

INSTRUCTOR'S GUIDE

Stay on the Right Track

Highway-Railway Crossing Awareness Training for Newly Licensed 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.

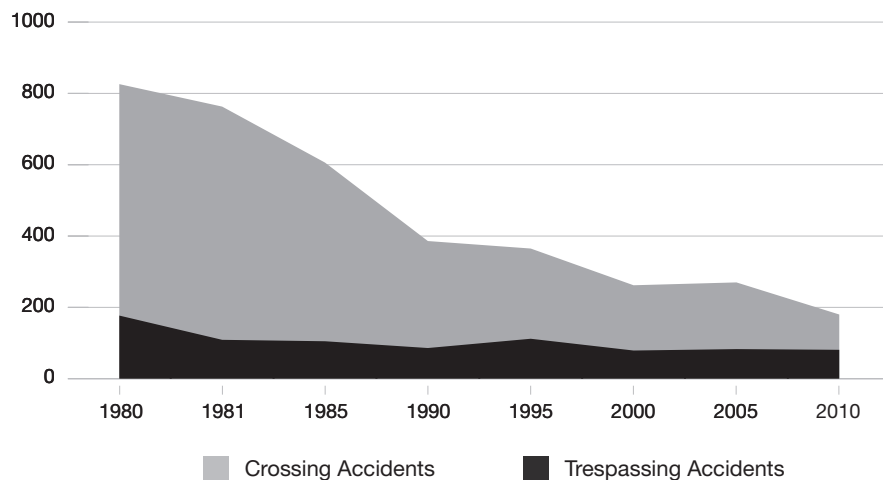
WHO WE ARE

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

- Newly licensed drivers.

GOALS

- Warn newly licensed drivers of the potential dangers that exist at highway-railway crossings.
- Teach new drivers safety tips to follow at highway-railway crossings so they avoid tragedy.
- Educate newly licensed drivers so that vehicle-train collisions are reduced nationwide.

TOOLS

- **Instructor’s Manual & Student Notes:** these materials will help you to prepare newly licensed drivers to successfully navigate the potential dangers at railway crossings.
- **Video, “Stay on the Right Track”:** teaches new drivers safety tips to follow at highway-railway crossings.
- **Safety Quiz:** 20 questions based on the Video and Student Notes: nine multiple choice questions, 11 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** Have the class describe their reactions to everyday driving.
 - What are their stresses and expectations as new drivers?
 - What are their current safety habits?
 - What decisions do they have to make while driving?
 - How familiar they are with their regular travel routes?
 - How observant are they in unfamiliar surroundings?
 - Have they ever thought about the consequences of ignoring crossing gates and lights?
- 2** Discuss their experience with:
 - Urban and rural driving.
 - Driving in daylight and at night.
 - Driving during poor weather.
 - Are they aware of differences at highway-railway crossings in the different environments?
- 3** Explore the drivers' awareness and recognition of highway-railway crossing warning devices and their meanings.
 - 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/>.
- 4** Discuss how motor vehicles interact with highway-railway crossings in various situations. Give examples.
- 5** Discuss how vehicle size (including trailers, motor homes, etc.) may determine how a driver approaches more than one set of tracks with signals on the other side of the crossing or two or more sets of tracks in close proximity.
- 6** Ask what they would do if a gate begins to lower across the road.
 - Discuss the dangers of entering a crossing when there may not be sufficient space to clear the tracks on the other side.
 - Make sure students are aware of the issues surrounding overhang.
- 7** Ask the class to think about whether they have ever tried to "beat the train" or whether they have ever driven or seen anyone drive their vehicle around the gates. (Answers don't need to be out loud.)
 - 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 whenever they see or hear a train coming?
- 8** Can they distinguish how trains differ from other vehicular traffic?
 - Remind drivers that they must always yield to a train because trains travel too quickly to stop for other vehicles.
- 9** Are drivers aware that rail speed may be well over the posted road speed (or vice versa)?
- 10** Drivers 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 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.

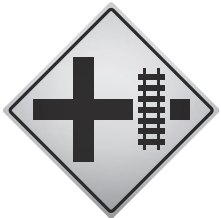
PASSIVE SIGNS/PAVEMENT MARKINGS IN ADVANCE OF HIGHWAY-RAILWAY CROSSINGS

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



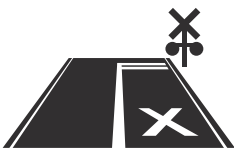
Yellow Diamond-Shaped Advance Warning Sign

- 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.

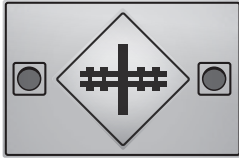


Pavement Markings

- 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

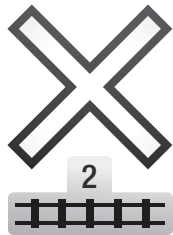
These are automated devices that warn of an approaching train.



Yellow Diamond-Shaped Advance Warning Sign with Yellow Flashing Lights

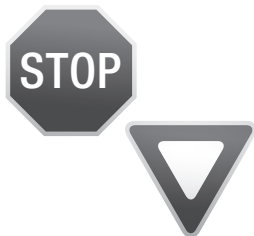
- Warns drivers that they are approaching a highway-railway crossing.
- When the yellow lights are flashing it indicates that the crossing signals are, or are about to become, active.
- Be prepared to stop.
- Shows the angle of the track to the road.

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

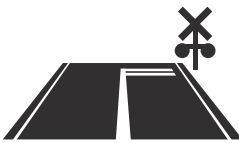
- Used in some provinces and placed below the Crossbuck.
- Informs drivers of vehicles required by law to stop at all highway-railway crossings, that a stop is not required, except when a train is approaching or occupying the crossing, or the driver's view of the sign is blocked.





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 Slow down and approach at a speed at which you can safely stop, if required.
- 2 Turn off the radio.
- 3 Ask passengers to be quiet.
- 4 Open the window.
- 5 Listen for the train.
- 6 Look both ways. Make sure to look around obstructions such as mirrors and windshield pillars.
- 7 If you must stop, stop no closer than five metres (15 feet) from the nearest rail.
- 8 Watch for vehicles that must stop at highway-railway crossings. Be prepared to STOP when you are following buses or trucks that may be required, either by law or company policy, to stop.



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

REVIEW PROCEDURES AT HIGHWAY-RAILWAY CROSSINGS

RESUMING TRAVEL

- Double check that no other trains are approaching and that the tracks are clear.
- At an active highway-railway crossing, remain stopped until the gates are fully raised and the lights stop flashing.
- Before resuming, make sure there is enough room on the far side of the track for your vehicle.
- If the red lights begin to flash after starting over the tracks, KEEP GOING.
- Do not stop on the tracks.

DRIVING HAZARDS

- Some collisions occur when motorists run into a train that is already occupying a crossing, especially in the evening.
- Always drive at a speed that allows you to stop within the distance of your headlights – so you have a clear view of the road ahead of you.
- Be especially alert for advance warning signs.
- Look for the retro-reflectorized crossing signs as well as elements on railway equipment.
- Be prepared to stop.
- Road and weather conditions may require extra caution. Be especially alert for advance warning signs and be prepared to stop.





- Be aware of other road users:
 - Cyclists and users of wheeled mobility devices move slower and may require additional room when crossing.
 - School buses and other vehicles may be required to stop.
- Stay alert! – Don't talk/text on your cell phone, eat or drink while driving.

IF YOU GET STUCK ON THE TRACKS

- 1** Get Out And Stay Out
 - Get out immediately.
 - Move quickly 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.

TIPS FOR MOTORCYCLISTS

- Railway tracks are extremely slippery.
- For your own safety, be particularly aware of ADVANCE WARNING signs – these signs will let you know the approximate angle at which the tracks meet the road.



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

- The safest way to cross the tracks is at as close to a 90-degree angle as possible. The minimum angle you should cross at is 45 degrees.
- Stay in your own lane and be aware that the traffic behind you may not have to slow down as much as you do.
- Be aware of a possible bump and avoid turning or braking while on the tracks.
- Approach the tracks at a speed that will allow you to stop safely if necessary.

PENALTIES

Provincial 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 to ensure 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

Cross the tracks only 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!

- 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.

OVERHANG

- Know the length of your vehicle and allow for overhang.
- While stopped, your vehicle may be hanging over the rails.
- Remember that the train will be at least a metre wider than the rails on both sides.

REPORTING HAZARDS

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

- Ensure that you, and others in the area are safe.
- Call the railway emergency number, generally posted prominently at crossings, often found 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.





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** c) When you see the crossbuck sign, you know that you are at a railway crossing. It is your responsibility to slow down, look, listen and YIELD to oncoming trains.
- 4** d) Approximately two kilometres or the equivalent of about 18 football fields.
- 5** b) An optical illusion makes the train appear to be farther away and moving slower than it actually is.
- 6** d) Slow down, look and listen for a train and be prepared to STOP.
- 7** d) Keep going. Do not get trapped!
- 8** d) Get out immediately. Many railway companies post their emergency numbers prominently at crossings. If this cannot be located immediately, call 911 or the local emergency number.
- 9** d) According to studies, drivers who do not exercise due caution at crossings are the main reason for highway-railway crossing collisions. Drivers who fail to obey the warning signs take dangerous risks with their lives and the lives of others.
- 10** **True.** Lowered gates and flashing lights mean you should not proceed. Even if a train has just passed, another could be approaching. Never go around lowered gates: It is extremely dangerous and it is against the law.
- 11** **True.** At a crossing with more than one set of tracks, there is always the possibility of another train approaching from either direction.
- 12** **False.** Trains cannot stop quickly even after the emergency brakes are applied.
- 13** **True.** Collisions between vehicles and trains can be prevented.
- 14** **True.** A crossbuck is the most common warning device at highway-railway crossings.
- 15** **True.** Always be prepared to stop for an oncoming train. Any time is train time!
- 16** **True.** A STOP sign before a highway-railway crossing requires a full stop, as it does at any highway intersection.
- 17** **True.** The number posted below a crossbuck indicates the number of tracks at that crossing, and tells drivers to beware of trains approaching from either direction.
- 18** **False.** Never move until the lights stop flashing - you might walk or drive right into the path of a moving train on another track or slam into its side.
- 19** **True.** It's not only illegal, but also dangerous, to drive around crossing gates.
- 20** **False.** The majority of vehicle-train collisions occur when the train is travelling less than 50 km/h.





MORE INFORMATION

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

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