

INSTRUCTOR'S GUIDE

The Bus Stops Here

Highway-Railway Crossing Awareness Training for Motor Coach and Transit Drivers



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.

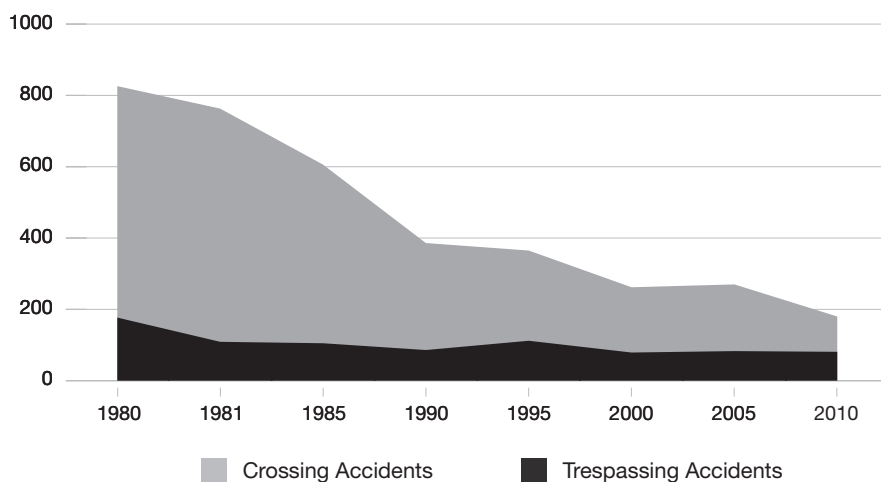
WHO WE ARE

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

- Professional motor coach and transit drivers.

GOALS

- Illustrate the potential dangers that await motor coach and transit drivers at highway-railway crossings.
- Teach motor coach and transit drivers important safety tips to follow to help them avoid tragedies at highway-railway crossings.

TOOLS

- **Instructor’s Manual & Student Notes:** these materials will help you to prepare motor coach and transit drivers to successfully navigate the potential dangers at railway crossings.
- **Video, “The Bus Stops Here”:** teaches motor coach and transit drivers safety tips to follow at highway-railway crossings.
- **Safety Quiz:** 20 questions based on the Video and Student Notes: seven multiple choice questions, 13 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 students in discussion using the following topic suggestions:

- 1 Ask the drivers about their reactions to everyday driving experiences. Allow them to talk briefly about their experiences on the road.
 - How well do they know their routes?
 - As the group provides the information, list some of the stress factors, expectations, and present safety habits they practice on a flip chart or board.
- 2 Discuss differences between urban and rural driving as they relate to highway-railway crossings. Explore their present awareness of warning signs and devices at highway-railway crossings and what they mean.
 - 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/>.
- 3 Find out how well drivers prepare for situations involving issues relating to vehicle size and clearance. Give examples of situations where vehicle size and clearance is an issue.
 - Do drivers know the length of their vehicles?
 - Do they know the clearance at the crossing(s) on their route?
 - How do they determine whether it is safe to stop on the other side of the railway tracks?
 - How do they deal with multiple sets of tracks with varying spaces between them?
- 4 Can they judge the speed or distance of a train as it approaches a crossing?
 - How do they decide whether or not they have enough time to get across the tracks before the train arrives?
 - Do they wait every time they see or hear a train coming?
- 5 Motor coach and transit drivers can “Always Expect a Train”.
 - Remind drivers that train traffic has been steadily increasing in the last ten years.
 - Inform them that trains have irregular schedules: freight trains do not travel on schedule, and passenger trains change schedules.
- 6 Before viewing the video, ask the drivers if they have ever tried to “beat the train” or driven around lowered crossing gates?
- 7 Do the drivers know their company policy and established procedures for railway crossing approaches?
- 8 Are drivers aware that rail speed may be well over the posted road speed (or vice versa)?



Most highway-railway crossing collisions occur within 40 km from home.





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.

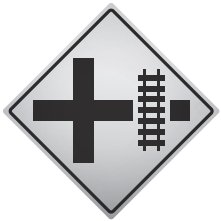
PASSIVE SIGNS/PAVEMENT MARKINGS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

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



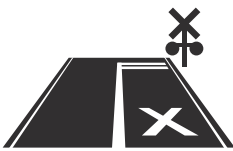
Yellow Diamond-Shaped Advance Warning Sign

- 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.
- In the US, the Advanced Warning Sign is circular, with a large black X and two R's, and a yellow background.



Yellow Diamond-Shaped Parallel Track Sign

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

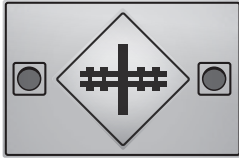


Pavement Markings

- 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

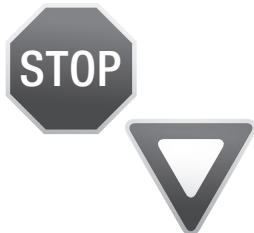
- Warns drivers that they are approaching a highway-railway crossing.
- When the yellow lights are flashing it indicates that the crossing signals are, or are about to become, active.
- Be prepared to stop.
- Shows the angle of the track to the road.

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

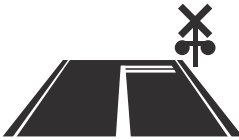
- Used in some provinces and placed below the Crossbuck.
- Informs drivers of vehicles required by law to stop at all highway-railway crossings, that a stop is not required, except when a train is approaching or occupying the crossing, or the driver's view of the sign is blocked.





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** As you approach the crossing, look beyond the tracks to see:
 - If there is a signal or stop sign.
 - If traffic is lined up.
 - If there is enough space to allow the bus to completely clear the crossing when stopped.
- 2** As you slow down, activate your four way flashers indicating that you will be stopping (where not prohibited by law).
- 3** If you are on a multiple lane highway, make the stop from the right lane - try to avoid stopping in the centre or left hand lanes.
- 4** Stop at the painted stop line. If there's no stop line:
 - Stop before the crossing sign.
 - Stop no closer than five metres (15 feet) from the nearest rail, where you have the best view of the tracks.
- 5** Whenever possible, open the door and window and listen for an approaching train. When you are within five metres of a crossing, always ensure that passengers remain onboard.
- 6** Check the signals again before proceeding.
- 7** At a multiple track crossing, stop only before the first set of tracks. When you are sure no train is approaching on any track, proceed across all of the tracks until you have completely cleared them.
- 8** Cross the tracks in low gear. Do not change gears while crossing.
- 9** If the red lights begin to flash after starting over the tracks, KEEP GOING!
- 10** Do not stop on the tracks.



IF YOU GET STUCK ON THE TRACKS - EVACUATE THE BUS!

- 1** Get Out and Stay Out
 - Get all the passengers out of the bus immediately.
 - Quickly move passengers at least 30 metres away from the track - this will reduce the chances of being struck by flying debris if the train hits the stalled vehicle.
- 2** Contact the Railway
 - Emergency numbers are often found on either crossing posts, behind a crossing sign or on a signal box.
 - If you can't find the emergency number, call 911 or the local emergency number.
- 3** Get Help Fast
 - If you don't have a phone, alert other travellers and request use of a cell phone.
- 4** It's Impossible for You to Stop a Train Quickly
 - Trains can't stop quickly. Moving at 100 km/h, they can take up to two kilometres to stop.



Remember: Trains can approach from either direction and on any track.





PENALTIES

Provincial and state regulations define specific penalties for driving infractions related to highway-railway crossings. Offences can result in:

- Fines.
- License downgrade or suspension.
- Driver record which could result in higher insurance cost, loss of employment or being screened out of other job opportunities.

OTHER CONSIDERATIONS

POLICE OFFICER OR FLAG PERSON AT THE CROSSING

If a police officer or properly identified railway flag person is at the crossing:

- Obey directions.
- Remember that you are still responsible for your personal safety.
- Confirm that it is safe to cross the tracks by looking and listening for the approach of a train.

VIEW OF TRACKS AT CROSSINGS

- Only cross the tracks if you can see far enough down the track to ensure that no trains are approaching.
- Be especially careful at crossings without gates, flashing lights or bell(s).
- Always look and listen to be sure it is safe to proceed - even if there are active warning signals, and they do not indicate a train is approaching.

VEHICLE SIZE AND CLEARANCE

- IF IT WON'T FIT, DON'T COMMIT!

- Know the length of your bus.
- As you approach a crossing, watch for traffic lined up on the far side of the crossing.
- Pay attention to the amount of room available for your vehicle.
- Always ensure that you can completely clear the crossing surface with enough room to spare.
- Remember that the train will be at least a metre wider than the rails on both sides.

OVERHANG

- Know the length of your vehicle and allow for overhang.
- Keep in mind, while you're stopped, the back of your bus might be hanging over the rails.

REPORTING HAZARDS

Report any conditions at highway-railway crossings that may be dangerous to highway or rail traffic.

- Call the railway emergency number, generally posted prominently at crossings, often on either crossing posts, behind a crossing sign or on a signal box.
- If this number cannot be located immediately, call 911 or the local emergency number.



Laws and regulations governing motor coach and transit drivers at highway-railway crossings may vary in each province. Be aware of your provincial legislation to ensure that you are in compliance at all times. Also, know that local law and company policy may require further action.

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** d) Approximately 2 kilometres or the equivalent of about 18 football fields.
- 4** d) Know the length of your bus. If you have doubt as to the available space on the other side of the crossing, do not take a chance. If it won't fit, don't commit.
- 5** b) An optical illusion makes the train appear to be farther away and moving slower than it actually is.
- 6** d) Keep going. It takes less time than trying to back-up off the crossing.
- 7** d) Collisions are preventable as long as drivers obey the railway warning signs and signals and use proper judgment.
- 8** **False.** No motor vehicle has the right-of-way at highway-railway crossings. The laws of physics make it impossible for a train to stop quickly enough to prevent a collision.
- 9** **True.** A highway-railway crossing is marked with a crossbuck sign, which should be considered as a Yield sign.
- 10** **True.** A STOP sign at a highway-railway crossing requires a full stop, as it does at any intersection.
- 11** **False.** A number posted below the crossbuck indicates the number of tracks at that crossing. It warns the driver to beware of trains approaching from either direction on more than one track.
- 12** **False.** By the time the locomotive engineer can see an obstruction on the tracks, it is too late to be able to avoid a collision. Trains cannot stop quickly, even after applying the emergency brake.
- 13** **False.** If your bus stalls on the tracks, evacuate your passengers immediately as a train can approach at anytime.
- 14** **False.** When there is more than one set of tracks, a train could be approaching from any track in either direction.
- 15** **True.** This is the law in every province.
- 16** **False.** The advanced warning sign in the U.S. is circular with a yellow background.
- 17** **False.** The advanced warning sign in Canada is diamond shaped with a yellow background.
- 18** **True.** Lowered gates and flashing red lights mean do not proceed. Even if a train has just passed, another could be approaching. It is extremely dangerous and against the law to go around lowered gates.
- 19** **True.** It's not only illegal, but also dangerous, to drive around crossing gates.
- 20** **True.** Learn lifelong, lifesaving habits at highway-railway crossings.

MORE INFORMATION

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

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