a pilot project that evaluates the potential for developing standardized criteria for railroads to internally determine the probable intent (i.e., suicide or accident) of individuals involved in trespasser strikes on railroad right-of-way in the US.

1.1 Background

Rail suicide data collection is mandated by the Code of Federal Regulations (CFR) and the data is currently collected by FRA. This topic is also covered by FRA's Guide for Preparing Accident/Incident Reports (FRA, 2011). When a trespasser strike results in a fatality, a coroner or medical examiner conducts an investigation to determine the official manner of death (i.e., suicide, accident, undetermined, etc.) When a trespasser strike results in an injury, there is no investigation by a medical examiner or coroner. Therefore, a determination about a suicide attempt (injury), is only documented if relevant information is available. This may largely depend on the individual's willingness to disclose this information to authorities or rail staff present at the scene.

Determinations about intent may be inconsistent depending on whether a fatality or injury is ruled a suicide or accident, and the number of suicides and suicide attempts may be underreported. Past research examining international suicide statistics supports the potential for underreporting (Reynders, Scheerder, and Van Audenhove, 2010; Tøllefsen, Hem, and Ekeberg, 2012). This inconsistency in determinations could negatively affect efforts to identify trends that exist in rail suicide and trespass data and to evaluate the true impact of mitigation strategies.

Given the challenges associated with consistently reporting railroad suicide incidents, Volpe explored a secondary method for determining probable intent of the individual (i.e., suicide or accident) for internal use within railroads. This approach is not unprecedented. In 1994, Symonds re-categorized rail fatalities and injuries using a checklist of eight criteria to suspect probable suicides. The Railway Safety and Standards Board (RSSB) in the United Kingdom (UK) has taken a similar approach, allowing railroads to make preliminary determinations about an individual's intent and suspect suicide using the "Ovenstone" criteria, which has been tailored for railways (RSSB, 2015). The European Railway Agency (ERA) also allows member States to use an adapted set of "Ovenstone" criteria to classify incidents and suspect suicide where the official manner of death is undetermined (ERA, 2013). The "Ovenstone" criteria identifies common factors involved in suicides and suicide attempts based on mental health diagnoses, previous indication of intent, patterns of suicidal behavior, and reactions to stressful situations (Ovenstone, 1973). Modified versions of this criteria may also account for the individual's actions and behaviors preceding and at the time of the incident.

Using an additional method for determining intent will not supersede the official manner of death; however, this method for secondary determination may give railroads a streamlined mechanism in understanding suicide and trespass incidents that are occurring on their tracks. A secondary determination has three advantages:

- The determination of intent can be made quickly after an incident occurs.
- The determination is standardized for each incident and provides consistency and reliability in the determinations made within and between railroads.
- A probable determination of intent can be made for incidents resulting in a fatality and injury. This can provide railroads with a more accurate and comprehensive representation of the incidents occurring on their tracks and help to select and evaluate mitigation strategies.

Criteria that are based on internal determinations have the potential to give railroads a timely and comprehensive understanding of possible trends of trespasser strikes within their rail system. This can be especially important when multiple incidents occur in a short duration (e.g., a copycat or hotspot situation). Although Volpe partnered with two railroads for this effort, the potential to partner with additional railroads from a greater breadth of regions within the US is being explored. Collecting additional information will lead to a more comprehensive understanding of primary factors that can be considered within each incident when mitigation efforts are proposed; therefore, the impact of these efforts to stakeholders is projected to be greater.

1.2 Objectives

This pilot project evaluated the potential for developing standardized criteria for railroads to determine the probable intent (i.e., suicide or accident) of individuals involved in trespasser strikes on railroad right-of-way in the US. The criteria should be used internally to help railroads better understand suicide and trespass incidents that occur on the right-of-way, and support the selection and evaluation of mitigation strategies.

[Figure 1](#) is a visual representation of the logic model for the Determination of Intent research project, which provides a better understanding of the project's goals and presumed impact to stakeholders and the community's safety. For this specific project, some of the activities and outputs share the same outcome and in a few cases the outcomes share the same potential impact (see [Figure 1](#)). It is believed that the outcomes of this project will affect the level of safety in railroad operations—in terms of trespasser fatalities—and it will also provide better quality data for future risk assessments and migration efforts along the railroad right-of-way.

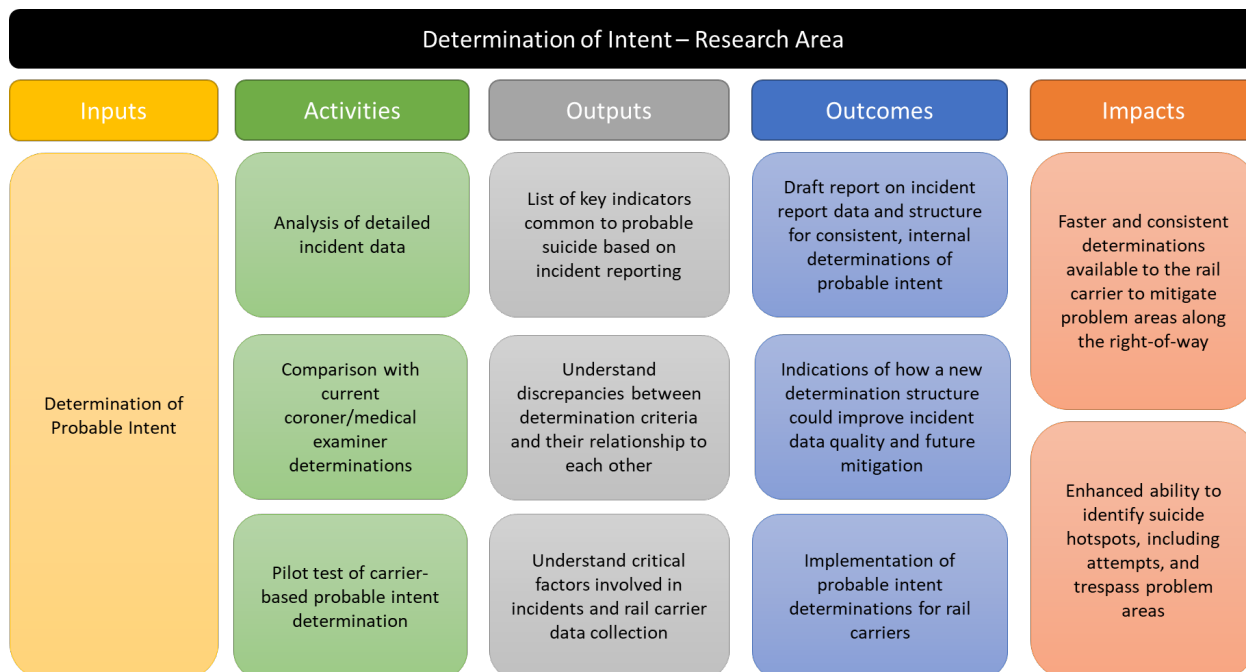


Figure 1: Logic Model for Determination of Intent Project

1.3 Overall Approach

The approach of this evaluation is to examine the potential for a secondary determination about the intent (i.e., suicidal or accidental) of individuals involved in fatal and non-fatal trespasser strikes on US right-of-way and identify lessons learned. The criteria are based on an approach that has been used in countries outside of the United States (i.e., Australia, Sweden, and the UK), and modified to account for differences in the availability of certain types of information. Researchers compared the official manner of death determinations made by a coroner or medical examiner with supplemental intent determinations using the TIDE criteria. Researchers also explored the utility of TIDE criteria to understand the suicide and trespass incidents, improve data collection, and select and evaluate mitigation strategies.

1.4 Scope

This evaluation considered a total of 9 years of incident data from two railroads in different regions of the US.

1.5 Organization of the Report

This report is separated into the following three sections:

[Section 1](#): Introduces the background and objectives of the project, overall approach, and scope.

[Section 2](#): Describes the development and evaluation process of the pilot project.

[Section 3](#): Provides concluding information regarding lessons learned and next steps.

2. Consistent Trespasser Intent Criteria

2.1 Development of the Criteria

To create the criteria, Volpe partnered with two railroad carriers in different geographical regions of the US. Both railroads provided access to their trespasser strike incident report data—that result in injury or death—which can include several documents such as:

- Police reports
- Death certificates (as applicable)
- Witness statements
- Railroad Equipment Accident/Incident Report (FRA F 6180.54)
- FRA Injury and Illness Summary (FRA F 6180.55)
- Highway-Rail Grade Crossing Accident/Incident Report (FRA F 6180.57)

To better fit the availability of information in the US, Volpe created a modified version of the death determination “Ovenstone” criteria currently used by the RSSB in the UK. The UK and US have different health privacy laws, which means that information about an individual’s mental health history, including previous suicide attempts, is most likely not available in the US. Therefore, Volpe created multiple iterations of the “Ovenstone” criteria that do not rely on an individual’s past mental health history. Additionally, the determination criteria were broadened to include the determinations of incidents that led to an injury as well as death.

Railroad employees stated that suicide attempts (i.e., non-fatal) can also be traumatic to railroad employees and should be included in any impact assessments. Additionally, many incidents each year result in injuries and a portion of those incidents may show that there was intent to self-harm. Non-fatal attempts were considered an important inclusion for railroads, so specific locations can be identified where incidents involving intentional acts to harm oneself occur regardless of outcome (i.e., injury or death).

Volpe’s TIDE criteria included the following three types of factors based on the information provided on each incident (see [Appendix A](#) for the complete criteria):

Direct Factors: Information that, on its own, can determine if a suicide is probable. For example, suicide notes, statements of intent, and specific wording in an incident report alone can be used as sufficient criteria to suspect probable suicidal intent.

Modifying Behaviors: Information about behaviors, including eye contact and the direction the individual was facing, that can be used with other evidence to suspect probable suicidal intent or a probable accident. Other examples include whether the individual was seen at the location prior to the incident, was distracted wearing headphones, if visual or aural warnings were present, depression or withdrawal noted by others, or marked emotional response to recent events.

Inconclusive Factors: When the information—or lack of information—about a particular incident is insufficient to make a determination, an inconclusive determination is given. This category also includes evidence of alcohol or drugs at the time of the incident without any

direct evidence that would allow a determination to be made (such as a suicide note). Otherwise the individual's intent cannot be determined due to the drug(s) in their system.

From these categories of information, one of three determinations of intent (regardless of physical outcome—fatal or injury) can be made:

Probable Suicide: The individual's actions were likely intentional—they intended to harm themselves.

Probable Accident: The individual's actions were likely unintentional—they did not intend to harm themselves.

Inconclusive: Insufficient information to determine probable intent of the individual.

2.2 Evaluation of the Criteria

Four steps were taken to evaluate how the TIDE criteria would assist the railroads select and evaluate suicide mitigation strategies on the right-of-way.

Step 1: Resource Availability. The first step was to understand what information is collected by the railroads and create criteria for identifying the probable intent of the individual that could be evaluated for both reliability and validity. The team looked through the data provided and placed the information into high level categories such as incident location, demographics of the decedent/individual, and environmental factors. From these categories, the team created subcategories and tracked how often each subcategory was used, as well as how detailed each subcategory became. This process helped formulate the basis for understanding factors involved in the trespasser strike incident that could possibly be used to differentiate an individual's intent; or a suicide from a trespass (accidental) incident.

Step 2: Development and Refinement. After creating the categories, two individual coders independently examined 1 year of trespasser strike incident report data from each railroad. These coders recorded essential information about the incident, and then they were asked to decide if the incident was a probable accident, a probable suicide or there was inconclusive evidence. Finally, the coders recorded what categories of information they used and its order of importance in their determination.

After all incident determinations were completed by each coder, a third party talked to each coder and recorded the process that they used to determine intent. Consistencies and disagreements between both coders' processes were documented so the team could better understand which information carried more weight when a determination was made. When the two coders did not make the same determination, we also brought in a third coder to see if a majority determination could be found. An additional coder completed a random selection of 20 percent of incidents for inter-rater reliability purposes, and the third coder's process was documented as well.

The initial assessment process became the basis for the preliminary TIDE criteria, which researchers used to make secondary intent determinations about past trespasser strikes. As researchers analyzed the report data, the TIDE criteria was refined once more to its current form and all incident data received was recorded. After any disagreements with determinations were discussed, researchers reported the process and findings to each individual railroad for stakeholder feedback. Although both railroads have expressed positive responses about these efforts, detailed feedback was not received to date.

For both railroads, ongoing data collection is occurring. As the number of incidents available to us increases, the ability to generalize from the current findings widens. Volpe will continue the process of documenting and updating the TIDE criteria as deemed necessary.

To date, researchers identified two main outcomes when the official determination is compared to the TIDE criteria. First, a higher number of probable suicide attempts (injuries) resulted when using TIDE. Second, TIDE resulted in fewer incidents that were officially determined to be fatal accidents, and a higher number of inconclusive determinations. This is due to the lack of information available in the incident reports. This finding highlights the need for more detailed, high quality data that is consistently collected for both fatalities and injuries.

Step 3: Greater Stakeholder Involvement. In this step, the team will pursue greater stakeholder involvement by facilitating partnerships with additional railroads to better evaluate the TIDE criteria at different locations and types of railroads across the US.

Step 4: Evaluation – Usefulness of the TIDE Criteria. This step will be a long-term evaluation effort that is planned over a period of time, as mitigation efforts are being proposed and implemented with the knowledge gained by the TIDE criteria. The goal of this extended evaluation is to determine whether consistent trespasser intent criteria could be successfully implemented by the railroads themselves. It will also determine whether the TIDE criteria allowed railroads to better understand trespass and suicide on the right-of way, helped them to select and evaluate mitigations, as well as identify any barriers that may arise and propose solutions. This evaluation will examine the number of trespasser strikes that are mitigated in a specific location determined by these criteria and look at any additional uses the railroad has found for this information. Step 4 will also give the team an opportunity to refine the criteria and implement a guidance document for using the criteria, which would be made available to all interested railroads. This tool could also be provided to railroads using Volpe’s webpage, [Rail Suicide Prevention Resource Page](#), developed for the suicide and trespass prevention work that is sponsored by FRA and conducted at Volpe.

3. Conclusion

This project evaluated the potential for developing standardized criteria that allow railroads to determine the probable intent (i.e., suicide or accident) of individuals involved in trespasser strikes on railroad right-of-way in the US. Volpe took an approach similar to the RSSB and ERA and developed a modified version of the “Ovenstone” criteria, named the TIDE criteria, that allows railroads to make consistent judgments about the intent (i.e., suicide or accident) of an individual involved in a trespasser strike regardless of whether the outcome is a fatality or injury. The criteria would be used internally to help railroads better understand suicide and trespass incidents that occur on the right-of-way and assist them in selecting and evaluating mitigation strategies. TIDE is not intended to supersede the official manner of death determined by a coroner or medical examiner.

The TIDE criteria include the following types of information:

Direct Factors: Information that, on its own, can be used to determine if suicidal intent is probable.

Modifying Behaviors: Recorded behaviors that can be used with other evidence to suspect probable suicidal intent.

Inconclusive Factors: When the information—or lack of information—about a particular incident does not provide evidence in accordance with the categories above.

From the four categories described above, one of three determinations of intent can be made:

Probable Suicide: The individual’s actions were intentional—they intended to harm themselves.

Probable Accident: The individual’s actions were unintentional—they did not mean to harm themselves.

Inconclusive: There was insufficient information to determine probable intent of the individual.

To date, two railroads have partnered with Volpe in the pilot project. As of March 2020, two of the four evaluation steps identified by this document were completed: 1) understanding the information available to railroads when a trespasser strike occurs, and 2) developing and refining the preliminary TIDE criteria. Evaluation findings reveal that TIDE criteria can provide the most benefit to railroads with more detailed data that is consistently collected for both trespass fatalities and injuries. High quality data can be facilitated by using the components of the TIDE criteria to guide data collection after a strike occurs.

The third step in the evaluation process is underway as of March 2020. In the third step, researchers will pursue greater involvement by stakeholders, and facilitate partnerships with additional railroads to better evaluate the TIDE criteria at different locations across the US at different types of railroads.

In the fourth step, the team will develop an evaluation plan that determines:

- Whether a consistent trespasser intent criteria can be successfully implemented within the context of the railroads themselves

- Whether the TIDE criteria was able to address the needs of the railroads in better understanding trespass and suicide on the right-of way
- Whether the criteria helped railroads select and evaluate mitigations

Any barriers that may arise will also be identified, and potential solutions will be proposed. The fourth step should include data analysis based on the incident data and determinations made using the TIDE criteria, and additional interviews to identify other uses for the TIDE criteria found by the railroads. This also provides an opportunity to further refine the criteria and implement a recommended usage document that can be made easily available to all railroads interested in this tool.

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Appendix A.

TIDE Criteria for Railroads in the United States (Version I) and Decision Tree

I. Direct Factors: These are factors that can be used to determine if a suicide is probable. For example, suicide notes, statements of intent, or specific wording in incident reports alone can be used as sufficient criteria to suspect probable suicidal intent.

Presence of a suicide note: Was a suicide note mentioned in the report? If yes, then a determination of probable suicide can be made on this evidence alone. If explicitly stated that no note was found, indicate **no**. Otherwise indicate **not mentioned**. If no note is found or mentioned in the report, it has no bearing on the determination of suicide.

1 = Yes

2 = No

3 = Not mentioned

Prior statement of suicidal intent or suicide attempt: Does the report contain information from an individual who heard the individual express intent for self-harm preceding the incident? Alternatively, was there any other indication that the individual had expressed suicidal intent (e.g., a post on social media or statements to family/friends in the day(s) preceding)? If yes, then a determination of probable suicide or suicide attempt can be made on this information alone. If explicitly stated that no statement of intent was reported, indicate **no**. Otherwise indicate **not mentioned**. If no statement of intent or such a statement is not mentioned in the report, this has no bearing on the determination of suicide.

1 = Yes

2 = No

3 = Not mentioned

Behavior demonstrates suicidal intent: What specific action(s) were taken by the individual in the moments preceding the impact with the train? This section only includes the direct action that was taken by the person without considering other informative details about where they were looking, etc. If an action with an asterisk is included in the description, then no additional modifying behaviors are needed to suspect probable a probable suicide or suicide attempt. Choose one or more behaviors in the chronological order they are described in report (e.g., 4, 3, 2). Describe other behaviors preceding the incident that are known, for example, pacing, allowing multiple trains to pass, visible agitation, leaving personal items behind, etc.

1 = Lying on track

2 = Kneeling inside gauge

3 = Sitting on tracks

4 = Standing on tracks

5 = Walking along track inside gauge)

6 = Walking along tracks (outside gauge)

- 7 = Walking across tracks
- 8 = Running along tracks (inside gauge)
- 9 = Running along tracks (outside gauge)
- 10 = Running across tracks
- 11 = **Jumped in front of train at the last minute***
- 12 = Clear attempt to avoid train
- 13 = Stuck on tracks
- 14 = Retrieving object from tracks
- 15 = On/in vehicle (in motion)
- 16 = On/In vehicle (not in motion)
- 17 = Other behavior (specify)

Wording in report information: Was language used that directly states the act was a suicide, suicide attempt, or accident? Examples may include the word suicide, intentional, deliberate, etc., or the report may explicitly describe that the individual was attempting to beat the train, play chicken, tripped, fell, etc. If language described intent, then a determination of probable suicide or accident can be made on this information alone. Otherwise indicate **not mentioned**. If such a statement is not mentioned in the report, this has no bearing on the determination.

- 1 = Yes – Intentional/suicidal wording
- 2 = Yes – Unintentional/accident wording
- 3 = Not mentioned

II. Modifying Behaviors: This is evidence of behaviors, including eye contact and direction the individual was facing, that can also be used with other evidence to suspect probable suicide. The information in this section may be helpful in modifying determinations that are not already conclusive based on the *Direct Factors* section. None of the information in this section on its own is sufficient to suspect probable suicide. However, it may modify the information included in the direct modifying behaviors listed above so that a probable suicide or suicide attempt may be suspected. In some cases, when the individual is in a vehicle behavioral information can be difficult to obtain. In these cases please indicate that this is **not-applicable** and the reason why.

Direction Looking: What direction was the individual facing prior to impact? This information should be considered in conjunction with the information about behavior (under *Direct Factors*) to determine if the individual was likely to have been attempting suicide. For example, an individual facing a train but failing to attempt to move may indicate intent. Alternatively, an individual facing away from a train, but not attempting to move may indicate that they were unaware of the approaching train.

Choose all actions described in order they are included within report (e.g., X, X, X):

- 1 = At/toward train
- 2 = Away from train
- 3 = Perpendicular to train

4 = Not mentioned

5 = Not applicable (specify): _____

Eye contact: Did the individual make eye contact with the driver of the train prior to impact? If the individual made eye contact with the driver and did not make an attempt to remove him/herself from the right-of-way, this is a strong indication of a probable suicide or suicide attempt. If the report states that the individual was facing away from the train the coding response would be **no**. If there isn't any mention regarding eye contact indicate **not mentioned**. If the individual was in a vehicle or other situation where eye contact would not be seen then choose **not applicable** and state the reason why.

1 = Yes

2 = No

3 = Not mentioned

4 = Not applicable (specify): _____

Auditory and Visual Warnings: At the time of the incident and minutes preceding the incident, were there any auditory or visual warnings of an approaching train? The categories below are related to this type of information.

Train horn sounded before collision: The sounding of the train horn (along with other information, such as behavior or earphones) may provide information about whether the individual was aware of the approaching train or not. If the distance when the train horn sounded is indicated please enter the distance the train was from the individual.

1 = Yes, the report did mention that a train horn sounded

2 = No, the report mentioned that no train horn sounded

3 = The report did not mention a train horn sounding

4 = Not applicable [such as in cases where a body is found on the tracks]

Also, specify train distance if known.

Grade crossing safety enhancements: If the incident occurred at a grade crossing, were there any safety enhancements? If so, were they working?

1 = Safety enhancements are present and working

2 = Safety enhancements are present but not working

3 = Passive crossing

4 = Safety enhancements not mentioned but was at grade crossing

5 = Not Applicable—Not at grade crossing

Distraction: Did the individual appear distracted during the minutes preceding collision with the train? Some examples are listed below and include wearing ear phones, looking at phone talking or texting, walking with another individual; accompanied by a dog or other animal?

1 = Yes

2 = No

3 = Not mentioned

Earphones: Did the individual have earphones at the time of the incident? If yes, this may be an indication that the individual failed to hear the train prior to impact. If no earphone was listed in inventory then code as “no.”

1 = Yes

2 = No

3 = Not mentioned

Looking at phone or texting: Was the individual looking at their phone and texting prior to impact? If no phone was listed in inventory then code as “no.”

1 = Yes

2 = No

3 = Not mentioned

Talking on the phone: Was the individual talking on the phone prior to impact? If yes, this may indicate that they distracted by the conversation and were unaware of the oncoming train. If no phone was listed in inventory then code as “no.”

1 = Yes

2 = No

3 = Not mentioned

With other people: Was the individual with other people at the time of the incident? If so, does information in the report indicate that the other people were aware of the oncoming train (e.g., fled the tracks, tried to help the individual out of the way).

1 = Yes

2 = No

3 = Not mentioned

With an animal (e.g., dog): Was the individual with an animal at the time of the incident? If so, briefly describe the circumstance (e.g., chasing a loose animal or standing next to service animal).

1 = Yes

2 = No

3 = Not mentioned

Clothing: Was the individual wearing an item of clothing that may have obstructed their visual field of view at the time of the incident (e.g., hooded sweatshirt)?

1 = Yes

2 = No

3 = Not mentioned

Other distraction: If information (other than items included above) is provided that you feel shows the individual being distracted as the train approaches please enter a description here. If yes, specify the information.

Individual seen at location prior to incident: If yes, please give description (such as what was said and by whom).

1 = Yes

2 = No

3 = Not mentioned

Noted depression or withdrawal: If yes, please give description (such as what was said and by whom).

1 = Yes

2 = No

3 = Not mentioned

Marked emotional reaction to recent event: If yes, please decide if it was a negative or positive event. If it is stated that the individual seemed happy and did not experience any recent life events then answer **no**. If there was no mention of having an event occurring in the individual's life then respond with **not mentioned**.

1 = Yes – Negative Event

2 = Yes – Positive Event

3 = No

4 = Not mentioned

III. Inconclusive Evidence: The information in this section describes the circumstances under which an inconclusive determination should be made.

Notable lack of evidence: Indicate yes only if there is a substantial lack of evidence to make any determination. If yes, please explain what type of information was missing.

1 = Yes (specify): _____

2 = No

Evidence of alcohol or drugs at time of death: If yes, then intent cannot be determined based on state of mind. However if a *direct factor* of a probable suicide, suicide attempt, or probable accident is also included then the determination for intent can be completed.

1 = Yes

2 = No

3 = Not mentioned

TIDE Determination:

1 = Probable suicide. The individual's actions were intentional—they intended to harm themselves

2 = Probable accident. The individual's actions were unintentional—they did not intend to harm themselves

3 = Inconclusive. Insufficient information to determine probable intent of the individual

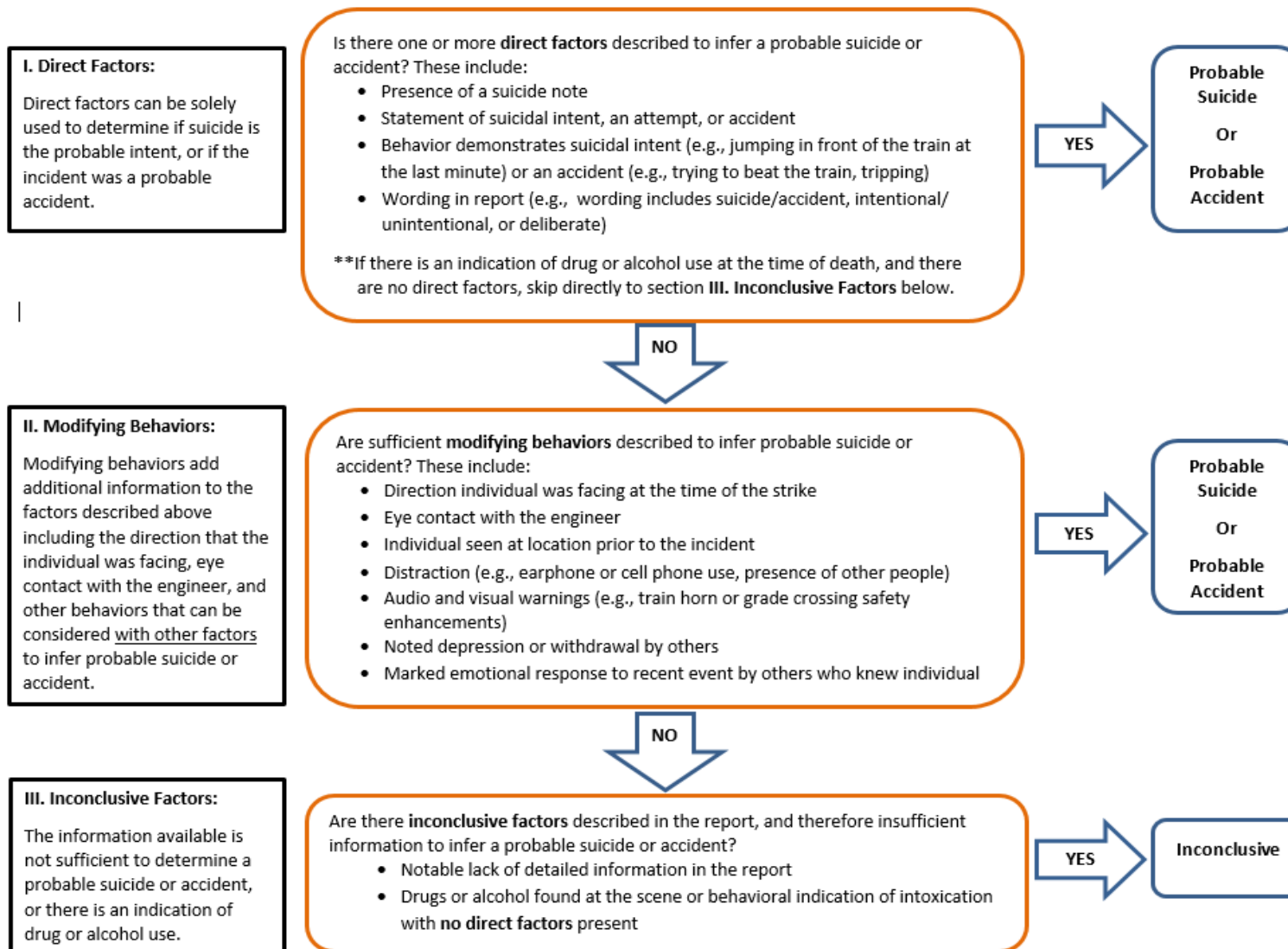


Figure 2. TIDE Flowchart

Abbreviations and Acronyms

ACRONYMS	EXPLANATION
CFR	Code of Federal Regulations
ERA	European Railway Agency
FRA	Federal Railroad Administration
RD&T	Research, Development and Technology
RSSB	Railway Safety and Standards Board
TIDE	Trespasser Intent Determination and Evaluation
UK	United Kingdom
Volpe	John A. Volpe National Transportation Systems Center