

INSTRUCTOR'S GUIDE

Live to Help Another Day

Highway-Railway Crossing Awareness Training for Emergency Responders



**OPERATION
LIFESAVER**

WHAT WE DO

Operation Lifesaver is a nationwide, non-profit public information and education organization dedicated to eliminating collisions, injuries, and fatalities at highway-railway crossings and from trespassing on railway rights-of-way. The program provides information to professional truck drivers, school bus drivers, motor coach and transit drivers, emergency responders, and the general public.

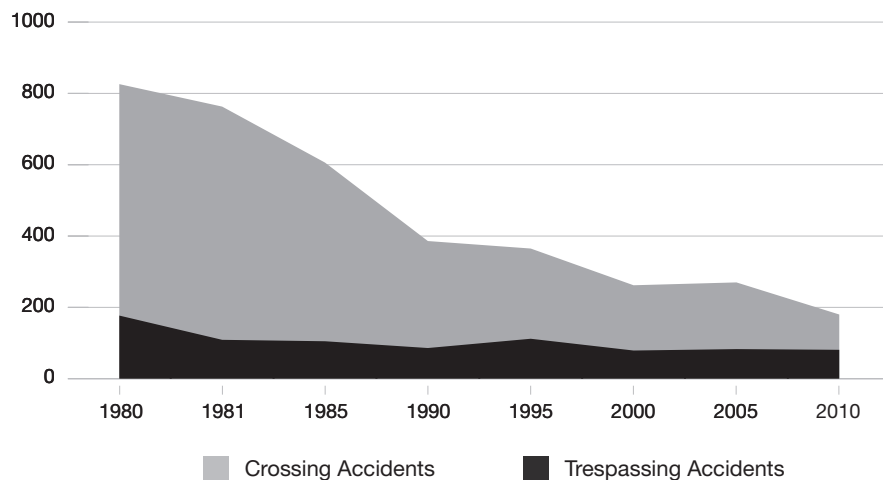
WHO WE ARE

Operation Lifesaver is a partnership initiative of the Railway Association of Canada and Transport Canada and works in cooperation with the rail industry, government, police, unions, and many public organizations and community groups.

WHY WE DO IT

The program has contributed significantly to a more than 75 percent reduction in train/vehicle collisions and casualties since 1981, despite a nationwide increase in train and vehicle traffic.

PROOF IT WORKS



MORE RESOURCES

For additional learning materials and access to supplementary videos and audio recordings, visit www.operationlifesaver.ca.



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INTRODUCTION

NEED TO KNOW

- Highway-railway crossings are intersections where the road crosses the railway tracks.

TARGET AUDIENCE

- EMS.
- Firefighters.
- Police officers.
- All those who respond to emergencies.

GOALS

- Make emergency responders aware of the dangers that exist at highway-railway crossings.
- Teach emergency responders the steps to ensure their own safety, along with that of the people in their care, at highway-railway crossings.

TOOLS

- **Instructor’s Manual & Student Notes:** these materials will help you to prepare emergency responders to successfully navigate the potential dangers at railway crossings.
- **Video, “Live to Help Another Day”:** teaches emergency responders the correct procedures to follow at highway-railway crossings to ensure their own safety, along with the people in their care.
- **Safety Quiz:** 16 questions based on information presented in the Video and Student Notes: six multiple choice questions, 10 true or false.
- **Website:** visit www.operationlifesaver.ca for additional learning materials, including access to supplementary videos and audio material.



Recommended Time Frame For Training Module (using a 60-minute format)

- Introduction 5 minutes
- Discussion 15 minutes
- Video 10 minutes
- Student Study Material..... 15 minutes
- Safety Quiz 10 minutes
- Question & Answer Period 5 minutes



*The primary contributing cause of vehicle-train collisions is **driver error**.*

PRESCREENING DISCUSSION TOPICS

Before viewing the video, engage drivers in discussion using the following topic suggestions:

- 1** Discuss the term “Sirencide”:
 - Describes the emotional reaction of emergency vehicle drivers when they begin to feel a sense of power and urgency, blocking out reason and prudence, leading to reckless operation of the vehicle.
 - Has anyone in the group experienced “Sirencide” – have them describe their experience.
- 2** Ask the group to share their experiences as emergency responders, including their reactions to responding to emergencies.
 - Have they ever thought about the consequences of ignoring the gates and lights at crossings?
- 3** Discuss stress factors and expectations on the road while hurrying to an emergency.
- 4** Discuss day and night driving and rural and urban driving.
 - How are these experiences different – what challenges do they face in each driving environment when responding to an emergency?
- 5** Warning devices at highway-railway crossings.
 - Review the list of signs and devices, located on page 3 of these Instructor Materials and page 2 of the Student Notes and visit the Operation Lifesaver website for additional information: <http://www.operationlifesaver.ca/facts-and-stats/signs-and-devices/>.
- 6** Different types of emergency vehicles and how they affect driving.
- 7** Use of sirens and continuing to stay aware of other dangers.
 - Remind drivers to turn off their sirens at highway-railway crossings so that they will be able to listen for warning bells or train whistles.
- 8** Misconceptions about clearing the tracks with large vehicles.
 - Do they know the size of their emergency vehicles?
 - Do they know the clearance at crossings?
- 9** Discuss the concept of “beating the train”
 - Discuss the speed of trains – how do they judge a train’s speed and its distance from them?
 - Refer them to Train Facts on page 7 of these Instructor Materials and page 6 of the Student Notes.
- 10** Discuss multiple sets of tracks at crossings.
 - Do they know how to identify multiple tracks?
 - How do they determine that it’s safe to cross both sets of tracks?
- 11** Discuss the reality that emergency responders must treat trains differently than regular vehicular traffic.
 - Remind drivers that all vehicles – including emergency vehicles – must yield to trains.
- 12** Emergency responders should “Always Expect a Train”.
 - Remind drivers that train traffic has been steadily increasing in the last ten years.
 - Inform them that freight trains do not travel on a schedule, and passenger trains change schedules.





STUDENT STUDY MATERIAL

The following information is provided in the *Student Notes*

WARNING SIGNS AND DEVICES

Visit the Operation Lifesaver website at <http://www.operationlifesaver.ca/facts-and-stats/signs-and-devices/>, for further information on this section.

Signs and traffic control devices are installed along roads near highway-railway crossings to:

- Regulate, warn and guide traffic.
- Alert drivers to the presence of railway tracks and the possibility of an approaching train.
- Provide a safety message and remind drivers of the laws regarding highway-railway crossings.
- Serve as a reminder to emergency responders when they're experiencing the stress and sense of urgency that comes with responding to an emergency.

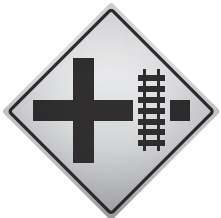
PASSIVE SIGNS/PAVEMENT MARKINGS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

These are non-active signs that warn that a highway-railway crossing is ahead.



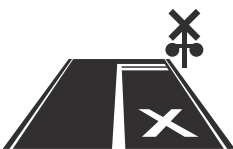
Yellow Diamond-Shaped Advance Warning Sign

- Warns drivers that the road crosses railway tracks ahead.
- Shows the angle of the track to the road.
- Reminds you to slow down, look and listen for a train and be prepared to stop if a train is approaching.



Yellow Diamond-Shaped Parallel Track Sign

- Identifies highway-railway intersections that appear immediately after making either a right or a left turn.

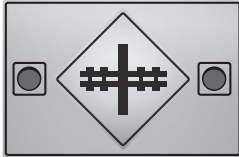


Pavement Markings

- A white "X" may be painted on the pavement in advance of highway-railway crossings.
- A double Stop line may be painted on the pavement five metres prior to the crossing.
- You must stop your vehicle no closer than five metres and no farther than 15 metres from the nearest rail.

ACTIVE SIGNS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

These are automated devices that warn of an approaching train.



Yellow Diamond-Shaped Advance Warning Sign with Yellow Flashing Lights

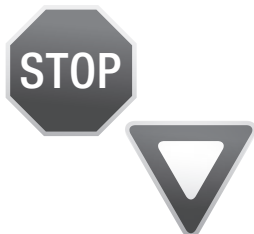
- Warns drivers that they are approaching a highway-railway crossing.
- When the yellow lights are flashing it indicates that the crossing signals are, or are about to become, active.
- Be prepared to stop.
- Shows the angle of the track to the road.

PASSIVE SIGNS/PAVEMENT MARKINGS AT HIGHWAY-RAILWAY CROSSINGS



The Railway Crossing Sign – also known as a “Crossbuck”

- The most common sign at public highway-railway crossings.
- Indicates to drivers that they must yield the right-of-way, stopping if necessary, before entering the railway crossing area and must not proceed until it is safe to do so.
- If there is more than one track, a sign below the Crossbuck indicates the number of tracks present. After one train has passed, look and listen for another train approaching from either direction. Be especially careful at crossings without gates, flashing lights or bell(s).
- Always expect a train.



STOP and YIELD signs (when used at highway-railway crossings)

- Mean the same as they do at highway intersections.
- The Stop sign indicates to drivers that they must stop their vehicles completely before entering the railway crossing area and must not proceed until it is safe to do so.
- The Yield sign indicates to drivers that they must yield the right-of-way, stopping if necessary, before entering the railway crossing area and must not proceed until it is safe to do so.



The EXEMPT sign

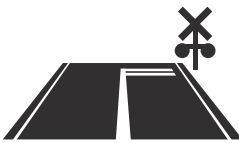
- Used in some provinces and placed below the Crossbuck.
- Informs drivers of vehicles required by law to stop at all highway-railway crossings, that a stop is not required, except when a train is approaching or occupying the crossing, or the driver's view of the sign is blocked.





DO NOT STOP ON TRACKS sign

- Usage and placement varies from province to province.
- Reminds you not to stop on the railway track for any reason.



Pavement Markings

- A double stop line may be painted on the pavement five metres prior to the highway-railway crossing.
- You must stop no closer than five metres and no farther than 15 metres from the nearest rail.

ACTIVE DEVICES AT HIGHWAY-RAILWAY CROSSINGS

These are automated devices that warn of an approaching train.



Flashing Red Lights

- Used to stop traffic when a train approaches.
- Accompanied by bell(s).
- Red lights flashing means a train is approaching.
- Stop and wait for the train to pass.
- Proceed when the lights and bell(s) have stopped, the train has passed and you can do so safely.



Flashing Red Lights with Bell(s) and Gates

- Used to close the road when a train approaches.
- Stop when the lights and bell(s) are activated and prior to the gates lowering across your side of the road.
- Remain stopped until the gates are fully raised and the lights stop flashing.
- It is illegal to go around the gates.

For additional information related to Signs and Devices, please visit:
<http://www.operationlifesaver.ca/facts-and-stats/signs-and-devices/>

RECOMMENDED PROCEDURES AT HIGHWAY-RAILWAY CROSSINGS

- 1** Trains always have the right of way at highway-railway crossings because they cannot stop quickly. Always stop and let the train pass.
- 2** Whenever possible:
 - Plan an emergency response route that avoids highway-railway crossings, or
 - Plan routes so that they include only crossings with active warning devices.
- 3** Plan routes that allow the driver or other crew members clear sight down the railway tracks in both directions.
- 4** When approaching a highway-railway crossing, an emergency vehicle operator should:
 - Slow down.
 - Turn off sirens, air horns, and any other sound-producing devices.
 - Open the window.
 - Look both ways and listen for an oncoming train.
 - If a train is approaching, stop, then proceed when it is safe to do so.
 - Do not stop on the tracks.
- 5** If the tracks are curved so that you can't see the tracks clearly in both directions, or the crossing has more than one set of tracks where the presence of one train may hide the approach of another:
 - Have a crew member get out of the vehicle and look up and down the tracks for approaching trains.
 - If necessary, have the crew member cross the tracks and guide the vehicle across.
- 6** The driver and another crew member should begin a "challenge and response" dialogue:
 - Face-to-face discussion to determine the driver's intentions when approaching a highway-railway crossing.
 - Reminder of the planned procedures for navigating a crossing.
 - The crew member can also ensure that the driver is coping with stresses encountered during the drive and not focusing only on arriving at the emergency site.
- 7** Ensure that your emergency dispatch centres know which railways operate in the area and have railway emergency numbers.
- 8** If a train is blocking a crossing when you must get through, contact your emergency dispatcher to advise the appropriate railway company.
- 9** If you're responding to an emergency on or near railway property or at a highway-railway crossing, park your emergency vehicle at least five metres from the nearest rail.
- 10** To stop a train in an emergency or when responding to an incident involving railway operations:
 - Call the railway emergency number, generally posted prominently at crossings, often on either crossing posts, behind a crossing sign or on a signal box.
 - Give exact locations, using all available reference points:
 - Check any signposts or signal housings at the crossing for emergency notification information.
 - Use railway mile posts, name of road, town, and province.
- 11** To prevent a potential stall on the tracks, always avoid changing gears while going through a highway-railway crossing.



These recommendations are meant to be guidelines. Be sure to check with your own department for specific policies that apply to you.





TRAIN FACTS

- A train traveling at 90 km/h covers a distance of 25 metres a second. (Give an example by identifying 25 metres.)
- The train is a metre wider on each side of the rails.
- Trains cannot stop quickly. An average freight train of 100 railcars, weighing approximately 8,000 tonnes and traveling 100 km/h, can take up to two kilometres to stop, after an emergency brake application.
- Passenger trains, either light rail or intercity, cannot stop quickly. Some passenger trains can travel up to 160 km/h. In an emergency, it can take as much as 1.6 kilometres to stop.
- When stopped at the crossing, as you look down the tracks, you may experience an optical illusion. The train may appear to be farther away and traveling slowly. The reality is the train can be much closer and going quite fast. Don't misjudge a train's speed and distance. When in doubt, WAIT for the train to pass.

HIGHWAY-RAILWAY CROSSING FACTS

- 1** Nearly 70 people are killed or seriously injured in approximately 250 highway-railway crossing collisions annually.*
- 2** On average, over the past five years, there have been 29 vehicle-train fatalities each year.
- 3** A motorist is 40 times more likely to die in a collision with a train than in a collision involving another motor vehicle.
- 4** In most years, more people die in collisions with trains than in commercial airline crashes.*
- 5** Approximately 50 percent of collisions at public highway-railway crossings occur where active warning devices have been installed.
- 6** There are approximately 20,000 public and 17,000 private highway-railway crossings in Canada.
- 7** The majority of vehicle-train collisions occur when the train is traveling less than 50 km/h.

SOURCES: Operation Lifesaver, Transport Canada, Transportation Safety Board of Canada.

* Based on Transportation Safety Board of Canada data.

For updates, check the Transportation Safety Board of Canada website: www.tsb.gc.ca.

SAFETY QUIZ ANSWER KEY

- 1** b) 250
- 2** c) 29
- 3** b) Yield.
- 4** d) Approximately 2 kilometres or the equivalent of about 18 football fields.
- 5** c) Almost half of all highway-railway crossing collisions occur where there are active warning devices (gates, flashing lights, bell).
- 6** b) An optical illusion makes the train appear to be farther away and moving slower than it actually is.
- 7** **False.** Emergency vehicles do not have the right of way at highway-railway crossings because trains cannot stop quickly.
- 8** **True.** A crossbuck is the most common warning device at highway-railway crossings.
- 9** **True.** A STOP sign means the same as a STOP sign at regular intersections.
- 10** **False.** The number below a crossbuck indicates the number of tracks at that highway-railway crossing and warns the driver to be aware of trains approaching from either directions.
- 11** **True.** Lowered gates and flashing lights mean a train is approaching (even if one has already passed). Never go around these gates. It is against the law.
- 12** **True.** Response routes should be selected at which driver and crew members have clear sight down the railway tracks in both directions. Response routes equipped with automatic warning devices are preferable.
- 13** **False.** At crossings over a single track with no nearby obstructions, slow down to check for oncoming trains.
- 14** **True.** A crew member should get out of the vehicle and look for approaching trains where views are obstructed or where there is more than one set of tracks.
- 15** **True.** A “challenge and response” dialogue is suggested to aid the driver in following planned procedures for traversing grade crossings.
- 16** **True.** EVERY COLLISION WITH A TRAIN IS PREVENTABLE.





MORE INFORMATION

For more information, visit the Operation Lifesaver website at www.operationlifesaver.ca, or contact us at:

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