

Measure Name	Safety patrols to deter suicide and trespassing
Definition	Safety patrols can include rail staff, volunteers, or law enforcement with the goal of deterring unsafe behaviors near the right-of-way.
Tags	
Incident Type	Both trespass and suicide
Location	Both station and right-of-way
Intervention Strategy	Enforcement: policy development and rulemaking
Measure Category	Policy enforcement

Description

The presence of highly visible safety personnel can deter individuals from entering the right-of-way (ROW) and can be an effective way to identify and remove those at risk for trespass and suicide. Safety personnel can include rail staff, rail police and other law enforcement, or community volunteers. These patrols promote safety through increased physical presence near the rail system, by providing rail safety information to potential trespassers in the area, and by removing individuals from the ROW. Locations where trespass or suicide risk is high are ideal for safety patrols. The presence of individuals in clearly marked safety vests may dissuade potential trespassers, regardless of intent (suicidal or not), by making them aware of the danger or illegality of trespassing. Additionally, the presence of officers in plain clothes may also be effective [1]. Safety patrols can provide information about rail safety and trespassing laws to individuals on or near the tracks, helping to prevent future trespassing. Data are mixed about the extent to which individuals understand the legality of rail trespassing, and findings largely depend on the locations surveyed [2][3].

Individuals patrolling the track area may have a range of experience with rail trespass and suicide, and in some cases, specialized training may be appropriate. Rail employees may already be familiar with trespassing behaviors but can still benefit from further training on what to do if they see a trespasser, including those at risk for suicide. Volunteers may require a higher level of training than rail employees, as they may be less familiar with trespassing behaviors, laws, and procedures for entering the track area. Members of law enforcement, including rail police, are likely to be experienced with identifying potential trespassers and be familiar with what actions should be taken. Officers can also enforce trespassing laws through citations and fines, which have been shown to discourage future violations [4]. Such consequences may also be an effective tool to reduce the risk of trespass behavior [5][6].

Safety patrols can be combined with other measures to increase effectiveness (see Related Measures). For example, safety patrols can benefit from training to identify and assist those at risk for suicide so they can be connected with support services [7]. Direct funding for law enforcement agencies to police trespassing has been shown to reduce trespassing frequency as well as to contribute to other positive community impacts, including the identification of other criminal activity [8]. In 2022, the Federal Railroad Administration (FRA) [awarded 25 grants](#) to fund law enforcement trespass prevention activities and educational outreach campaigns aimed at reducing railroad-related suicides on rail rights-of-way.

Additional search terms: *deterrent, police, security*

Advantages

- Research supports the effectiveness of patrols for reducing both suicide [7] and trespassing (non-suicide) incidents [4].
 - Safety patrols can increase knowledge about rail safety for individuals who are unaware of the legal and safety risks associated with trespassing.
 - The presence of visible patrols (e.g., wearing a uniform or orange reflective vests) may deter potential trespassers, including suicidal individuals, from entering the ROW.
 - Safety patrols help connect suicidal individuals with support services, which may be especially beneficial for individuals who have not yet sought help on their own.
 - Training can be provided to current rail staff and/or community volunteers as part of a safety patrol initiative.
 - If safety patrols are conducted by law enforcement officials, this may provide opportunities to enforce other criminal activity that occurs on or near the right-of-way [8]
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Drawbacks

- It may be difficult for safety personnel to detect unauthorized activity in the track area at night when there is limited visibility. Lighting and detection technology may assist with monitoring of known hotspots, and the addition of audible alerts may help to deter trespassing activity at night.
 - Trespassers might be gone before the officers can respond to the location of the incident. [9].
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Notable Practices

- Safety personnel should be highly visible and identifiable to deter unsafe behaviors in the track area.
- Patrols are especially effective at locations with known trespass activity [4][7].
- In addition to, or in lieu of, any fines and citations issued to those who are trespassing, provide individuals with information on safe behaviors in the rail environment [4]. For example, California's High Intensity Safety Enforcement Program (HISEP) assists local police in regularly patrolled areas with known trespassing issues. These patrols issued citations to trespassers and distributed flyers with rail safety information [4]. HISEP's implementation coincided with a reduction in incidents, particularly for trespassing (non-suicide) incidents.
- It is critical to provide a comprehensive training program to community volunteers participating in the patrols. For example, a local sheriff's office in Reno, NV provided training to a group of

volunteers on how to monitor and report any unauthorized activity without entering the track area [10].

- Training for safety patrols can include how to approach individuals in the track area and notify the appropriate authorities when needed.
- Consider including crisis intervention training for safety patrol members to assist individuals at risk for suicide.

References

[1] Thompson, K., Offler, N., Hirsch, L., Every, D., Thomas, M. J., & Dawson, D. (2012). [From broken windows to a renovated research agenda: A review of the literature on vandalism and graffiti in the rail industry](#). *Transportation Research Part A: Policy and Practice*, 46(8), 1280-1290.

Abstract: The execution of vandalism and graffiti on rail property has a significant impact on rail authorities, the patronisation of rail services, expenditure, and the timely operation of services. There are also important social costs which stem from passengers feeling unsafe, not to mention the environmental costs of removing graffiti and repairing vandalism. In this review paper, we focus on the social, non-technical determinants of and deterrents to vandalism and graffiti in the rail industry. First, we consider the definitions of graffiti and vandalism that are often conflated. After providing some clarification on terminology, and proposing a media-centred approach to vandalism and graffiti, we consider various theorisations of the psychosocial determinants of vandalism and graffiti behaviour. We then turn to an empirical discussion of different technical and social, non-technical prevention programmes that have been trialled. With a focus on identifying what works and under what circumstances, we refer to international case studies of successful vandalism reduction initiatives from Europe, the United Kingdom, the United States of America and Australia. Based on a review of literature and practice, we outline a future research agenda to address vandalism and graffiti. We recommend lines of further research covering: theory, empirical data collection and practical initiatives. Specifically, we note the need for a trans-theoretical model of vandalism and graffiti, further ethnographic research and improved evaluation and benchmarking strategies. This is the first review dedicated to the topic of vandalism and graffiti in the rail industry and the first review of non-technical, social deterrents to vandalism and graffiti broadly.

[2] Freeman, J., & A. Rakotonirainy. (2015). Mistakes or Deliberate Violations? A Study into the Origins of Rule Breaking at Pedestrian Train Crossings. *Accident Analysis & Prevention*, 77, 45–50.

Abstract: Train pedestrian collisions are the most likely to result in severe injuries and fatalities when compared to other types of rail crossing accidents. However, there is currently scant research that has examined the origins of pedestrians' rule breaking at level crossings. As a result, this study examined the origins of pedestrians' rule breaking behaviour at crossings, with particular emphasis directed towards examining the factors associated with making errors versus deliberation violations. A total of 636 individuals volunteered to participate in the study and completed either an online or paper version of the questionnaire. Quantitative analysis of the data revealed that knowledge regarding crossing rules was high, although up to 18% of level crossing users were either unsure or did not know (in some circumstances) when it was legal to cross at a level crossing. Furthermore, 156 participants (24.52%) reported having intentionally violated the rules at level crossings and 3.46% (n = 22) of the sample had previously made a mistake at a crossing. In regards to rule violators, males (particularly minors) were more likely to report breaking rules, and the most frequent occurrence was after the train had passed

rather than before it arrives. Regression analysis revealed that males who frequently use pedestrian crossings and report higher sensation seeking traits are most likely to break the rules. This research provides evidence that pedestrians are more likely to deliberately violate rules (rather than make errors) at crossings and it illuminates high risk groups. This paper will further outline the study findings in regards to the development of countermeasures as well as provide direction for future research efforts in this area.

- [3] Barić, D., Pilko, H., & Starčević, M. (2018). Introducing experiment in pedestrian behaviour and risk perception study at urban level crossing. *International Journal of Injury Control and Safety Promotion*, 25(1), 102-112.

Abstract: Given the high risk of severe accidents at level crossings (LCs), this study examined legal and illegal crossings by pedestrians and cyclists at a high-traffic LC in Zagreb, Croatia. Survey data and field observations were collected to identify reasons for risky behaviour. Behaviour was observed under normal conditions and in the presence of various safety measures in order to identify measures that can reduce risky behaviour. Results show that the presence of police officer at the LC was most effective at reducing illegal crossings, while the presence of cameras contributes significantly as well, especially after safety educational campaign when illegal crossing decreases for 59.23%. We can assume that in future the improvement regarding human behaviour on LC could be made with cameras on LC and more frequent educational campaigns. This is the first reported use of field survey and video surveillance methods to analyse user behaviour at LCs in Croatia.

- [4] Adduci, B., Mottley, F., & Haines, M. (2009). [*ROW Fatality and Trespass Reduction Workshop 2008–Summary of Results*](#) (No. DOT-VNTSC-FRA-09-02).

Abstract: This report documents the activities and results of the first Right-of-Way (ROW) Fatality and Trespass Prevention Workshop which was held April 1 & 2, 2008 at the Caltrain headquarters in San Carlos, California. The workshop was sponsored by the Federal Railroad Administration (FRA) Office of Safety and the Federal Transit Administration (FTA); hosted by Caltrain; and organized by the U.S. DOT's Volpe National Transportation Systems Center.

- [5] Horton, S. & Foderaro, F. (2016). [*Law Enforcement Strategies for Preventing Rail Trespassing*](#). Federal Railroad Administration.

Abstract: The Volpe Center has investigated law enforcement methods that have successfully prevented trespassing along the railroad right of way. The types of law enforcement strategies currently being used and procedures followed in the field are documented, along with any findings on the effectiveness of these approaches. The end result of this effort is to produce a compilation of available procedures, best practices, data sources and findings to inform effective law enforcement rail trespass prevention programs.

- [6] Lobb, B., & Harré, N., & Terry, N. (2003). An evaluation of four types of railway pedestrian crossing safety intervention. *Accident Analysis & Prevention*, 35(4), 487-494.

Abstract: This study evaluated a programme of interventions designed to reduce the incidence of illegal and unsafe crossing of a rail corridor at a city station by boys on their way to and from the adjacent high school in Auckland, New Zealand. The boys were observed crossing before, during, and after implementation of each intervention; in addition, surveys were carried out before and after the programme to discover the boys' attitudes. Rail safety education in school, punishment for every unsafe crossing (continuous punishment), and punishment occasionally for unsafe crossing (intermittent punishment) were associated with significant decreases in unsafe crossing compared with that observed

prior to any intervention. General communications about rail safety were not associated with significant decreases in unsafe crossing. When interventions were examined consecutively, unsafe crossing was significantly reduced between the communications and education phases, and even more so between education and continuous punishment, but there was no statistically significant difference in frequency of unsafe crossing between continuous and intermittent punishment. It was concluded that punishment may be more effective in reducing unsafe behaviour in this type of situation than targeted education, and is much more effective than communications to heighten awareness.

[7] Niederkrotenthaler, T., Sonneck, G., Dervic, K., Nader, I. W., Voracek, M., Kapusta, N. D., Etzersdorfer, E., Mittendorfer-Rutz, E., & Dornier, T. (2012). Predictors of suicide and suicide attempt in subway stations: a population-based ecological study. *Journal of Urban Health, 89*, 339–353. [[PubMed Link](#)]

Abstract: Suicidal behavior on the subway often involves young people and has a considerable impact on public life, but little is known about factors associated with suicides and suicide attempts in specific subway stations. Between 1979 and 2009, 185 suicides and 107 suicide attempts occurred on the subway in Vienna, Austria. Station-specific suicide and suicide attempt rates (defined as the frequency of suicidal incidents per time period) were modeled as the outcome variables in bivariate and multivariate Poisson regression models. Structural station characteristics (presence of a surveillance unit, train types used, and construction on street level versus other construction), contextual station characteristics (neighborhood to historical sites, size of the catchment area, and in operation during time period of extensive media reporting on subway suicides), and passenger-based characteristics (number of passengers getting on the trains per day, use as meeting point by drug users, and socioeconomic status of the population in the catchment area) were used as the explanatory variables. In the multivariate analyses, subway suicides increased when stations were served by the faster train type. Subway suicide attempts increased with the daily number of passengers getting on the trains and with the stations' use as meeting points by drug users. The findings indicate that there are some differences between subway suicides and suicide attempts. Completed suicides seem to vary most with train type used. Suicide attempts seem to depend mostly on passenger-based characteristics, specifically on the station's crowdedness and on its use as meeting point by drug users. Suicide-preventive interventions should concentrate on crowded stations and on stations frequented by risk groups.

[8] Horton, S. & DaSilva, M. (2020). [Law Enforcement Strategies for Reducing Trespassing – Pilot Program](#). Federal Railroad Administration.

Abstract: The U.S. Department of Transportation (DOT) John A. Volpe National Transportation Systems Center, under the direction of the U.S. DOT's Federal Railroad Administration, Office of Research, Development, and Technology, evaluated the impacts of a program for four law enforcement agencies to perform trespassing enforcement activities on railroad rights-of-way (ROW). In all the communities, the project allowed law enforcement agencies to dedicate resources to rail trespassing enforcement. Most communities saw a decrease in the number of trespassers encountered per patrol as proceeded, indicating a positive reduction in the number of trespassers along the ROW. Some communities reported other benefits to the program such as supporting the enforcement of other illegal activity and gaining a better understanding of trespassing frequency

[9] Warner, J. E., Lee, D., Trueblood, A. B., Cline, J. C., Johnson, N. A., & Christjoy, A. (2022). [Strategies for deterring trespassing on rail transit and commuter rail rights-of-way, volume 1: Guidebook](#). Washington, D.C: The National Academies Press.

Objective: This guidebook is intended to provide information on strategies to deter trespassing on rail transit and commuter rail exclusive and semi-exclusive rights-of-way, including within station areas

outside designated pedestrian crossings. In general, trespassing is accessing rail transit and commuter rail restricted areas without permission or proper authorization, intentionally or unintentionally. The guidebook documents the extent of trespassing in the United States; existing decision-making guidance that agencies can utilize; causes, consequences, and risks associated with trespassing; mitigation countermeasures to reduce trespassing risks; and tools that agencies can utilize to identify possible mitigation strategies for a particular trespassing problem or concern.

[10] Gabree, S. H., Hiltunen, D., & Ranalli, E. (2019). [*Railroad Implemented Countermeasures to Prevent Suicide: Review of Public Information*](#) (No. DOT/FRA/ORD-19/04). Washington, DC: Federal Railroad Administration.

Abstract: The public discussion of railroad safety initiatives can help to improve safety, either directly with the public through an increased awareness, or by encouraging other carriers to consider similar safety efforts. Rail carriers are often quick to promote trespass and crossing safety efforts, however, efforts to mitigate rail suicide are often not discussed. Suicide is unique from other rail safety topics in that it requires more precise language when discussing publicly. Responsible discussion of suicide prevention can increase the availability of information on how to get help, while limiting the dramatization of these events, thereby reducing the likelihood of copycat events. In this report, the authors conducted web-based searches to identify rail-specific efforts to mitigate suicide that have been publicly discussed, either by the carrier themselves or through the media. Generally, there is limited discussion of suicide-specific prevention efforts being undertaken by rail carriers, and the level of detail provided about these efforts varies. In total, 14 carriers and a range of strategies were identified including fencing, signage, detection and monitoring, training of employees and authorities, public and industry events, websites, and media guidelines. Partnerships with suicide prevention groups, both local and national, were most often discussed.

Additional Resources

The following webpage provides an example of community volunteer safety patrols.

- Washoe County Sheriff's Office. [Rail Auxiliary Team \(RAT Pack\)](#).

The following resources provide information on high-visibility enforcement that can be applied to the rail environment.

- National Highway Traffic Safety Administration. [High Visibility Enforcement \(HVE\) Toolkit](#).
- National Highway Traffic Safety Administration. (2007). [Guidelines for Developing a High-Visibility Enforcement Campaign to Reduce Unsafe Driving Behaviors among Drivers of Passenger and Commercial Motor Vehicles](#).

The following news articles describe law enforcement efforts to address trespassing in the US.

- Durham, A. (2019, September 18). [Railway police patrol tracks in Louisville amid rise in trespassing](#).

- Moulton, C. (2018, September 28). [To deter trespassing on train tracks, Worcester police to add patrols.](#)

Trespassing laws vary between states in the US and can be found on the FRA's website:

<https://railroads.dot.gov/elibrary/compilation-state-laws-and-regulations-affecting-highway-rail-grade-crossings-5th-edition>

Related Measures

- Collaboration with local government and communities
- Identify and monitor hotspots
- Identify funding opportunities
- Incident cost estimation
- Planning for events with increased traffic
- Public messaging to prevent suicide
- Public messaging to prevent trespassing
- Refuse or delay boarding to discourage trespassing
- Training to identify and assist those at risk for suicide and trespassing