Studies have shown the average driver is capable of driving at least twice as safely as they currently do. No one driving today can afford to drive at half of their potential.

At the completion of this module, you will have gained insight and knowledge required for you to drive 'S. A. F. E.':

S SEE what is going on around you, to the front, the rear, the left and right. Don't forget to also check overhead traffic signals or overhead hanging objects and the road surface beneath your vehicle.

A ANALYZE what you have seen. For example, don't just 'see' children playing beside the road - analyze this information and recognize the potential hazard that exists should a child dart into your path. Remember, you are not just an observer; you are an active participant.

F FIND the way to avoid a hazard should a situation actually happen. To do this requires you to know what is happening around at all times. You do not want a plan which creates a second danger as you escape from the original hazard.

E ESCAPE by putting your plan into action should the dangerous situation develop.

THE PROFESSIONAL OPERATOR

While a properly maintained vehicle is a very valuable tool in the prevention of collisions, the most influential factor is the operator. It is the operator's skills, knowledge, habits, attitudes, physical and mental condition that are factors in either being involved in a collision or being able to avoid a collision.

or a partially hidden railroad crossing up ahead. Use your EYES to see and your MIND to analyze what you see for potential dangers.

STEPS FOR AVOIDING HAZARDS

- **Identify**
  You must be able to identify any potential hazards or dangerous situations.
- **Predict**
  Predict what may happen next and all the possibilities.
- **Decide**
  Decide which course of action you may need to take in order to avoid a collision.
- **Execute**
  Put your plan into action.

It is important that you remain alert and consciously search for hazards as you drive. Both your survival and that of your passengers depends on your ability to identify the clues that indicate a potential or real hazard.

One of the most important aspects of defensive driving is recognizing impending hazards **BEFORE** they become a problem for you. Early recognition allows the time you need to avoid trouble. It is vitally important that you recognize and become **IMMEDIATELY** aware of what you see while driving.

This is what is meant by 'connecting your mind to your eyes'. It is thinking about the possibility that the ball rolling across the road may be chased by a child, or that a vehicle approaching on an adjacent road may not stop at a cross street. It also means not being so deeply lost in thought that that you fail to see a 'no turn' sign,

SIX CONDITIONS AFFECTING DRIVING

There are six conditions in any driving situation and your ability to adjust to any of them may prevent or create a collision.

1. light
2. weather
3. road
4. traffic
5. vehicle
6. driver

1. **Light Conditions**
   - overdriving your headlights at night. The average headlights are only capable of illuminating the highway for approximately 100 metres.
   - headlight glare at night. The human eye takes about seven seconds to recover from headlight glare and at 80 km/h a vehicle would travel 160 metres in those seven seconds
   - sun glare in the morning, late afternoon or glare from the snow on a bright winter day; sunglasses and a clean windshield are essential for a professional operator.

2. **Weather Conditions**

   Driving rain, snow, sleet and fog can all contribute to loss of vehicle control. These conditions can be dangerous because they affect other road users as well. Reduce your speed, drive with your headlights on and, if conditions are too bad, don't drive at all.

3. **Road Conditions**

   Curves, gravel, valleys and hills all limit the speed at which you can drive.

4. **Traffic Conditions**

   Many run-off-the-road collisions probably reflect the deliberate choices of some 'escape artists' who took a chance once too often. The defensive operator looks far ahead, anticipates traffic situations, uses good judgment and avoids getting into tight spots in the first place.

5. **Vehicle Conditions**

   - bad tires blowing out
   - bald tires unable to grip the road when needed
   - defective brakes, poor steering.

6. **Driver Conditions**

   - physically you are very dependant on your vision directly ahead of you as well as around you. Using your peripheral vision, you can see the 'big picture'. Keep your eyes moving to scan the road ahead, behind and to the sides. Every three to five seconds, check your rear-view mirror for any vehicles that may be following or trying to pass
   - focusing your attention on your driving, although sometimes difficult, is imperative to your ability to avoid collisions. Your attention needs to be on the task at hand and avoid personal distractions. Make sure you are well rested before beginning your trip
   - driving under the influence of any medication can affect your driving ability. When prescribed, ask your doctor what effect, if any, your medication may have on your ability to drive

     Over the counter medication requires the same attention. Your pharmacist is a great resource for information on all and any side effects, especially if this is combined with prescribed medication

     All new medications should be taken on a Friday evening or Saturday morning as this will give time for any side effects to show themselves without compromising operation of the school bus on a weekday
   - alcohol in any amounts will impair your ability to drive. Many employers in Canada forbid employees from driving within 12 hours of consuming any alcohol.

Each of these conditions is critical on its own. However, you will seldom encounter a situation with just one of these conditions on its own. They tend to be grouped together, compounding the effect.

It is important that you learn to recognize when any or all of these conditions are adversely affecting your driving behaviour or ability. This means not driving until after the condition has improved.

What can you do to make sure these conditions don't surprise you?

At a very minimum, you should attempt to anticipate the conditions you are likely to encounter during your route. Take a **'Pre-Trip Mental Inventory'**.

Before you start, sit behind the steering wheel for a minute or two and run through a mental checklist.

PRE-TRIP MENTAL INVENTORY CHECKLIST:

Driver conditions:

- am I fully rested?
- free from alcohol or other drugs?
- feeling fine and not ill?
- am I able to concentrate on driving?
- is my attitude courteous, careful and considerate?

Vehicle Conditions:

Have I completed my checks:

- under the hood?
- exterior?
- interior?

Condition of the Environment:

- light?
- weather?
- road?
- traffic?

After you have answered these questions appropriately, you have mentally prepared yourself for the driving conditions that you could encounter on the trip ahead.

BASIC COLLISION PREVENTION FORMULA

How does one become a defensive operator? It really involves no magic, but it does require a conscious effort to follow and practice the basic collision prevention formula, which is to:

1. recognize the hazard;
2. understand the defense; and then
3. act in time.

Most people continually go through the mental process of practicing the 'Basic Collision Prevention Formula' subconsciously while driving. However, there is a tendency for minds to wander and daydream; thus the process stops. By practicing the formula, your mind will stay focused longer and you will have developed an important tool for maintaining mental alertness.

Virtually every driving situation has potential hazards and in order to protect yourself it is not enough to just know what you are doing. You must also be aware of what is developing around you. The actions of others, the condition of the road, parked cars, visibility, *etc.*, are all part of that process.

Far too often we are lulled into a state of relaxed well-being when we drive thus our attention wanders. In this state we can easily miss the detection of a hazard. When this happens, an easily avoided problem can rapidly become a full-blown emergency.

It is important that you remain alert and consciously search for hazards as you drive. If you consciously practice hazard detection, you will soon develop the habit and become an 'automatic hazard detector'.

ELEMENTS OF DEFENSIVE DRIVING

In order to successfully avoid collisions, the professional operator requires a high degree of knowledge, alertness, foresight and must always exercise good judgment and skill.

Knowledge

A great deal of knowledge about driving can be acquired through experience, but experience is not necessarily the best teacher as bad habits develop and are hard to break. Traffic safety experts are convinced that knowledge of driving should be acquired through a planned program, such as the one you are taking now.

Alertness

Alertness is the habit of keeping one's attention focused on driving and free of distractions. It includes the attitude of detecting hazards and the ability to avoid collisions. Being fully alert requires the use of vision, touch, smell and hearing to receive and interpret various messages. Mental alertness can be developed consciously and is improved with practice.

Foresight

This is the ability to anticipate and prepare for most eventualities. It consists of being able to assess traffic situations as far ahead as possible, to anticipate how they are likely to develop and to decide whether or not they will present a hazard.

Judgment

Good judgment implies recognition of the alternatives present in any traffic situation and the ability to arrive at a wise choice in time to avoid a collision. It is dependant on knowledge and experience and also intangibles such as common sense and intuition.

Skill

Skill is the ability to manipulate the controls of the vehicle to successfully perform basic traffic manoeuvres such as turns, passing, reversing, parking, *etc.* There is a correct way to do each of these. Skill is developed through learning how do them the right way and then doing them the right way every time.

Good Habits

This means that you have consciously practiced the correct procedure to the point where you subconsciously do it right every time. Correct performance has become instinctive. Good visual habits, for example, are one of the most important tools available to the defensive driver.

THE PERFECT OPERATOR

You may be safe in thinking that perfect driving is not possible, but let's consider what perfect driving means. The professional operator knows that perfect driving is achieved by having one perfect trip at a time.

A perfect trip is any trip characterized by the lack of one major trait: ***Errors***. Error avoidance is the key to perfect driving.

There are several types of errors that may occur on any given trip.

Collisions

Both in terms of human lives and dollars, this can be the most serious error.

Traffic Violations

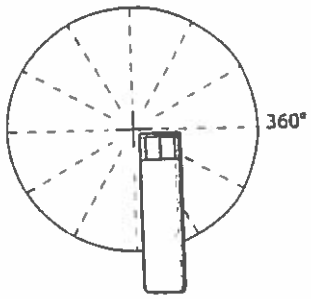
To have a perfect trip you must obey the law and drive defensively. A safe and professional operator has thorough knowledge and understanding of all traffic laws and general rules of safe driving.

This also entails understanding the rules established by your employer under company and/or school board policy. The rules of the road may also change from time to time and it is expected that a professional operator will know and be aware of these changes.

Operator's driver licence handbooks are available from any Motor Vehicle Registry office.

ZONE OF AWARENESS

Many drivers are content to limit their awareness to the things they can observe by looking through the windshield, with an occasional glance in their mirrors for good luck. A defensive operator, however, realizes a hazard can develop from any angle and that zone of awareness must include a full 360° circle around the vehicle as well as above and below the vehicle.



While most hazards will appear from either the front, rear or side of the vehicle, many operators have lost control by not being aware of the road condition under their bus. Similarly, drivers have lost the tops of their campers, buses or trailers in parkades or underpasses by not paying attention to hazards above the vehicle. Overhanging eaves, wires or tree limbs may also be a collision point if the driver is unaware.

Remember, the earlier a potential hazard is detected, the more time you have to avoid any problem that develops. Therefore, your zone of awareness should be as wide as possible for the circumstances.

Our zone of awareness contains clues to detect any potential hazards. We can detect these through the use of our senses.

Hearing

The sound of car horns, train whistles, children playing and the sound of other vehicles are all examples of messages we receive through hearing and are indicators of potential hazards.

Listening to the sound of your own vehicle can help you identify maintenance problems that can lead to a collision if left unattended.

To gain the greatest advantage of your hearing as a hazard identifier, you must have unimpaired hearing by not playing the stereo or radio excessively loud and other in-vehicle noises should be kept at a low level.

Feel

As we drive, our bodies are in contact with various parts of the vehicle, our hands on the steering wheel, our bodies in the seat and our feet on the pedals. The vibrations caused as the wheels roll over the road surface are transmitted through the vehicle to our bodies. These vibrations can tell us much about the road surface and how our vehicle is 'holding' the road.

Smell

Can your nose really warn you of a potential driving hazard? The answer is yes! The signals tend to be more subtle and you must learn to interpret with more imagination.

Smell may give the operator early indication of a possible problem with their vehicle such as the smell of hot oil, rubber, or anti-freeze.

Early detection of a vehicle problem allows the operator more time to find a safe location to park and have the problem dealt with.

Vision

Good vision and good visual habits are essential to safe and defensive driving. Vision can change so gradually that it is easy to be unaware of a vision problem until it is too late. Make it a practice to have an eye examination on a regular basis.

There are two interesting facts related to vision that you should be aware of:

- **Speed**

  As your speed of travel increases, there is a corresponding reduction in your peripheral vision. At a standstill, most people, while looking straight ahead, can still see objects appearing to the side without shifting their gaze. This gives us a range of vision covering approximately 180°.

  At highway speeds, this range of vision is reduced so the effect becomes somewhat like driving through a tunnel where you still see straight ahead but your peripheral vision is limited.

- **Steering**

  We tend to steer toward whatever we look at. We use this tendency to help us drive around curves by focusing our gaze well ahead in the direction we wish to go.

  If, however, we were to focus our attention on an off-road object ahead, we would find ourselves gradually turning toward that object and if we did not react in time we would drive off the road. For this reason, it is important to keep our eyes moving, scanning the 'Big Picture'.

DEVELOPING GOOD VISUAL HABITS

Continuously scanning our surroundings on and off the road leads to good visual habits. Specifically:

- focus farther ahead as your speed increases
- in an urban area, view the road ahead one full block
- focus farther down the road in rural areas than you would in urban areas
- focus your gaze approximately 12 seconds ahead of your present position
- scan 360° and shift your gaze continuously; this includes checking your dashboard gauges, seeing if any warning lights have come on, and scanning all mirrors
- at night when meeting oncoming vehicles with bright headlights or headlights on high beam, shift your gaze well ahead and to the right edge of the road
- use the glare reducing setting on your rearview mirror
- keep your vehicle windows clean to reduce glare
- maintain an unobstructed view
- vegetation, buildings, trees, parked vehicles or any roadside obstruction that obscures vision should be treated as a hazard potentially requiring you to stop if necessary, giving you the time to study the situation before proceeding
- be aware that other vehicles in the adjacent lane may obscure your vision
- pay attention to traffic ahead possibly stopping or stopped for a left turn or a pedestrian
- remember that urban driving demands a greater need for attention due to the greater concentration of traffic. Traffic controls, congestion and pedestrian traffic on urban roads makes driving more difficult.

It should make you uncomfortable if you are driving in other drivers' blind spots! Virtually all vehicles have blind areas—even motorcycles. *(Motorcyclists are sometimes limited in how far they can turn their head to look behind them.)* Yet, some drivers habitually change lanes without checking their blind areas for other vehicles. It's a good idea to adjust your position relative to other traffic to stay out of another driver's blind spot whenever you can.

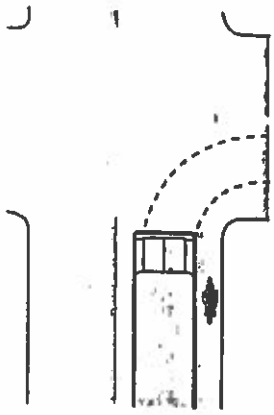
Where are your blind spots? That depends on your vehicle. A car typically has blind areas at the sides near the rear of the vehicle, meaning you cannot see anything in these areas by looking in your correctly-adjusted mirrors.

Other vehicles may be blind to anything that is directly behind. Vehicles in which the driver sits very high may have forward-quarter blind spots - they may not be able to see anything low to the ground in front or to the sides near the front of their vehicle.

Finally, remember that even parked vehicles have blind areas. Children may be playing around parked vehicles. Before you start up and back out of your driveway, take a quick walk around the vehicle to make sure nothing, living or inanimate, is around, under or behind your wheels.

Motorcycles and Bicycles

Due to the size of these vehicles, they can easily be hidden in your vehicle's blind spots and are even quite difficult to spot in a wide-angle mirror. They are far too often only seen at the last moment. Extra caution needs to be taken around motorcycles or bicycles.



Be alert for this situation

There are large blind spots both behind and to the side of large vehicles. The "right turn squeeze" could occur if a motorcycle or bicycle rider is positioned between a large vehicle that is turning right and the curb. In this position, the driver of the large vehicle may not see the cyclist.

DETECTING AND INTERPRETING CLUES

In our zone of awareness by using our senses, we can detect and interpret clues that may lead to collisions.

Parked Vehicles

Driving beside parked vehicles is potentially hazardous because your vision is partially obstructed. Hazards often appear when there is little time or space for evasive action. Three key sources of hazards are:

1. The space between parked vehicles through which pedestrians and animals may suddenly dart into the street.
2. The parked vehicle may suddenly pull out into your path without warning.
3. Occupants of parked vehicles may open their doors without looking first. Positioning your vehicle at least 1½ metres out from a parked vehicle will place it beyond the arc of a door should it suddenly be opened.

Usually there are clues from parked vehicles of impending entry into the lane of traffic:

- exhaust fumes will indicate the engine is running and that vehicle is potentially ready to go
- back-up and brake lights may indicate that a parked vehicle is preparing to enter traffic
- front wheels pointing toward traffic may indicate the vehicle is ready to leave the space or manoeuvring in preparation to leave
- a person behind the steering wheel may indicate a vehicle ready to leave a parking space.

ROAD HAZARD CLUES

Road hazards are those that pertain to the condition of the road itself and fall into four categories:

1. sight distance limitations
2. manoeuvring limitations
3. traction limitations
4. traffic conflict points

Sight Distance Limitations

These are limitations to your vision caused by curves, valleys, hills, buildings, trees, or large parked vehicles, and the following precautions should be taken:

- watch the road ahead for signs indicating a curve ahead
- when approaching a curve, estimate a safe speed of travel (if not posted on a sign) from the degree of curvature and banking
- when approaching a downgrade, identify if the grade is steep enough to require downshifting (Always downshift prior to the beginning of the hill)
- identify the presence of dips, valleys, buildings, trees or large parked vehicles possibly obscuring other traffic or pedestrians.

Manoeuvring Limitations

Driving a large vehicle in certain situations can be more hazardous because more space is required for manoeuvring.

Compensate for these issues whenever you detect:

- narrow or narrowing lanes
- road construction
- gravel or dirt surfaces that have been rutted by the wheels of other vehicles

Traction Limitations

The defensive operator learns through experience to 'feel the road' through their vehicle.

Be aware of road surfaces that have:

- surface irregularities on asphalt and concrete such as potholes, frost-heaves and cracked pavement
- wooden surfaces (such as small bridges) containing cracks, holes and protruding nails
- concrete or metal bridge decks in wet or freezing conditions
- washboard conditions
- oil or grease spills
- snow or ice particularly in shaded areas such as underpasses
- 'black ice' caused by freezing temperatures.

Traffic Conflict Points

Traffic conflict points are those points on a road that require vehicles to merge, intersect or cross paths.

The conflict occurs because two or more vehicles approaching from different directions are competing for the same space on the road. Examples of such conflict points include intersections, acceleration and deceleration ramps on freeways, parking lots, and merging lanes at bridges and hilltops.

Some specific hazards in freeway driving are:

- on an entrance ramp or merging lane, be alert for vehicles stopped or slowing down unexpectedly
- on a long entrance ramp with an acceleration lane that continues on as an off-ramp or deceleration lane, vehicles may change lanes at the last moment in either direction suddenly and without warning.

- when nearing the end of the off-ramp, look for other vehicles that may be stopped or waiting in line at the end of the off-ramp
- when approaching and passing interchanges on the freeway, note vehicles in the deceleration lane that may suddenly swing back into your lane at the last moment, without warning.

HIGHWAY CROSSING

Two-Lane Highway Crossing

Hazards:

- obstructed visibility of oncoming or turning lanes
- vehicles travelling at high speed.

Defensive measures:

- make a full stop
- make sure you have a good, clear view of all lanes before proceeding. Check around your mirrors to ensure they are not blocking the view of another vehicle

Four-Lane Highway Crossing

Same hazards exist as the two-lane crossing above, but allow more time for crossing.

Additional defensive measures:

- avoid this type of crossing as much as practical

In any type of crossing:

- always allow adequate time to cross
- perform at least two good checks in each direction – more if necessary.

DETECTING OTHER DRIVING HAZARDS

It is important that you learn to spot a potential hazard and estimate its seriousness, giving yourself enough space and time to take evasive action if the need arises.

Single Vehicle Hazards

As the name implies, these hazards have been classified as 'single vehicle' because they only involve the motion of an individual vehicle. There are many reasons why another driver may present a hazard to you, such as inattentiveness, loss of control or their failure to communicate their intentions to you such as a failure to signal.

The following clues demand that you give the other driver an extra wide berth:

- frequent lane changes suggests aggressiveness, inattentiveness, indecisiveness, fatigue or alcohol impairment
- frequent speed changes when not required by conditions
- failure to signal intentions
- quick, jerky stops when not necessary as opposed to gradual deceleration
- out-of-province licence plates suggest the driver may be unfamiliar with the area and may stop or change directions unexpectedly. This could also be anyone with an Alberta plate who is not familiar with an area, so always use caution if the driver ahead appears lost or unsure.
- Another driver's failure to adjust to dangerous driving conditions such as icy, slippery roads
- special vehicles such as slow moving vehicles, emergency vehicles or vehicles required to make frequent stops.

Multiple Vehicle Hazards

These hazards are typically formed at 'traffic conflict points' where traffic converges or intersects and on highways characterized by high volume traffic. Due to the high volume of traffic, hazards are frequently compounded as visibility can be restricted by other traffic present. Always be alert and adjust your speed accordingly.

Left Turns

Left turns at controlled intersections are one of the most dangerous driving manoeuvres and account for a great many serious collisions.

They don't have to be dangerous - the dangers can be controlled. The most important thing is to be knowledgeable - and then MINDFUL - of what the dangers are.

When you enter an intersection, the immediate danger is the traffic coming from your LEFT on the cross-street. Look left first, to make sure all traffic is stopping before you enter the intersection, then right, then left AGAIN before you move into the intersection.

At a traffic light, a red-light-runner is going to arrive, on average, within four seconds of the light change. You don't want to be there when this situation occurs.

Pull into the intersection, but leave room for left turning vehicles approaching from the opposite direction to do the same. Some busy intersections have off-set opposing left turn lanes, so that both directions have a good view of the oncoming traffic.

The greatest danger in entering the intersection is the red light runner -- and after the first four seconds that danger diminishes, but never rule out the possibility that someone could still run the red light even after that. Always check left and right no matter how long you've had the green light.

If you are the first vehicle waiting in line to turn left, remaining behind the crosswalk may prevent you and others from making their left turns on that light cycle. This is unnecessary and holds up traffic flow.

Once you're waiting in the intersection to complete your left turn, yield to all oncoming traffic. The law requires the person turning left to yield the right of way to anyone coming straight through. If you do not have a clear view of the oncoming traffic, in all the lanes, then don't begin your turn. When you see that all traffic has stopped, then you can go.

Sometimes oncoming traffic is still blocking your left turn even after the traffic light has changed to yellow or even red. Provided that you entered the intersection legally on the green, you are permitted to complete your turn at the earliest opportunity when it is safe to proceed, **but use caution.**

When waiting to turn left, don't turn your wheels to the left until it is clear to go. If you are rear-ended while you are waiting, your already-turned wheels will steer your vehicle into the path of oncoming traffic -- so keep them straight until the way is clear to complete your turn. Then, complete the turn into the correct lane.

One last hint. If a number of vehicles are waiting to turn left ahead of you and it looks like it will take more than one light cycle to be able to make a left turn, consider continuing through the intersection and make three right turns instead. If you do this on side streets (not private property) it's legal and often quicker when only one or two vehicles are able to complete their left turn on each light cycle.

Other Road User Hazards

Potential driving hazards are increased by the presence of other road users, including pedestrians, cyclists, joggers and animals. In most cases, these other road users won't be out in the main flow of traffic, but their proximity to the road seldom guarantees this. Clues to hazardous situations include:

- Location of the road user relative to the road
  - pedestrians or joggers on the shoulder or sidewalk
  - cyclists travelling on the road edge, shoulder or sidewalk
- Motion of the road user
  - pedestrians running toward the road
  - children playing near the road
  - cyclist approaching from a side road
- Attentiveness of road user
  - pedestrian's vision may be obscured by umbrellas, trees, parked vehicles, *etc.*
  - driver stepping out from a parked vehicle without first checking for traffic
  - child chasing a ball
  - pedestrians talking to each other or listening to music on MP3 player.
- Lack of control
  - a motorcyclist turning on a slippery surface
  - child on a bicycle.

It is important to realize the various types of hazards discussed above have been categorized for the purpose of presentation only. In an actual driving situation, they frequently occur in combination, requiring split-second thinking and action on your part.

COLLISION AVOIDANCE

Commentary Driving

One of the best methods of hazard detection you can practice is 'commentary driving'. Commentary driving is a technique where the driver actually verbalizes (talks about) their main observations and interpretations of the events developing around and ahead of their vehicle. With regular practice, 'real observation' will become habit and you will not find it necessary to speak out loud. Silent but 'active' observation is just as effective for collision avoidance.

An example of commentary driving:

"Signal light is stale green; oncoming car signaling left; walk light just flashed off; pedestrian crossing."

Commentary driving is extremely useful when practiced because:

- it creates an awareness of the vast number of things a driver should be watching for and thinking about
- it assists in the development of good visual skills and helps the driver resist common distractions
- if done aloud with an instructor, it helps the instructor evaluate progress and instructor effectiveness. It also shows the instructor where the operator's attention is focused and how far ahead the operator is looking.

You can use commentary driving with the *Steps For Avoiding Hazards*, as mentioned earlier: Identify the hazard, predict what may happen, decide on a course of action and execute your action plan.

Let's follow one example all the way through the process of commentary driving:

Identify:
"Speed is 50 km/h, cars are parked on both sides of the street, no other vehicle traffic is in sight front or rear, there are no side streets, children are playing ball one half block ahead on the right and road conditions are good."

Predict:
"Child could run out onto road from behind parked cars."

Decide:
"If the child runs out from the right, sound horn, apply brake. Worst case scenario, hit the parked car rather than the child."

Execute:
"Reducing speed now, preparing to brake if necessary."

This example is fairly simple. Imagine how this situation would have been complicated if there were oncoming traffic and a car behind you was tailgating and attempting to pass. Practicing this approach will better prepare you when a real emergency arises.

Two-Vehicle Collisions:

To this point, we have discussed how to detect hazards and given you a few suggestions on how to minimize them.

We will now discuss how to avoid the two-vehicle collision as it is usually the most serious of all collisions.

Positioning of the Vehicles Before the Collision Occurs:

There are only six positions that another vehicle can take in relation to yours prior to a collision.

The six positions are:

1. vehicle ahead
2. vehicle behind
3. oncoming vehicle
4. vehicle approaching intersection or at an angle
5. another vehicle passing you
6. you passing another vehicle.

By studying these six positions, learning the hazards associated with each and the defenses against them, you can avoid being in most two-vehicle collisions.

This section will study those types of collisions as well as the mystery crash, and run-off-the-road collisions.

1. Collisions With The Vehicle Ahead

Why do collisions with the vehicle ahead occur? There could be a variety of reasons, however, they generally all boil down to *'following too close'*.

When required to stop you must always be able to stop before running into the vehicle ahead. When driving a larger vehicle, such as a school bus, it will take longer to bring your vehicle to a full stop than it will be for the motorist in front of you.

Being a good 'follower' is one of those key attributes that separates a professional operator from the average driver.

In order to defend against this type of collision you must:

- stay alert, and
- allow a safe following distance.

For cars and smaller vehicles, the two second rule can apply. However, larger vehicles, such as school buses should not be closer than four seconds to the vehicle ahead.

The four second rule works as follows:

- watch the vehicle ahead of you pass a stationary object (such as a power pole)
- count to yourself:
  - *one-thousand-and-one*
  - *one-thousand-and-two*
  - *one-thousand-and-three*
  - *one-thousand-and-four*
- if you pass the same object before you finish counting, you are following too close. Slow down a bit and increase your following distance.
- Repeat the count process until you are at least four seconds behind the vehicle ahead.

There are times when your following distance should be increased to more than four seconds, such as when you are following:

- oversize vehicles that obscure your vision
- dangerous goods carriers
- vehicles that stop frequently, such as delivery vans, other school buses, *etc.*
- two-wheeled vehicles such as motorcycles or bicycles
- vehicles being driven erratically
- emergency vehicles

Also increase following distance to more than four seconds in poor road conditions and under conditions that reduce visibility such as fog, snow and smoke. Also leave more space in areas where traffic intersects, merges, or diverges.

Few drivers are fully aware of the total stopping distance or time it takes to bring a vehicle to a full stop. Consequently, they make errors in their decisions which, in turn, may result in a collision with the vehicle ahead. Many drivers following too close can result in a "domino" effect crash involving a large number of vehicles.

Don't be a Domino

2. Collision With The Vehicle Behind

Tailgaters can crate hazardous situations for you. Be aware of any vehicle following you too close and allow or encourage them to pass if possible. If you are already driving at the maximum posted speed limit, slow down a little to see if the tailgater will pass. If the tailgater stays behind you, increase your following distance from the vehicle ahead to give yourself more time to react should you have to stop suddenly.

3. Collision With An Oncoming Vehicle

One of the first rules of the road we learn is that you are expected to drive on the right side of the road. There are times, such as passing another vehicle, when it is permissible to venture to the left side. But these are specific instances only. If everyone carefully followed this rule of staying to the right, there would not be any head-on collisions.

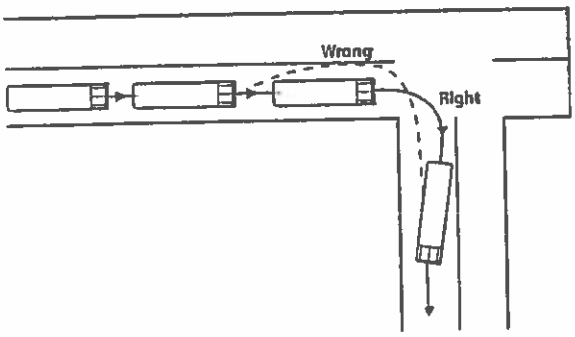
Circumstances do arise in which you or an oncoming vehicle will cross the centre line and you may suddenly find yourself in the path of disaster. Some of these circumstances are driver caused, but some are not.

Being consciously aware of the reasons why a driver would venture into the wrong lane makes it more likely that you will be able to anticipate and avoid a potential head-on collision.

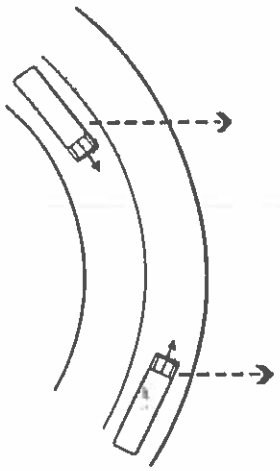
Other than when passing another vehicle, there are four reasons a driver could be on the wrong side of the road:

A. **A problem in their lane.** Trouble in a driver's own lane such as a construction barrier, animal, pedestrian or bicycle may cause a driver to swing left in order to avoid the problem.

B. **Faulty driving manoeuvres.** Through an error in judgment a driver may enter your lane. For example: making a wide right turn (which may be necessary for larger vehicles), or misjudging the distance required to pass a vehicle. If you drive a vehicle with an extended wheel base, take any additional space needed to complete the turn on the street being entered.



C. **Centrifugal force on curves.** Centrifugal force acts on your vehicle by trying to keep it going in a straight line when negotiating a curve. The outward arrows in the following diagram illustrate the centrifugal force acting on the two vehicles.



If the driver on the inside of the curve allows centrifugal force to push their vehicle across the centre line, a sideswipe or head-on collision could result.

What is the best way to negotiate a curve?

Slow down before entering the curve. On right curves, keep the front of the vehicle close to the right side of the lane and closely watch the right mirror for the position of the rear of your vehicle. On left curves, keep the front of the vehicle to the right side of the lane, watching the left mirror.

Slow a bit before the curve and then gently apply power to the wheels after entering the curve. When you apply power to the wheels, you introduce a force in a different direction from the centrifugal force. The result is greater control.

D. **Loss of Control.** Operators can lose control of their vehicles for many reasons, including:
   - right wheel dropping off pavement edge and the operator overcompensates in making the recovery
   - loss of visibility, centre line obscured or worn away
   - falling asleep at the wheel, drug or alcohol impairment
   - tire blowout, skidding on a slippery surface
   - poor road conditions, potholes
   - poor judgment

In these instances what can you do to avoid a head-on collision? The next points have been developed for this purpose.

Read The Road Ahead

Be aware of oncoming traffic and try to anticipate what problems the oncoming driver may encounter causing that vehicle to cross the centre line and enter your lane.

Ride To The Right

Don't crowd the centre line. Leave plenty of room. If there are two lanes available to you going in the same direction, use the right lane as a matter of preference. In urban areas, the right lane generally moves quicker because vehicles turning right normally cause less delay than those turning left.

Reduce Speed

When you see a threat developing with an oncoming vehicle in your lane, reduce your speed immediately. This means slow down right away and if necessary, sound your horn and flash your lights to let the oncoming vehicle know you are there. By quickly slowing down you allow them the extra time they may need to get back into the proper lane and avoid a collision. Continue slowing down and prepare to stop if necessary until the situation clears.

Ride Right Off The Road

If you have followed the first three steps and the vehicle still keeps moving in your direction, you have only one out left – to ride off the road to the right. This option will, in almost all cases, be better than a head-on collision.

If a collision is unavoidable, try to hit the object or vehicle at an angle rather than head-on to lessen the impact. Never try to out-guess the other driver by pulling to the left.

4. Intersection Or Angle Collision

About one-half of all two-vehicle collisions occur at intersections. This is largely due to the traffic conflict that exists at intersections, both vehicular and pedestrian. Be prepared for the unexpected.

Intersection hazards include:

- stale green lights that have been visible for a block or two may change suddenly to yellow. Also watch for pedestrian signals that have changed to 'wait' as an indication of a green light about to change to yellow.
- vehicles in the left lane waiting behind vehicles that are waiting to turn left may become impatient and without warning or signal, swing over into the right lane to get by
- vehicles that are sitting at a green light rather than continuing on may be waiting for other vehicles or pedestrians to clear
- drivers making turns may signal and move into the intersection and then stop unexpectedly even when no traffic or pedestrians are blocking their path.

Negotiating Intersections

Know

Expect the unexpected. Decide in advance what you need to know at intersections. Your indecision can confuse other drivers and cause a collision. Be prepared to yield at all times.

Show

Signal your intentions well in advance and be in the proper lane.

Slow

Slow down gradually. An intersection is not a place for speed. Remember at 25 km/h you cover over seven metres per second and may travel five metres just moving your foot from the accelerator to the brake.

Go

Proceed through the intersection without hesitation, when safe.

It is important to keep in mind that other uncontrolled traffic access locations are considered intersections as well, such as side roads that enter onto highways, driveways and alleyways. The distraction from pedestrians, cyclists and animals are additional hazards.

At all intersections:

- never assume the other driver will yield to you where required. Approach each intersection with your foot off the gas and covering the brake
- as you approach the intersection, look left, then right. Prior to going through the intersection check again left then right. If objects like parts of your vehicle or your mirrors block your vision, check carefully around them before you proceed
- proceed only when safe to do so, even if you have the right of way. You can't count on the other driver always obeying the rules
- It is never a good idea to change lanes in an intersection
- never pass a vehicle that is stopped at an intersection until you are sure it is not stopped waiting for a pedestrian to cross. Never assume a vehicle stopped at the intersection and signaling left is only waiting for oncoming traffic to clear. There may be a pedestrian crossing as well. *It is illegal to pass a vehicle that has stopped to allow a pedestrian within a crosswalk (marked or unmarked) to cross the road.*

Crossing Intersections:

In an urban area the following procedure will help you travel safely through each intersection and will get you into the habit of looking fully around your vehicle.

- depending on visibility, take your foot off the accelerator and cover the brake if needed. Check mirrors and be aware of traffic following you. Prior to entering the intersection, check left then right for traffic indicators and controls, pedestrians and other vehicles. Make certain no vehicle approaching is about to turn left in front of you. If clear, check to the left and right once more and proceed through the intersection when safe
- once past the intersection check mirrors again for any change in traffic patterns behind you. If you plan to turn at the next intersection, position yourself so you are ready to turn. Look for pedestrians that may be crossing ahead
- between intersections, watch for traffic changing lanes or entering your lane from alleys or driveways
- when approaching the next intersection repeat the procedure.

With any intersection, if your visibility is obstructed for any reason, you may be required to stop prior to proceeding.

5. Collision Caused By Another Vehicle Passing You:

As a school bus operator, you quickly become aware that most motorists would rather drive in front of you than behind you and some of these drivers will take unnecessary risks such as:

- tailgating – staying too close behind your vehicle and darting out to make a pass with limited visibility
- following the leader – a series of vehicles passing you at the same time, even though the second and subsequent vehicles have extremely limited visibility.

There is the potential here for three types of collisions:

- the sideswipe
- the cut-off
- being run off the road.

As a defensive driver, you can do much to alleviate the potential hazards and make it easier for other vehicles to pass.

If the pass appears to be safe, without creating a hazard:

- maintain your lane position, either in the centre of the lane or slightly to the right to allow the passing vehicle extra clearance
- maintain or reduce your speed, avoid a tendency to accelerate.

If the passing vehicle cuts in too quickly after the pass, slow down to ensure a safe following distance. Depending upon the situation, braking may even be necessary.

If the passing vehicle attempts to abort the pass and attempts to get back in line behind you, you may need to accelerate quickly to allow them to pull back into the lane safely.

Section 23 (b) of the **Use of Highway and Rules of the Road Regulation** under the **Traffic Safety Act** states the following:

23. Notwithstanding anything in this Regulation, a person driving a vehicle shall not drive the vehicle so as to overtake and pass or attempt to pass another vehicle

(b) by driving in a parking lane

Note: *In the above definition "parking lane" means the shoulder of a provincial highway to the right of the solid white line.*

6. Collision Caused By You Passing Another Vehicle:

Think about passing before you do it. Every time you find yourself in a position to pass you must ask yourself:

- What will I gain by passing?
- Is it worth the risk?
- Is the pass necessary?
- Will I have to exceed the speed limit to pass?

By consciously asking yourself these questions before you pass, you may find, in most cases, you don't have to pass after all.

Passing also tends to increase fuel consumption significantly. There is nothing wrong with passing another vehicle, so long as it is done where and when it is safe to do so and can be completed without exceeding the speed limit.

1. **Is this pass necessary?**

You may not need to pass at all and rather than take a chance, and break the tempo of traffic, it might be better to continue along as you are.

Before attempting any pass always ask, "Is this pass necessary?" If the answer is no, then don't pass.

2. **Do not pass if the vehicle ahead is:**

- signaling or otherwise indicating a left turn
- changing lanes
- decelerating suddenly
- passing children, cyclists or animals
- being passed by another vehicle. Wait until the lead vehicle has finished passing, your visibility is restored and an adequate gap is present
- being driven by a driver who appears inattentive.

3. **Stay back and maintain a safe following distance**

The closer you get to the vehicle ahead, the less you can see. Tailgating, in order to pass, cuts down on visibility and the lead vehicle may suddenly slow down or stop leaving you in danger of being involved in a collision with the 'vehicle ahead'.

4. **Check ahead**

If there is an oncoming vehicle, you need to decide if you have the time and passing distance you need to get into the left lane, pass the vehicle ahead and get back into the right lane well before this vehicle reaches you.

5. **Check traffic behind**

Use a mirror check and shoulder check to determine whether or not someone is attempting to pass you before you attempt to pass the vehicle ahead.

6. **Accelerate**

Build up to an adequate speed to ensure that a safe pass is possible. You can still change your mind at this point.

7. **Signal left**

Use your signal lights to warn traffic behind of your intent to pass. An attentive driver in front of you will also see your signal and be alerted to your intent to pass. Check your left mirror and shoulder check to the left.

8. **Move Left**

Now you are really committed. You are on the left side of the centre line and it is your responsibility to make a safe pass. Ensure you have centered your vehicle in the passing lane and that you have provided sufficient clearance for the vehicle being passed. Remember that it is illegal to exceed the speed limit when passing.

9. **Check Traffic Behind**

Signal your intention to move back into the appropriate lane, shoulder check and mirror check. Make sure you don't cut-in too close in front of the vehicle you just passed. This is especially important since your school bus is a long vehicle and it may be difficult to judge when you have sufficient room to safely return to your lane.

10. **Move Right**

Move smoothly back into your normal driving lane to the right of the centre line.

11. Cancel Your Signal

Check to make sure that you are travelling at a proper and safe speed.

Other Passing Situations:

At times you may also be required to pass in other circumstances.

Passing parked vehicles:

- be prepared for the unexpected, such as a vehicle's door suddenly opening, a child darting out from between the parked vehicles or the vehicle pulling out without warning. Always leave enough space between your vehicle and parked vehicles (1.5 metres).

Passing pedestrians and cyclists:

- yield to pedestrians at all times
- provide maximum clearance when using the same road as cyclists
- when passing cyclists, use your horn only when necessary.

Passing animals:

- slow down when entering animal crossing zones or when noticing animals on or along the road. Pass animals at reduced speed and stay alert. A startled animal may suddenly dart across the highway without warning
- prepare to stop or take evasive action if the animal approaches the road.

Note: *If swerving your vehicle to avoid hitting an animal could jeopardize the safety of yourself, your passengers or other motorists, do not swerve.*

THE MYSTERY CRASH

The 'mystery crash' is a collision that is difficult for police authorities to determine a cause. It is the type of collision in which the driver, for some reason, loses control and runs off the road into an embankment, tree, abutment or other fixed object. This type of collision has a high mortality rate.

Although stemming from a variety of causes and contributing factors, generally the cause of the mystery crash is a loss of driver control. By control, we usually mean the driver's ability to steer and to stop their vehicle. Loss of control is often due to driving too fast for prevailing conditions.

Driving too fast for prevailing conditions sounds like a nice catch-all, but what it really means is too fast, with respect to one or more of the following six conditions.

Light Conditions

- over-driving your headlights at night. The average headlights are only capable of illuminating the highway for approximately 100 metres
- headlight glare at night. The human eye takes about seven seconds to recover from the headlight glare
- sun glare in the morning, late afternoon or on a sunny winter day
- a windshield that is difficult to see through from dirt, bugs, snow, ice or condensation.

Weather Conditions

- driving rain, snow, sleet and fog may contribute to loss of vehicle control.
- reduce your speed, drive with your headlights on and, if conditions get bad enough, don't drive at all.

Road Conditions

Curves, crowns, dips and inclines all limit the speed at which you can drive your vehicle safely.

Traffic Conditions

An operator can be driving too fast for conditions when not:

- looking far enough ahead
- anticipating traffic situations
- using good judgment
- avoiding getting into tight spots in the first place

Vehicle Conditions

- bad tires blowing out at high speeds
- bald tires unable to grip the road
- defective brakes

Driver Conditions

- driving requires both mental and physical sharpness. Be alert for anything that could distract you or for the onset of fatigue that could cause you to fall asleep behind the wheel.
- driving demands that you keep your eyes moving – scanning the road ahead, to the left and the right of the road. Every few seconds, check your review mirrors to be aware of any vehicles that may be following or trying to pass
- driving under the influence of medication, illegal drugs or alcohol may affect your ability to drive safely.

Keep in mind these points about the 'mystery crash':

- it can happen to anyone – even the professional operator
- it is a very severe collision, fatalities are frequent and injuries are serious
- it is the most preventable type of crash because it involves only you maintaining control of your vehicle and yourself
- speed too fast for conditions is most often the cause of the mystery crash. Keep your speed down, start slowing down sooner and always adjust your speed to conditions of light, weather, road, traffic, vehicle and driver
- be sure of your own physical and mental fitness to drive. You cannot control your vehicle if you are not in control of yourself.

There are no magic formulas to avoid these types of collisions, but the point of defensive driving is to do everything you possibly can to prevent being involved in any type of collision.

Be alert and aware of potential hazards. Be sure of your own physical and mental state along with practicing the *basic collision prevention formula*. These precautions will diminish, if not prevent, the chance of you being involved in a collision.

EMERGENCY DRIVING TECHNIQUES

Skid Control

The best way control a skid is to avoid it in the first place!

True professionals drive so seamlessly that you do not feel anything when they shift, turn or brake. The key is to plan ahead, watch carefully and slow down, especially if you are unfamiliar with the road. Skids almost always happen because the vehicle was travelling too fast for conditions.

Be careful when conditions might be slippery, since this is when most skids occur. But no matter what the road's surface condition is, skids are caused by driver error.

Try to turn too sharply, enter a turn too quickly or use excessive acceleration or braking and you'll get the chance to practice skids whether you want to or not!

A number of factors could cause a vehicle to go into a skid. During a skid, the tires lose proper traction with the road surface. The normal means of controlling the vehicle are affected – steering, braking, decelerating and accelerating. You must be able to quickly detect a loss of traction in time to maintain or regain control. Loss of traction may include:

- skids caused by tire failure, resulting from under inflation or sudden deflation from a blowout
- front wheel skids resulting from faulty brakes, excessive acceleration or speed on curves, rough or slippery surfaces
- hydroplaning resulting from travelling too fast on a water covered road
- skids caused by the oily film that develops on the road after the first few minutes of rain

Once you lose traction and your vehicle goes into a skid, the correct way to regain control is through steering and braking properly.

Steering

Turn your wheels in the same direction the rear of the vehicle is skidding. Be careful not to over-steer. You will be able to feel when the vehicle regains traction. Then, straighten the wheels.

Frequently a skid in one direction is followed by one in the opposite direction (often caused by over-steering while trying to correct the first skid). As the vehicle fishtails in the opposite direction, steer in the direction of the new skid.

Braking

ABS (anti-lock) brakes have been around awhile, but there are still drivers who have not learned what they are, how they work and how to use them effectively. Most of us don't get the chance to properly practice the skills required to deal with skids or loss of control situations.

Don't "pump" ABS brakes

Emergency braking with non-ABS brakes requires a sensitive touch on the brake pedal, using a technique called "threshold braking." Threshold braking is what some people confuse with the practice of "pumping the brakes." But that's not really what it is. Awkwardly pumping the brakes with no "feel" for what the wheels and brakes are doing is counterproductive in a situation where maximum braking effort is needed.

Threshold braking means applying brake pressure right up to the point of almost locking the wheels (skidding), backing off just enough to prevent the skid, then constantly adjusting throughout the stop to keep the braking effort right at that point. This is not easy. You have to acquire a "feel" for it, literally. What works one millisecond won't work the next, and you have to be quick enough on the pedal to stay on the edge of just avoiding a skid, without actually locking your wheels. Once mastered, the technique will stop you faster than any other way.

Threshold braking is what ABS brake systems do for you. Computer-controlled sensors at each wheel "feel" when that tire is about to slip, and lessen the brake pressure at that wheel to keep the skid from occurring -- hundreds of times a second.

With ABS brakes, you don't lose control and go into a skid, and therefore you don't lose your ability to steer. This is the important part. In a panic stop with ABS brakes, you can steer around whatever it is you are trying to miss -- whether it's traffic cones or something else, like a car -- or a child.

Remember this: if you try to pump ABS brakes, they will not work. Pumping ABS brakes defeats the computer's efforts to sense a wheel skid. If your vehicle has ABS brakes, when you need to stop in a hurry, press the brake hard and hold your foot on the pedal no matter what it feels or sounds like. ABS brakes pulsate, they rattle, and they make noise – but that's normal – they're doing what they are supposed to do.

Do not release pressure on the brake pedal on a vehicle with ABS brakes until you no longer need to brake.

As a suggestion go to an empty parking lot somewhere, and stop hard enough to activate your ABS system. You'll then know what it feels like before you really have to use it. Doing so might save your life or the life of someone else.

Tire Blowout

Equally as frightening as going into an uncontrolled skid is a tire blowout.

If one of your front tires blows, there will be a strong pull in your steering towards the side with the blowout.

A back tire blowout may or may not cause the back end to swerve or 'fish-tail'.

A flat tire acts as a brake and the bus will pull hard to that side. You will have to grip the wheel firmly to maintain steering control.

When a blowout occurs:

- grip the steering wheel firmly and steer your vehicle straight down the centre of your lane
- DO NOT apply the brakes immediately
- remove your foot from the accelerator, if the vehicle starts to skid, follow skid procedures
- if a quick stop is required to avoid a collision, initiate threshold braking
- activate the right turn signal, move right slowly, to the shoulder or edge of the road and stop. Watch for soft shoulders that could make control of your vehicle more difficult
- activate hazard warning lights.

Loss of Brakes

You are driving down the highway, you step on the brake pedal to slow down or stop – and there is no response. This is definitely an emergency situation.

With a loss of brakes, the operator should:

- pump the brake pedal. If there is any resistance at all, you may be able to work up enough pressure in the brake system to activate the brakes
- downshift to the lowest gear possible. If the way ahead is clear, allow the engine compression to slow you down and stay on the road. Try to slow the vehicle down more by gradually applying the park brake but be careful not to lock the rear wheels
- as you slow down, select a path for leaving the travel portion of the road and bring the vehicle to a stop on the shoulder or as far to right as practical
- If you must leave the road quickly to avoid a collision, select the path that will most likely minimize injury and property damage, in that order. Look for something to sideswipe, like a roadside bank, snow bank, guardrail, even parked cars – anything that will slow you down. If you must go into a ditch, do so at an angle to reduce the chance of a rollover.

Loss of Visibility

Several things can happen to cause a sudden loss of visibility – your headlights could fail, your hood flies up, mud and slush gets splashed on the windshield, *etc.* Suddenly you can't see where you are going and you must attempt to stop as quickly as practical before losing steering control or hitting something.

What can you do in each situation?

If your headlights fail:

- immediately hit the dimmer switch to see if the high-beams work
- activate your right-turn signal
- slow your vehicle quickly but safely. The idea is to reduce your speed before a slight steering error results in a collision
- carefully steer out of the traffic lane and stop at the side of the road in as safe a location as practical
- activate your hazard warning lights and place warning devices on the road as required by law

If your hood flies up:

- look out the left and right windows to keep your sense of direction and road position
- apply brakes moderately
- activate your right-turn signal
- steer out of the traffic lane and stop in as safe a location as practical
- activate your hazard warning lights and place warning devices on the road as required by law

If mud or slush is splashed on the windshield:

- turn on wipers and washers
- look out side windows and apply brakes moderately
- if the windshield wipers have failed or you have no washer fluid, activate right turn signal
- pull over as far as practical out of traffic and stop
- activate hazard warning lights. If vehicle will remain stationary more than momentarily, put out warning devices on the road as required by law.

Emergency Evasive Action

When you suddenly see an obstruction or potential hazard such as a pedestrian, ball, another vehicle, construction barrier, *etc.*, in your immediate path, you must take evasive action to avoid a collision.

Evasive action to avoid a collision is simply the exercise of your fundamental driving manoeuvres under conditions of stress, limited time, space and distance. You must decide which of these evasive actions is appropriate:

- controlled emergency braking
- quick steering, with or without braking
- leaving the paved portion of the road both with or without roadside hazards present

For effective evasive action, you must resist the urge to always just immediately slam on the brakes . Generally drivers tend to apply the brakes at the first sign of trouble. While effective in many instances, if your vehicle is not equipped with anti-lock brakes, hard, sudden braking could lock the wheels and cause loss of control, thereby reducing your chance to avoid a collision.

Deciding that braking is your best option will depend on how fast you are going, how far away the object is, how good your tires are and whether the road is wet or dry.

Since this is an emergency situation, you will not have the time to think about your choices for very long. If it's not immediately obvious that you can stop in time, you must choose to steer your vehicle in an alternate path.

At a glance you must assess your escape path for the following:

- is the escape path free of hazardous obstacles?
- are clearances sufficient for a vehicle ?
- will an off-road surface still permit steering control?
- is the path going to remain clear or will it be occupied by someone or something else by the time you get there?

Remember, if you focus only on the obstruction, you will be unable to assess your best escape path. Look to where you want to go, taking in the 'big picture'. The size and weight of a larger vehicle limits its ability to swerve sharply to avoid an object or to leave the pavement with any great amount of control. Overturning is always a danger, especially when your wheels leave the pavement and are in soft ground.

Steer firmly and as gradually as possible to clear the obstruction. Use controlled braking. Where a collision is unavoidable try to:

- avoid a head-on collision. Colliding at an angle reduces the force of the impact
- avoid hitting pedestrians. If you have a choice, it's far better to hit inanimate objects than people.

ENERGY SAVING DRIVING TIPS

Attitude

The right attitude is essential for safe and economical driving. When emotions are running high, your judgment can fail you and you may not notice otherwise apparent, even obvious dangers. If you find yourself driving while emotionally stressed or upset, it is important that you pull over, take a few deep breathes and calm down, before something happens that you might regret.

Don't let the error that another driver commits be the reason that you lose control and possibly be involved in a serious collision. All too many collisions occur when a driver is mad, upset, stressed, or distracted in some way. **Try to keep your attitude rational, calm and positive.** This is all part of being a 'professional operator'.

ROAD RAGE

As motorists, we have almost all found ourselves in unpleasant situations involving abusive gestures or language from another driver who takes issue with how we drive. Anxiety and frustration can quickly provoke an aggressive or careless driver, who tailgates, speeds, fails to yield the right of way among other behaviours.

Aggressive driving behaviour may lead to incidents of road rage where motorists have been threatened and/or subject to retaliatory actions by angry motorists.

If people drive responsibly they will reduce the chances of conflict on the road and help make our roads safer.

Experts recommend the following tips to help avoid road rage conflicts:

1. Plan your route in advance. Some of the most erratic and inconsiderate driving occurs when motorists are lost.
2. Make a conscious decision not to take your problems with you when driving.
3. Combat the warning signs of stress by getting fresh air and breathing deeply and slowly.

4. Avoid heavy meals which tend to make a person drowsy.
5. Drive in a courteous and considerate manner. Give way at busy intersections and where traffic lanes merge.
6. Don't compete or retaliate. If someone's driving annoys you, don't try to 'educate them'. Leave traffic enforcement to the police.
7. Don't take other driver's mistakes personally.
8. Avoid honking your horn unless absolutely necessary and, if you must, tap it lightly.
9. Say, "Sorry" if you make a mistake. An apology can reduce the risk of conflict.
10. If you are being physically threatened, stay in the bus and secure the doors. If you have a cell phone, call the police or use the company's two-way radio to have the police come. Use your horn and lights to attract attention.
11. If you think you are being followed, drive to a police station, bus yard or school.

(Borrowed from Transport Canada, 2001)

Safe, Smooth Driving

You use energy to accelerate and gain momentum; you waste energy when you brake to slow down or stop. Looking ahead 12 seconds down the road at the traffic situation and maintaining a four second following distance between vehicles gives you the necessary space to slow down, accelerate or change lanes safely and smoothly.

The objective is to try to minimize speed changes by being in harmony with the traffic tempo and, in urban areas, in sync with traffic lights.

Reduce Speed

As speed increases, so does the potential for collisions and fuel consumption goes up.

Tire Pressure

Keeping tires inflated to their recommended pressure will result in safer, longer tire life as well as greater safety while driving.

Shifting Gears

Get into high gear quickly. An automatic will shift earlier if you reduce pressure on the gas pedal as you gain speed.

With manual transmissions, shift at an engine speed just high enough to permit progressive upward shifting (near the RPM for peak torque). Don't rev the engine to peak RPM between shifts.

Avoid Excessive Idling

Ten seconds of idling uses more fuel than restarting your engine.

Two ways to manage idle time

1. **The driver** knows how long the engine should run before and after a trip for correct engine operation and prevention of unnecessary fuel use
2. **The vehicle's computer** - Some modern engine monitoring systems automatically shut-down the engine after a preset idling time

Excess idling increases:

- fuel costs
- engine wear
- fuel emissions

SERIES 5.2: Just ASK: Communicating With Your Passengers

INTRODUCTION

operators, owners and passengers have identified communication as their number one priority.

Two simple rules:

- see the person first, not the disability
- never assume anything.

The same disability can affect people in different ways at different times. Above all, be patient and courteous, and understanding of your passengers' needs.

Operators need to recognize that there is a difference in how we work with and transport passengers with disabilities. Policies may be the same, but the abilities of the passengers with special needs may be unique and very different.

The *Handi-Bus Operator's Handbook* published in 1995 by the Calgary Handi-Bus Association offers a formula for customer satisfaction.

Attitude + Skill + Knowledge (ASK) = Satisfaction

In other words, ASK your passengers what you need to know. The handbook also includes the following general guidelines to use in working successfully with your passengers. They are reprinted here with minor changes through the kind permission of the Calgary Handi-Bus Association:

- take time to discover each person's method of communicating. Some people, for example, may respond only in writing or by sign language. The general rule is to ask if there is anything you need to know and to inform the person what you are doing before you do it
- have respect when talking with a person who has a disability. Speak directly to that person and try to attract their visual and hearing attention at the same time. Do not overlook the person with a disability by asking a companion for information, as if the person with the disability was not present
- call a person by their first name only when extending that familiarity to all others present
- be patient, attentive and encouraging when talking to a person who has difficulty speaking. Do not correct or speak for the person. When necessary ask short, simple questions that require short answers, a nod or shake of the head. Speak clearly in a natural tone of voice
- listen carefully and repeat words you have understood. If you have not understood something, say so. Never pretend to understand if you are having difficulty doing so. Repeat what you do understand. The person's reaction will guide you to understanding. You may need to repeat several times what you are trying to communicate. Try to determine whether the person has understood you
- be patient and realize that it might take extra time for a person with a disability to get things done or said. Let the person with the disability set the pace
- when talking with a person using a wheelchair or mobility aid for any significant period of time, place yourself in front of them, at their eye level, to spare both of you discomfort

- never assist a person using a wheelchair or mobility aid without first telling them what you are doing. Even if you are aware of what must be done and can easily see what is going on, do not assume that the other person also knows. Often they are not aware because they look forward and can be surprised by sudden movements
- offer ambulatory people assistance when it looks as though it might be needed, but wait until your offer is accepted before you help. Listen to any instructions the person may want to give. Do not insist in helping if the person refuses help, but stay close by and be ready to assist if necessary
- do not take wheelchairs, crutches or other mobility devices away from passengers unless they have indicated that they want them out of the way. It is important that the passenger is settled before moving the mobility device
- when assisting passengers with vision impairment, do not grab them. Identify yourself verbally, and then offer to help. If the person carries a cane in the right hand, you should offer your right arm so he or she may hold it with their left hand. Let the individuals allow you to guide them. Do not rush. Keep the person informed about where you are. Tell your passengers with visual impairments about starts and stops, turns, steps, and any other details of the route. Be sure to let them know when you are leaving them. Do not touch or in any way distract a service dog, unless you have the passenger's permission
- when assisting passengers with a hearing impairment, you should gesture with your hand or touch them lightly to get their attention. Look directly at the person when you are speaking, because some hearing impaired people need to see your mouth to lip-read. Speak slowly, clearly, and expressively. Speaking loudly may help some, but not all; keep their privacy in mind. Remember that many people with hearing impairment also do not speak. Sometimes writing things down on paper is the best solution. Remember to carry a pen and paper with you for this purpose
- when giving assistance to a person with a disability, take into account conditions such as rain, ice, wind, inclines, steps, gravel, mud, etc.

PASSENGER COMFORT

Passenger comfort must be uppermost in the minds of operators who transport persons with disabilities. A draft, for example, or a hot vehicle on a summer's day can have major effects on some passengers with disabilities. Always be alert and sensitive to the environmental conditions that can affect your passenger's comfort. Check occasionally and ask if your passengers are comfortable. Here are some tips to get you started:

- knowing and understanding the characteristics of a disability is valuable information for operators
- watch the temperature. Make it your business to know where the warmer and colder spots are in the vehicle when the heater or air conditioner is on, the location of any drafts, and where the drafts go when the door is opened. Inform passengers of the warm and cool spots to help them decide where to be seated. The rear of the vehicle is usually much warmer than the front, although this area can be rougher for passengers in wheelchairs. Use weather stripping to cut down on the drafts
- keep the season in mind. In the winter, open the bus doors only when necessary

- maintain good air quality. With 'rear loaders', it is a good idea to shut off the engine at pick-up and drop-off points to keep hazardous and irritating gases out of the bus. The engines of side loaders do not necessarily have to be turned off as the exhaust vents on the side of the bus are away from the door.

In winter-time, batteries can be depleted if you do not leave the engine running, particularly if the lift operates with the battery as the power source. In all seasons, keep the vehicle well ventilated.

DRIVING TIPS

Your driving patterns can have a major impact on your passengers comfort. Jerky, bumpy rides can create excruciating pain for many passengers and may jeopardize their safety. Here are some tips to keep in mind:

- drive as smoothly as possible, particularly when starting or stopping. Avoid unnecessary or sudden lane changes
- watch those bumps and potholes. Slow down and drive gently over them
- ease around corners slowly and smoothly. People who have difficulties with balance are particularly vulnerable to sudden changes of direction or movement. Some passengers may not have the upper body strength to be able to brace themselves.

LOADING AND UNLOADING LOCATIONS

It is important for the operator to have a plan for suitable stopping locations when driving a bus equipped with a wheelchair lift.

You will need to consider the following:

- where to stop so the wheelchair lift operates properly
- where to stop so that you can be seen by other motorists
- where to stop if your original stop is not available
- know how and when to use the alternately flashing amber and red light system. Review local bylaws, policies and procedures regarding the use of these lights with your supervisor.

EMERGENCY SITUATIONS

Evacuations

Every operator should have an evacuation plan for their school bus as discussed in an earlier session.

It is important for any operator, including those who transport passengers with disabilities or special needs, to know what to do in the event of an emergency.

As in any emergency situation, you must determine whether you will need to evacuate the passengers. You will evacuate the passengers if any of the following exists:

- unsafe position
- danger of fire such as smoke or fuel leaks
- fire

Always remain calm. If your passengers sense fear and anxiety, they may become uncontrollable.

Other helpful information to have on-hand and easily accessible are the location and phone numbers of fire stations, hospitals, police stations, and medical clinics along or close to your route.

Passenger Limitations

Knowing the limitations of your passengers: what the passengers can and cannot do is important for the school bus operator in and emergency situation. The operator should know the following:

- which passengers can come off the bus by themselves
- which passengers can be removed from their wheelchair
- which passengers must not be removed from their wheelchair.

The wheelchairs should be left if it is faster to remove only the person. If possible, have the able-bodied passengers assist you with passengers who require extra help.

GENERAL LIFTING TECHNIQUES:

When having to lift a person, never try to lift someone who is more than half of your own weight. Look around to see if there is anyone who can assist you in this.

Test your lifting ability by slowly trying to lift the passenger. You do not want to injure yourself, thus rendering yourself unable to assist anyone. If you are unable to lift the passenger, try another method.

Always ensure the aisle is clear to the exit.

Inform the passenger what you are about to do. If necessary, cut the restraints.

Position the passenger in the direction you want to go if possible. Maintain a good grip on the passenger or grip their clothing. Try to squat down, keeping your heels flat to the floor.

Get close to your passenger and gradually lift, using your legs, abdominal, and buttock muscles. Try to keep your back as straight as possible.

TECHNIQUES FOR REMOVING A WHEELCHAIR PASSENGER:

You can use one of the following techniques:

1. the one-person lift
2. the two-person lift
3. the blanket drag

1. The One-Person Lift:

- follow general lifting guidelines
- pass the passenger's closest arm over your shoulder
- place one of your arms behind the passenger's shoulders with your hand under the passenger's other arm
- place your other arm under the passenger's knees
- squat down with feet shoulder-width apart
- lift the passenger with the load equally divided between both arms, holding the passenger close to you.

2. The Two-Person Lift:

- follow general lifting guidelines
- move the passenger in a wheelchair as close to the exit as possible
- slide the passenger on a seat next to the aisle
- the taller person stands behind the passenger and the second person stands in front of the passenger and off to the side
- if the passenger is in a wheelchair, the person in the front should remove the armrests and fold up the footrests
- the person in the back reaches under the passenger's arms and grasps the right hand to passenger's right wrist and left hand to passenger's left wrist. Another way is to clasp hands across the passenger's chest

- the person in the front lifts the lower extremities under the thighs and hips
- squat down and lift together on a count of three
- move to the designated area and lower the passenger on the count of three.

3. Blanket Drag:

Using a blanket will reduce stress on the passengers body and will reduce the chance of injury to your passenger and you. The blanket drag is also a way to move a passenger who too heavy to lift or a passenger who might be hurt by lifting.

This is not a recommended method for a passenger who is medically fragile.

Use the following technique:

- first, follow the general lifting rules
- fold a blanket in half and place it on the floor next to the passenger
- lower the passenger's legs onto the blanket first, then the body
- place the passenger with their head toward the exit
- wrap the blanket around the passenger to prevent their arms and legs from being caught on obstacles
- grasp the blanket near the passenger's head and carefully drag the passenger to the exit.

Remember, in all emergency situations, it is not enough for you, the operator, to know what you will need to do in an emergency, but it is equally important for your passengers to know what to do as well.

RESTRAINT CUTTERS

Special restraint cutters allow you to remove tie-down straps or other occupant restraints quickly in an emergency situation. The restraint webbing fits into the slot on the restraint cutter and the razor-sharp blade in the slot cuts the strap.

Store the restraint cutter in a location that is easily accessible for the operator yet out of easy reach of the passengers.

With all emergency situations, communicate with all of your passengers as to what is happening.

Note: *When practicing evacuation procedures, do not take a passenger out of their wheelchair. While completing these emergency drills, be certain to communicate with the passenger what would happen in the event of a real emergency.*

LIFT FAILURE

If you experience a power or equipment failure and you have a passenger on the bus, you will have to operate the lift manually. Follow the manufacturer's instructions for manually operating the wheelchair lift.

SERVICE ANIMALS

Some of your passengers may be required to bring along a service animal.

EXTREME BEHAVIOURAL ISSUES

In transporting passengers with special needs, there may be instances where one of your passengers may become unusually agitated while on the trip to or from school. For the operator, this can be stressful, trying to pay attention to the road and monitoring the passengers at the same time.

The following suggestions could assist you in these situations.

Bus Aides:

By providing a bus aide on a route where a passenger requires more attention can relieve a lot of the stress for the operator by allowing them to concentrate primarily on the driving task.

This option should be discussed with your company and the school board if you are experiencing difficulty with a passenger's behaviour.

Harnesses/Restraints:

There are various types of restraints that can be used to ensure that a passenger with extreme behavioural issues remains safe in their seat. Talk to your company and school board before using any of these restraints.

SERIES 5.3: Basic Handling for Mobility Aids

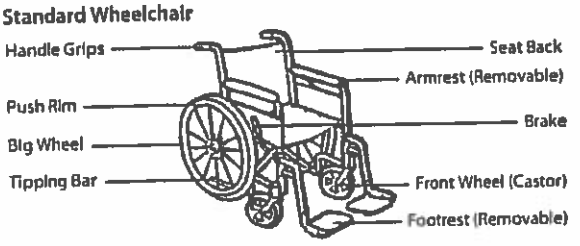
Note: *Most of this module refers to the handling of* ***manual wheelchairs.*** *You cannot safely tip a power chair or scooter to the balance point since tipping may spill acids from batteries and cause severe burns. DO NOT tip the power chair or scooter more than a few inches unless the batteries have been removed.*

Always use common sense. Whenever possible avoid curbs, don't use stairs, and always ask your passengers how to provide assistance.

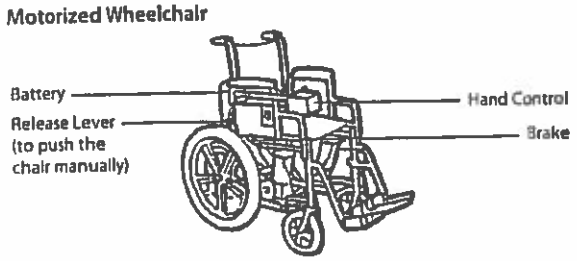
TYPES OF MOBILITY AIDS

The most common types of mobility aids are the standard manual wheelchair, the power drive (motorized) wheelchair, and the motorized scooter.

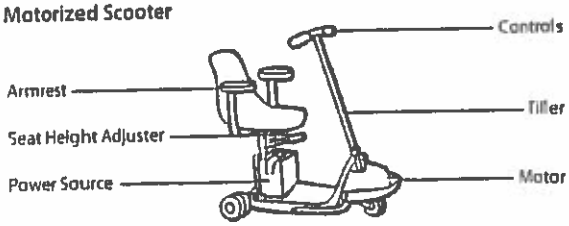
Standard Wheelchair



Motorized Wheelchair



Motorized Scooter



Be Careful About Back Injuries

Proper lifting techniques are essential to prevent injuries. Remember to follow all the rules to avoid back injuries, including keeping your back straight and using your legs to lift, while keeping the person or object being lifted close to the body.

10 TIPS FOR WHEELCHAIR HANDLING

When handling a wheelchair, always remember to first ask your passengers if they have any questions.

- don't rush. Push at a normal walking speed
- always inform the passengers as to what you are about to do
- look ahead at least three metres (10 feet) and along the sides of the chair
- slow down. Watch for small cracks or bumps, and go around them
- tip the chair over bumps or cracks if they cannot be avoided. Use the tip bar to lower the front wheels with control and don't drop or bang the chair down
- watch out for other people
- judge distances by the front of the foot pedals rather than the front of the seat. Remember that the passenger's feet will extend beyond the footrests
- beware of loose handle grips or armrests that are not properly locked in place
- watch that hands and feet don't get caught in the wheels, on the ground or curbs.
- be careful; don't bang the chair or handle it roughly for the sake of the passenger and the chair

TIPPING A MANUAL WHEELCHAIR TO THE BALANCE POINT

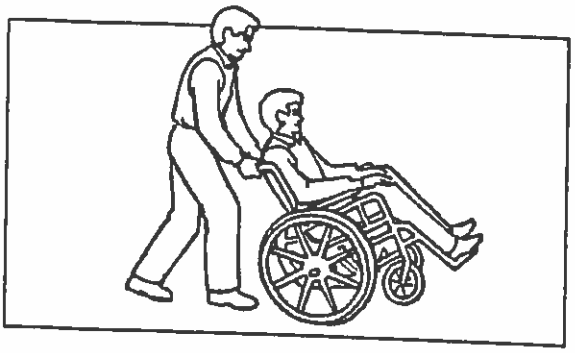
You will have to tip a manual wheelchair backwards to the balance point to clear objects, go up and down curbs, or over rough ground.

The balance point is the point where the chair requires little or no effort to stabilize, and can be easily manoeuvred on just its rear wheels. This point varies according to the weight and height of the passenger, the type and size of the wheelchair, and your size.

Step One:

- stand with one foot in front of the other
- place the front foot on the tip bar. Press down
- pull handle grips toward you and downward
- if the chair does not have push handles or tip bars, ask the owner how to best provide assistance

Step Two:



- continue pulling the handle grips down until the balance point is reached. The weight of the chair should rest in the palms of the hands and the chair should be balanced on its back wheels
- remove foot from tip bar

Step Three:

- to return the chair to all four wheels, carefully and gently reverse the above procedure

BUMPS AND ROUGH GROUND

Bumps:

Cracks, door jambs and even stones can stop the small front wheels of a chair from turning. A sudden, abrupt and unexpected stop can be very uncomfortable for the person in the wheelchair or could even cause them to fall out of the chair.

These situations, when encountered, require you to slightly tilt the wheelchair backwards.

Here's how:

- tip the chair slightly using the tipping bar until the casters are clear of the bumps
- keep your foot on the tip bar and push the chair past the bump
- set the chair down gently
- remember, if the chair does not have pull handles or tip bars, ask the passenger what to do.

Rough Ground:

When you leave a smooth pavement or sidewalk surface, special techniques are needed to prevent the front wheels from digging into soft ground that could result in the person falling out of the wheelchair.

Use the following techniques when crossing uneven ground, grass, mud, snow covered walks or gravel driveways.

Moving Frontwards:

On fairly level ground:

- tip the chair to the balance point as the big wheels are easier than the small front wheels to manoeuvre or turn on rough ground

- while maintaining the balance point, push the chair forward until you clear the rough ground
- gently return the front wheels to the ground when back on a hard flat surface.

Moving Backwards:

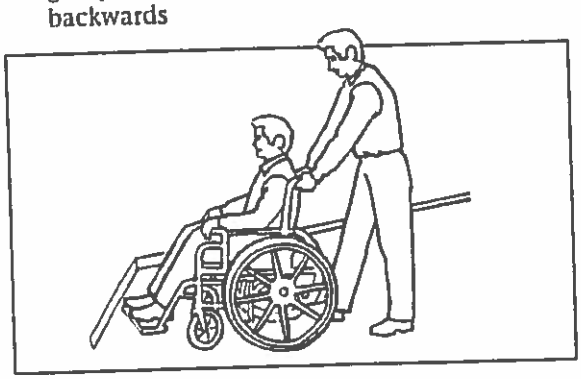
In many cases, it may be easier going backwards on rough terrain. In heavy snow or where pushing is difficult, the small front wheels can dig in, making for a rough ride for your passenger and difficult for you.

- back the chair to the edge of the rough ground and ensure a solid stance
- tilt the chair back to the balance point
- check the ground in the direction of travel and look over your shoulder before moving
- step backwards an arm's length away from the chair and pull using your leg muscles
- pull the chair towards you
- repeat until the area is cleared
- stop and gently return to all four wheels on the ground.

CURBS: (Manual Wheelchairs Only)

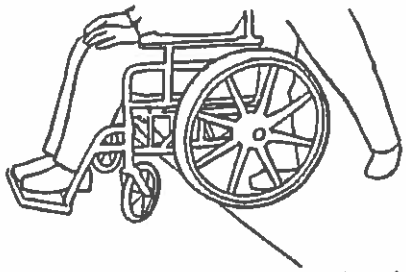
Going up and over a curb:

- go up and over curbs frontwards, not backwards



- approach the curb at a 90 degree angle
- tilt the chair to the balance point

- move the chair forward so that the rear wheels touch the curb and the front wheels are on the curb.



- ensure solid stance for stability by placing your feet shoulder-width apart, placing one foot slightly ahead of the other, and bending the knees slightly
- lift-roll the rear wheels up and over the curb

Going Down a Curb:

Reverse the previous procedures, taking care not to allow the rear wheels to drop off the curb edge. Go down backwards, rear wheels first. Note that some passengers feel uncomfortable going down a curb backwards and prefer to face the direction in which they are moving.

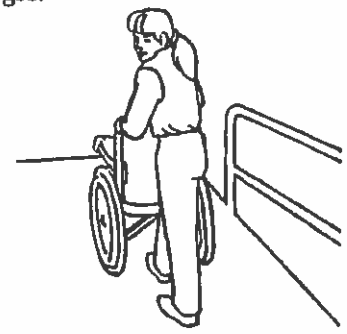
To go down a curb frontwards:

- tip the chair to its balance point
- move to the curb edge and with control, carefully rock the rear wheels down the curb
- move away from the curb and, using the tip bar, gently return to all four wheels.

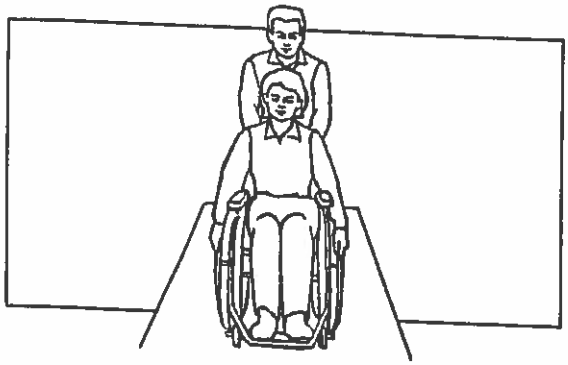
RAMPS

Going Down a Ramp:

- turn the chair backwards, particularly if the ramp is steep or slippery
- align the chair so that the rear wheels are at a 90 degree angle to the top – so that you proceed straight down the ramp and not at an angle.



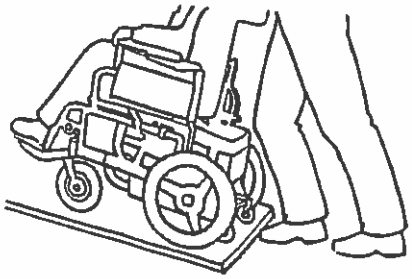
- brace the wheelchair against the thigh of one leg (not the knee).
- place one leg behind the other
- step backwards with your front leg
- allow the chair to rest on the thigh of the front leg
- look over your shoulder to check for obstacles, or slippery areas
- steer the chair straight down until you reach the bottom
- when the bottom is reached, use the procedure for going over bumps discussed previously to ensure the footrests do not scrape on the ramp.



Note: *You can also go down a ramp with your passenger facing downhill under certain circumstances. If, for example, the ramp has a gentle grade, the ramp surface is not slippery or slatted, and the weather is clear and dry, you might consider this method. Make sure the handgrips are secure on the chair before you do this.*

Going Up a Ramp:

- keep the chair upright on all four wheels
- push the chair forward
- be careful of wet or slippery areas



- use the 'bump' procedure previously mentioned to ensure that the footrests do not run into the base of the ramp.

STAIRS: (Manual Wheelchairs Only)

Wherever possible, use two people to take a person using a wheelchair up or down stairs. Doing it yourself is difficult and dangerous. It puts you and your passenger at risk.

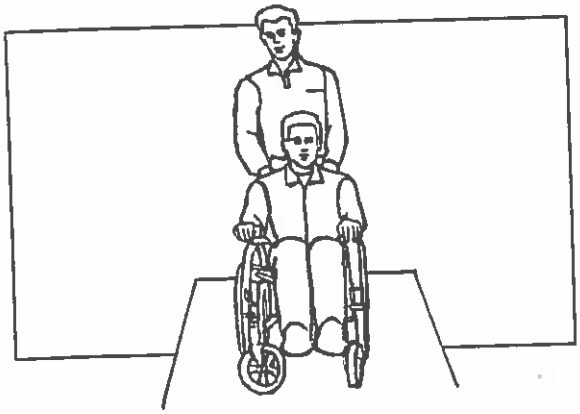
If your passenger has a lap belt, make sure it is secured at all times when moving the wheelchair.

Safety Tips:

- make sure the handle grips are secure. If they are loose, remove them
- never grasp removable parts such as armrests or footrests
- always assume a solid stance when lifting to stabilize your weight
- preferably use two people to do the job and make sure they have good communication among themselves
- make sure the passenger is properly positioned in the chair, with feet securely on the foot rests and hands and arms away from the wheels
- NEVER go beyond your physical limitations.

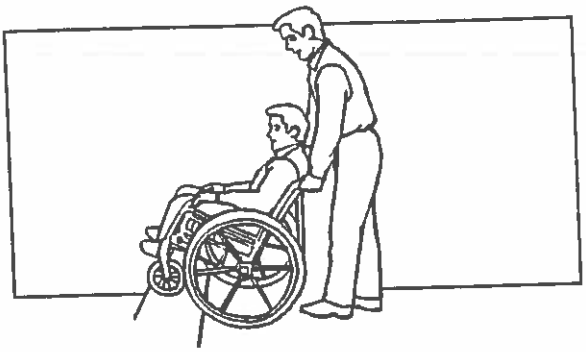
One Person Method: (Not Preferred)

Going Down Stairs:

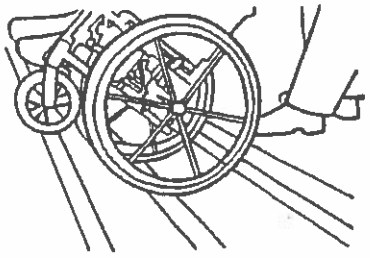


- remember it is always safer to use two people to take a person using a wheelchair down stairs.

  Most of the same procedures apply whether one or two people negotiate the stairs
- have the person using the wheelchair face downstairs
- stop the wheelchair well before reaching the first step
- tilt the chair to the balance point

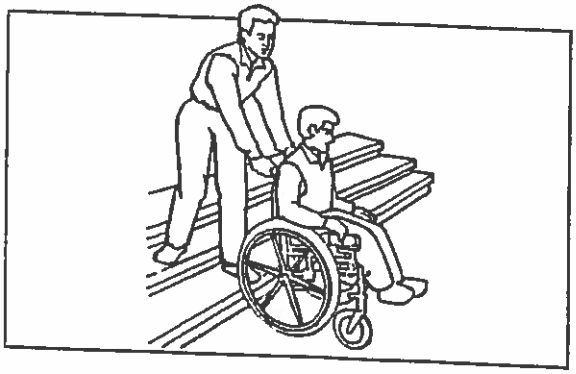


- roll the chair forward to the edge of the step
- ensure the wheels are square with the edge
- assume a solid stance
- roll the rear wheels only over the edge of the step



- use your body weight to hold the chair back
- rest the big wheels in the 'V' of the step before rolling over the next step edge (refer to picture above)

- move one foot to the step that the chair is on
- leave your other foot one step above
- repeat

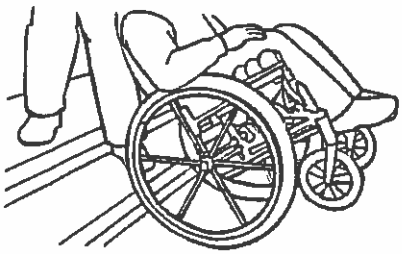


- when the bottom is reached, gently return the chair to the upright position

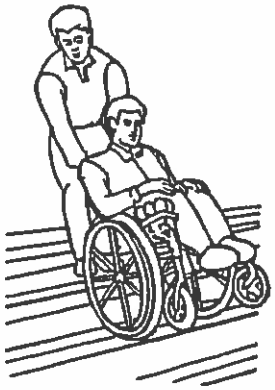
Going Up Stairs

Remember, it is always safer to use two people to take a person using a wheelchair up or down stairs.

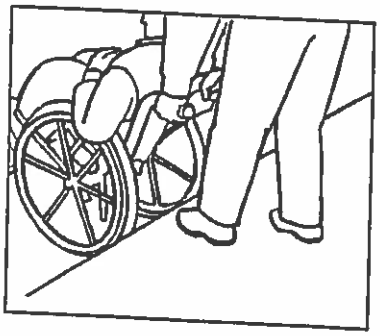
- back the wheelchair towards the first step and tip the chair to the balance point



- with the big wheels touching the bottom step, place one foot on the first step and the other on the next step above
- the dominant leg should be on the higher step
- assume a solid stance (bended knees, keep back straight)



- pull on the handle grips and lean backwards
- straighten your legs and bend your arms slightly as the big wheels come over the edge of the step
- pull the big wheels into the 'V' of the step
- change footing and repeat



- once at the top, move the chair well away from the edge
- gently return the chair to the upright position.

Two-Person Method: (Preferred)

Going Down Stairs

Follow the same procedures as for going up and down stairs with one attendant. (With the person using the wheelchair facing down the stairs, tilt the chair to the balance point and move to the edge of the first step.)

Upper Attendant:

- lowers the chair from step to step, using procedures listed in the one-person method
- gives verbal commands such as: "one, two, and three, lower" to synchronize the movement.

Lower Attendant:

- does not lift, but maintains control or pushes so weight isn't shifted to the upper attendant. If the lower attendant tries to help by lifting the front of the wheelchair, it puts the person holding the hand grips at risk by throwing off their balance
- grasps the lower part of the wheelchair frame, not the moveable or removable parts
- maintains the balance point of the chair
- holds the chair in the 'V' of the step while the upper attendant changes footing

Going Up Stairs

Upper Attendant:

- the strongest person assumes the back position
- on a verbal command issued by the upper person, both attendants together lift-roll the wheelchair upward one step at a time
- the upper attendant has better leverage, and should do most of the pulling
- lifting too much from the front can cause a loss of balance

Lower Attendant:

- follows the steps listed in Going Down Stairs.

DOORS

Doors Opening Outward:

- turn chair around and back through doorway and ensure the passenger's feet clear the doorway

- prop the door with your foot or elbow, or carry a door-stop for this purpose. You can also ask a passerby to hold the door for you
- turn chair around to forward position and push clear of the area, again ensuring the passenger's feet are clear the doorway
- release the door.

Doors Opening Inward:

- place wheelchair at an angle slightly away from where the door will open
- hold chair with one hand and open door with the other.
- use foot or elbow to hold the door open
- push the chair through the doorway and release the door.

SERIES 5.4: Loading and Unloading

One of the secrets behind the safe loading and unloading of your passengers is to plan ahead. You can make life easier for your passengers, yourself and other road users by thinking ahead and positioning your vehicle properly.

POSITIONING OF VEHICLE:

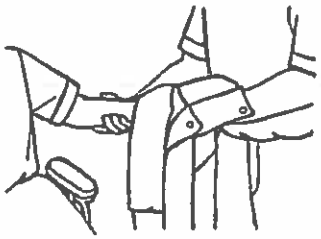
- avoid congested areas if practical
- preferably look for a drive-through route where you can drive in and out without backing up
- try to stop where other drivers have a good view of your vehicle and what you doing
- avoid stopping where passengers will have to be taken down curbs, rough areas, snow banks, puddles, etc.
- always turn the ignition off and remove the keys if the vehicle is to be left unattended.

Note: *In cold weather, some buses will not restart if this procedure is followed. Some buses are equipped with a 'kill-switch' that allows the operator to leave the vehicle running after removing the key. This allows the heat to remain on for the safety and comfort of passengers. If someone tries to take the vehicle, it will stall when put into gear and cannot be restarted then without the key.*

- avoid getting too close to other parked vehicles
- leave room for the ramp/lift
- leave room to manoeuvre the mobility aid on or off the ramp/lift
- stop as close as practical to the pick-up/drop-off area.

HELPING WITH COATS:

Helping with coats and other personal services are not part of the job description for all school bus operators who transport passengers with disabilities. Check your company's policy on this subject, talk to your supervisor, and always use your own judgment and common sense.



When helping with coats:

- thread your left arm through the left sleeve of the passenger's coat.

  Note: *the starting arm may vary depending on the passenger's mobility of either arm*

- take your passenger's left arm and gently pull the sleeve up to the shoulder

- lean the passenger forward, support at the front with your arm, and pull the coat around the passenger's back
- pull the excess material to opposite arm

- leave the coat off the shoulders, and repeat the first two steps for the passenger's right sleeve
- pull the coat up over the shoulders, and adjust it to make sure it looks smooth and neat.

Note: *An alternate method is to place the jacket in the passenger's lap, facing outward with the collar on top. Thread the passenger's arms through the sleeves and gently take the jacket over the passenger's head and adjust as necessary. This method is not recommended for passengers who cannot raise their arms.*

ASSISTING AMBULATORY PASSENGERS:

Some of your passenger passengers may be able to walk on their own or may require a cane or walker for support.

To help these passengers, remember the ASK rule: ASK if and how they might need assistance, but wait until your offer is accepted before you help.

Touching a passenger unannounced can throw them off balance and lead to a fall.

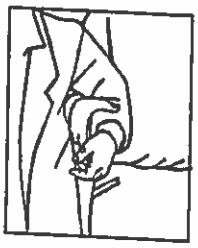
It is particularly important to ASK passengers with walkers how you can help before they reach the point when they must leave their walkers behind to board the school bus.

If a passenger wants assistance, ASK specifically how you may help. If the passenger refuses help, stay close by and be prepared just in case.

The following procedures are recommended to assist an ambulatory passenger:

- offer your arm to passengers with visual impairments, or passengers who need some support
- your passenger should grasp your arm just above the elbow

- your role is to act as a guide. Always walk slightly ahead of your passenger, and agree on a comfortable pace



- for passengers who require more support, hold your forearm at a 90 degree angle to your upper arm
- the passenger then puts his or her forearm inside your arm for extra support.

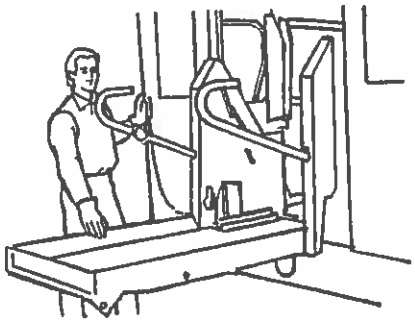
Note: *If a passenger is about to fall, do everything you can to cushion the fall, but normally don't try to prevent it. Attempting to stop a fall could result in injuries for both you and the passenger.*

LOADING USING A LIFT:

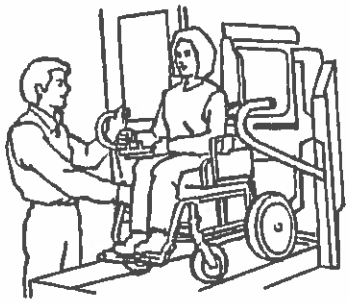
To help passengers on and off a vehicle using a lift requires common sense and knowledge of your vehicle's entry system. The safest method of using a lift varies with the type of equipment, the size of the mobility aid, etc. Side loading lifts require the passenger to face away from the vehicle. Rear loading lift systems require the passenger to face the vehicle.

The following procedure is recommended for both types of lifts:

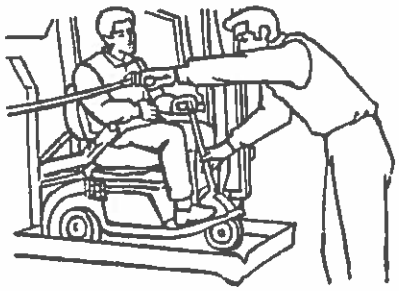
- apply parking brake
- check to ensure that the passenger in the chair has done up their lap belt
- make sure the doors are locked open and cannot swing closed



- lower lift to ground level, being careful not to pound it into the ground or leave it resting on uneven ground
- place the mobility aid on the lift, with the passenger facing away from the vehicle, making sure that the passenger's feet and legs or parts of the mobility aid will not get caught between the vehicle and the lift
- put on the mobility aid's brakes, if available
- put up the safety plate on the lift (on some vehicles, this is done automatically)



- operators should ride on the lift with the passenger when possible, but some scooters and electric chairs are too big to allow this. Operators must keep one hand on the mobility aid to ensure they are immediately aware of any movement of the chair while on the lift
- release the brakes of the mobility aid
- roll the mobility aid into the vehicle and apply it's brakes
- enter the vehicle and manoeuvre the mobility aid to the desired location, ensuring the passenger's feet are clear
- use tie-downs, seat belts, shoulder straps and mobility aid brakes
- don't forget to return the lift to the upright position and ensure the doors are closed before re-entering the vehicle
- develop a routine. If distracted, return to the routine to ensure no steps are missed or are incomplete



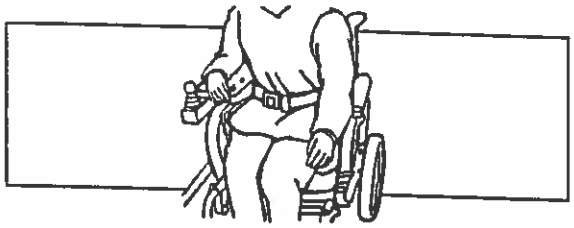
Follow the same procedures for all mobility aids, making sure the safety plate is up before you start the lift (if it does not go up automatically), and remembering to keep one hand on the mobility aid at all times.

UNLOADING USING A LIFT:

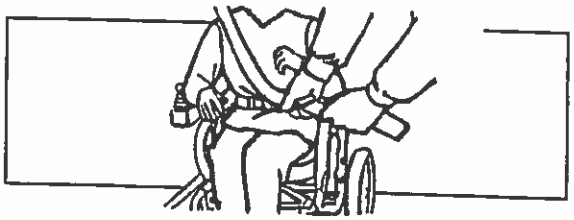
To unload, reverse the procedures in Loading Using a Lift.

MOBILITY AID AND PASSENGER RESTRAINT SYSTEMS:

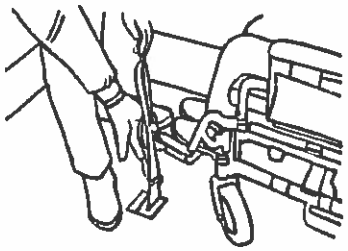
Securing Wheelchairs and Passengers:



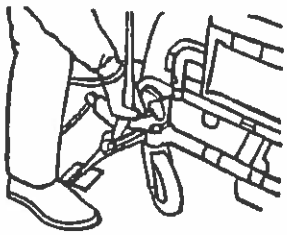
- make sure your passengers have their chair's lap belt (if equipped) properly secured
- centre the chair on the four plates on the floor of the bus



- if passengers prefer to use a lap belt attached to the vehicle, take the belt and attach it to one of the rear tie-downs. Pass it around the passenger, holding it away from the passenger's body. Take the other end and secure it to the other rear tie-down
- when using a shoulder strap, be sensitive to your passenger and be as unobtrusive as possible
- take the shoulder strap from the wall, holding it away from your passenger's body with one hand. While still holding the strap, use your other hand to clip it to the four point tie down on the mobility aid
- gently release the shoulder strap and pull the adjustment snugly

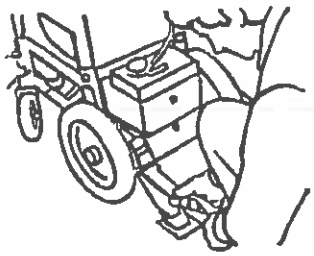


- secure the two front tie-downs. Attach the clip into the floor plate and pull the belt to the estimated length required to secure the hook
- attach the hook to a solid frame member on the wheelchair



- tighten the belt so it is secure but not forced and make sure the belt forms a 45-degree angle to the floor
- over-tightening may damage the wheelchair

- keep the belts clean and off the floor by securing the Velcro tabs
- repeat the procedure with the rear belts, again having the belts form a 45-degree angle to the floor
- for manual wheel chairs, hook the belt to a solid frame member near the place where the chair seat meets the seat back



- when tied down, the wheel chair should be snug and not wiggle back and forth, but be careful not to over-tighten.

Securing Scooters:

Three or four-wheel scooters can be a challenge to secure, particularly if there are no clips or rings attached to the rear framework. Some companies will not transport scooters unless they can be properly secured.

Passengers are advised to contact the scooter manufacturer to make any adjustments and not leave the job to amateurs. Otherwise, the scooter can sustain damage and the safety of all passengers can be compromised.

The Safest Way:

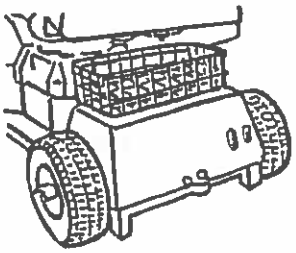
The safest way to travel with a passenger who uses a scooter is to have the passenger transfer to a seat and use a lap belt and shoulder strap. Some companies make this practice a requirement.

If passengers are reluctant to leave their scooter, the best procedure is to appeal to their reason, emphasizing that this is for their safety and the safety of everyone else on the bus:

- explain to passengers that it is extremely dangerous for everyone in the vehicle if they remain on their scooters
- mention that they can easily tip when the bus is going around corners because their center of gravity is high, and this potentially puts all passengers at risk

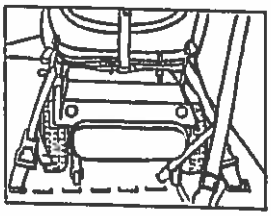
Some passengers may be unable to transfer from their scooters. In these cases, or when the passenger refuses to leave their scooter, it should be secured as described below. The passenger should be secured with a lap belt and shoulder strap.

Secure scooters using the same procedures for wheelchairs. Tie them down using the four-point system in the floor, tightening the straps so the straps are snug but not too tight.



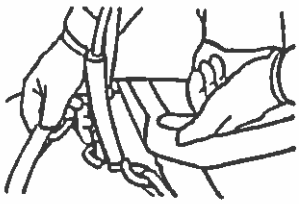
Scooters should be equipped with clips, bars or D-rings installed by the manufacturer on the rear framework.

The safest way to secure the back of the scooter is by looping the belts through the clip, ring or bar attached to the rear framework. The belts should form 45-degree angles to the floor.



Less safe and less secure methods of tying down the back of the scooter are by attaching the clips around the pedestal or the chair frame.

Note: *There is a danger that the pedestal and frame can detach during a collision.*



Secure the front of the scooter by hooking each belt to the tiller and crisscrossing them in front.

Attach the belts to the two floor plates and adjust.

The Older Adult Sensitivity Training Module

Effective Communications Skills: the Basics

Good communication is the foundation of a successful relationship between health care professionals and older adults. All forms of communication—verbal, nonverbal, and written—are critical.

Verbal Communication

Assess the health literacy of each patient individually and frame your discussion with words that are understandable and familiar to the patient (and his/her family). Avoid complicated language, medical jargon, and abbreviations. When a patient doesn't understand the jargon, quality of care may be jeopardized and comprehension of the health care professional's message is diminished.[1] Take the time to check that the patient understands what you are saying.

Nonverbal Communication

Facial expression, body movements and posture, eye contact, gestures, touch, and tone of voice are all important nonverbal cues, especially with older adults who have experienced losses in hearing and cognitive function. Positive nonverbal cues can contribute to development of trust and rapport and to the establishment and maintenance of close interpersonal relationships between health care professionals and older adults.[2]

Written Communication

There are some special considerations when developing written materials for older adults. Changes in learning and memory may affect an older reader's ability to absorb content; thus, the information should be presented in a way that accommodates both the cognitive and physical changes that are often associated with aging.[3] Another suggestion is to repeat key points multiple times.[3] Additional written communication strategies can be found in the **Improving the Health Literacy of Older Adults** section below.

Strategies to Address Common Sensory, Cognitive, and Mobility Changes in Older Adults

Hearing Loss in Older Adults

Hearing loss is one of the most common conditions affecting older adults. In people aged 85 years and older, approximately 60% report hearing loss.[4] Look for clues of misunderstanding when assessing hearing impairment. Recognizing these behaviors can help you identify situations in which hearing loss may be causing a communication problem. Examples of behaviors exhibited include the following:

Indicators of Impaired Hearing[5]	
• Turns up the radio • Habitually turns head to one side while listening • Frequently misunderstands what is said • Gives inappropriate answers to questions	• Appears inattentive • Complains that speakers don't speak clearly • Frequently asks speakers to repeat what they said • Has difficulty distinguishing words

Strategies to enhance communications with older adults who are hearing impaired are listed below.

Enhancing Communications With Older Adults Who Are Hearing Impaired[5]	
• Ask if the person if he/she can hear you • Use low tones—don't shout • Speak distinctly • Talk face-to-face • Eliminate or reduce background noise	• Don't cover your mouth • Use visual aids (eg, diagrams) • Provide time to respond • Try rewording a message • Provide good lighting directed at the speaker (helps with lip reading)

Visual Impairment in Older Adults

The risk of vision loss and blindness increases significantly later in life. An estimated 10% of people aged 65 to 75 years and 27% of those 85 years and older experience functional limitation because of visual impairment.[5] A number of strategies can be used to enhance communication with older adults who have a visual impairment.

Enhancing Communications With Older Adults Who Have a Visual Impairment[5]	
• Announce your presence • State what you are going to do • Keep objects in the same place • Talk directly to the person • Orient person to a new environment	• Offer assistance—but don't insist on helping • Use the person's remaining senses • Know how to be a sighted guide • Have relevant low-vision aids available

Learning and Cognitive Changes in Older Adults

There are a variety of age-related changes in learning and memory that can affect communications with older adults. These include[6]

- Decline in "channel capacity," the ability to process information from 2 or more sources at once
- Increased likelihood of being distracted from learning and remembering
- Increased time required to learn new information
- Slower retrieval of stored information
- Decreased performance in tasks requiring speed and fine coordination

There are also changes in cognition and memory with age that may be related to Alzheimer's disease (a form of dementia). An estimated 5.4 million Americans of all ages have Alzheimer's

disease in 2011; 5.2 million of these people are aged 65 and older. In the overall population aged 65 and older, 13% have Alzheimer's disease.[7]

As dementia progresses, a person's way of communicating will change. As a result, you will need to change your expectations of and how you communicate with people with dementia. Experts suggest the following tips for improving communications with older adults with dementia.

Communicating With Memory-Impaired Older Adults[8]	
• Introduce yourself • Call the person by name • Speak slowly and use simple, direct wording • Ask one question at a time and patiently wait for a response • Repeat information or questions	• Emphasize key words • Provide visual cues • Write things down • Be aware of your tone of voice • Pay special attention to your body language

Older adults with dementia frequently present challenging behaviors. When dealing with persons with dementia, the following points should be kept in mind[9]:

- Difficult behavior is not willful
- The impaired person is always right, from their point of view
- The impaired person loses the ability to learn and to record information
- In patients with dementia, the past becomes more real than the present
- Emotions and feelings remain intact in patients with dementia
- The memory-impaired person cannot change

Strategies for dealing with challenging behavior include[9]

- Connecting, not correcting
- Focusing on feelings, not facts
- Using distraction

For additional information on dealing with behavioral issues in older adults see **Addressing Behavioral Challenges in the Senior Care Setting** in the second module of this document.

Mobility and Dexterity Issues and the Older Adult

Older adults frequently demonstrate limitation of mobility and dexterity due to both the normal aging process and the progression of disease outcomes. When dealing with older adults with limitations of mobility, specific strategies should be adopted.

Strategies for Assisting With Mobility and Dexterity Problems in Older Adults[9-11]	
• Move at the person's pace • Be patient • Ask if assistance is needed—but don't insist on helping [10] • Address physical limitations[11]	• Encourage physical activity[12] • Recognize fear of falling[11] • Encourage the use of assistance devices[10]

The office in which older adults are seen should make them feel comfortable, secure, and able to function as independently as possible.[13] Be sure to correct any environmental obstacles (eg, blocked access, poor lighting).

Lack of mobility also contributes to the risk of falling. Patients at risk of falling should be identified and closely monitored.

Common Risk Factors for Falling[14]	
• Prior history of falling • Age > 80 years old • Conditions that limit mobility (eg, arthritis) • Balance and gait problems • Cognitive impairment	• Frailty (eg, weakness) • Need for assistive devices • Visual deficits • Urinary or fecal urgency

Psychosocial Issues and the Older Adult

Older adults frequently experience multiple losses and life transitions, events that can diminish psychosocial well-being. Social engagement, such as social interaction and involvement in social activities, may limit psychosocial decline. The positive effects of social engagement include[15]

- Providing a dynamic environment that stimulates cognitive faculties
- Supporting commitment to community and family
- Providing a health-promoting sense of purpose and fulfillment
- Offering emotional support from relatives and friends

Depression in older adults often goes untreated because many people think that depression is a normal reaction to the chronic illness, loss, and social transition often associated with aging.[16] Distinguishing between cognitive deficits seen in depression and dementia is difficult but can be facilitated by neuropsychological evaluation.[17] Late-life depression increases risk of medical illness and cognitive decline and, if unrecognized and untreated, can have fatal consequences.[17] If depression is identified and treated, the prognosis is good.[16] Psychosocial treatment plays an essential role in the care of older patients who have difficulty dealing with their life situations.[18]

The Most Common Issues of Aging

Heart Conditions

Dementia/Alzheimer's

Depression

Incontinence

Arthritis

Osteoporosis

Diabetes

Breathing Problems

Frequent Falls

Parkinson's Disease

Cancer

Eye Problems