

STUDENT NOTES

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.

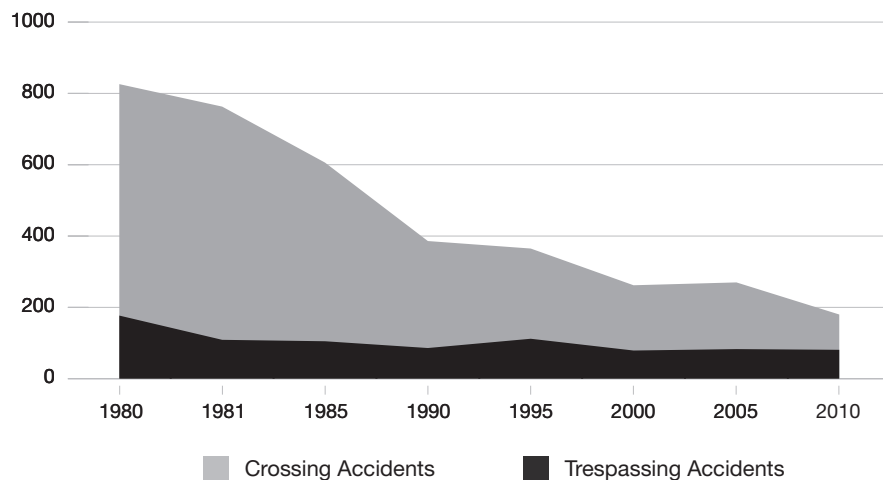
WHO WE ARE

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

About 250 collisions occur each year at highway-railway crossings resulting in the death or serious injury of 70 people. These injuries include amputations, paralysis, severe burns, and lacerations. All of them are preventable.

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.



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

NOTES ON PREVENTING COLLISIONS

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.

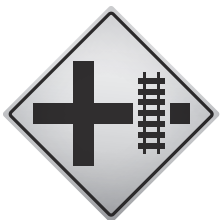
PASSIVE SIGNS/PAVEMENT MARKINGS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

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



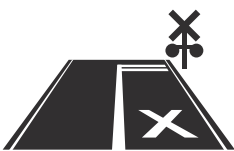
Yellow Diamond-Shaped Advance Warning Sign

- 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

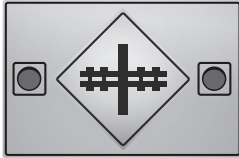
- A white "X" may be painted on the pavement in advance of highway-railway crossings.
- A double Stop line may be painted on the pavement five metres prior to the crossing.
- You must stop your vehicle no closer than five metres and no farther than 15 metres from the nearest rail.





ACTIVE SIGNS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

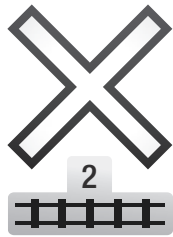
These are automated devices that warn of an approaching train.



Yellow Diamond-Shaped Advance Warning Sign with Yellow Flashing Lights

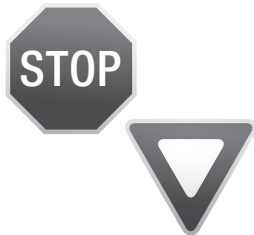
- Warns drivers that they are approaching a highway-railway crossing.
- When the yellow lights are flashing it indicates that the crossing signals are, or are about to become, active.
- Be prepared to stop.
- Shows the angle of the track to the road.

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.



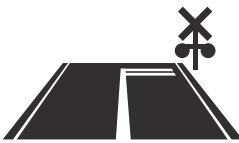
The EXEMPT sign

- 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.
- 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.





MORE INFORMATION

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

Operation Lifesaver

99 Bank Street, Suite 901

Ottawa, Ontario K1P 6B9

Phone: 613-564-8100

Fax: 613-567-6726

Email: admin@operationlifesaver.ca

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A Partnership in Public-Rail Safety