

Guidelines to Determine Collision Recordability



Transportation Safety institute



TSI Recordability Guidelines

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DEFINITIONS

Bus: A transit mode comprised of rubber-tired passenger vehicles operating on fixed routes and schedules over roadways. Vehicles are powered by:

- Diesel
- Gasoline
- Battery
- Alternative fuel engines contained within the vehicle

Collision: A vehicle collision in which the first harmful event is the impact of a road vehicle in transport with:

- Another vehicle
- An object, or
- Person(s).

Collision With Object: An incident in which a transit vehicle strikes an obstacle other than a vehicle or person (e.g., building or utility pole).

Collision With Person: An incident in which a transit vehicle strikes an individual. Incidents involving suicides and attempted suicides are excluded from this category.

Collision With Vehicle: An incident in which a transit vehicle strikes or is struck by another vehicle.

Demand Response: A transit mode comprised of passenger cars, vans or small buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. A demand response (DR) operation is characterized by the following:

- a. The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need, and
- b. Typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers.

The following types of operations fall under the above definitions provided they are not on a scheduled fixed route basis:

- Many origins — many destinations
- Many origins — one destination
- One origin — many destinations, and
- One origin — one destination.

Grade Crossing: An intersection of roadways, railroad tracks, or dedicated transit rail tracks that run across mixed traffic situations with:

- Motor vehicles

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- Light rail (LR)
- Commuter rail (CR)
- Heavy rail (HR) or
- Pedestrian traffic.

Either in mixed traffic or semi-exclusive situations.

Hazard: Any existing or potential condition that can cause injury, illness, or death to personnel; damage to or loss of equipment or property.

Layover: A stop where the transit coach sits at the end of a route while waiting to begin return service.

Major Incident: Existence of one or more of the following:

- A fatality other than a suicide
- Injuries requiring immediate medical attention away from the scene for two or more persons
- Property damage equal to or exceeding \$25,000
- An evacuation due to life safety reasons
- A collision at a grade crossing
- A mainline derailment
- A collision with person(s) on a rail right-of-way (ROW) resulting in injuries that require immediate medical attention away from the scene for one or more persons
- A collision between a rail transit vehicle and another rail transit vehicle or a transit non-revenue vehicle resulting in injuries that require immediate medical attention away from the scene for one or more persons.

Non-Major Incident: Incidents not already reported on the Major Incident Reporting form (S&S-40). Existence of one or more of the following conditions:

- Injuries requiring immediate medical attention away from the scene for one person
- Property damage equal to or exceeding \$7,500 (less than \$25,000).
- All non-arson fires not qualifying as Major Incidents.

Recordable Collision: A motor vehicle collision in which the Operator did not make a reasonable effort to avoid a collision.

Nonrecordable Collision: A motor vehicle collision in which the Operator committed no driving error and made a reasonable effort to avoid the collision.

Safety: Freedom from those conditions which can cause injury or death to personnel, damage to or loss of equipment or property

System Safety: The application of engineering and management principles, criteria, and techniques to achieve acceptable hazard risk, within the constraints of operational effectiveness, time, and cost, throughout all phases of the system life cycle.

Vehicle Leaving Roadway: A non-collision incident in which a transit vehicle leaves the road on which it travels.

INTRODUCTION

The following recordability guidelines have been developed by the Transportation Safety Institute in partnership with Center for Urban Transportation Research, First Transit, Laidlaw Transit Services, MV Transportation, and Veolia Transportation, to provide transit Collision Review Boards with transit specific criteria for assessing collisions and incidents for recordability.

The guidelines contained in this document are based on a high standard of defensive driving. Because of their responsibility for safety, transit bus operators are rightfully held to the highest safety standard. When applied fairly and consistently, high safety standards are accepted by the great majority of transit bus operators. Safety standards, applied to transit bus operators must also be reasonable. Even highly safety-conscious transit bus operators cannot prevent all collisions. We have tried to ground these guidelines in the reality of today's challenging traffic environment.

For a professional transit bus operator, "defensive driving" means doing everything reasonably possible to avoid a collision in spite of the unsafe or illegal actions of others, or challenging environmental conditions. "Prevent" means taking decisive counteraction to keep something unfortunate from occurring. "Recordable" means an alert transit bus operator could have anticipated, and therefore avoided, a collision or incident.

A finding of recordability does not necessarily imply "fault" or "liability" in a legal sense. Careful collision analysis is essential to transit bus safety. Failure to learn what caused a collision increases the chance of a similar collision occurring in the future. Taken individually, some contributing factors may appear relatively inconsequential. For instance, a transit bus operator who doesn't adequately compensate for view obstructions on the bus by "rocking before rolling" into an intersection may get away with it for years, until one day, in an unfortunate but ultimately predictable combination of circumstances, the "bad habit" results in a tragedy. In hindsight, recordable collisions often appear to be the eventually inevitable result of a long chain of unaddressed, unsafe acts.

An investigator should examine each incident to determine if it was recordable. That is, the investigator should determine if any action on the part of the operator could have prevented a collision in spite of weather, road, and traffic conditions, and regardless of the other driver's actions.

A recordable collision is one which occurs because the operator fails to act in a reasonably expected manner to prevent it. In judging whether the operator's actions were reasonable, one seeks to determine whether the operator drove defensively and demonstrated an acceptable level of skill and knowledge. The judgment of what is reasonable can be based on a company-adopted definition, thus establishing a goal for its safety management programs.

Note that the above definition of recordable collision is focused on the actions of the operator. It is the commonly used definition in evaluating operator performance. A broader definition, which can be used to evaluate the operator's and the transit system's actions, is given by the Federal Motor Carrier Safety Regulations as follows: A recordable collision on the part of a motor carrier means a collision (1) that involved a commercial motor vehicle, and (2) that could have been averted but for an act, or failure to act, by the transit system, or the operator.

Transit System Responsibilities:

Given this definition, it is notable that both the transit system, the operator, and maintenance personnel have responsibilities in collision prevention.

There are three essential ingredients vital to the success of a standardized collision prevention program. They are generally documented in the system safety program plan:

1. A company policy which defines the parameters of the program with integral support from executive management;
2. Clearly defined company standards for defensive driving, preventive maintenance, hiring and training, and other safety sensitive functions; and
3. An accident investigation program which includes performance of root cause analysis.

In conjunction with these ingredients, there is a five step recommended process in which the company must:

1. Have appropriate policies and procedures in place for support of defensive driving concepts, proper vehicle maintenance, hiring and training, and other related safety functions.
2. Inform employees of the standards they will be to which they will be held accountable:
 - a. mechanics – knowledge, skills and competence to service and repair vehicles and identify unsafe conditions
 - b. operators - knowledge, skills and ability to perform above and beyond the standards of the ordinary driver
 - c. all other employees - accepted industry safety standards
3. Train operators to be skilled professionals and instill adherence to defensive driving concepts and techniques. Also train maintenance staff to meet minimum manufactures standards and local conditions. Additionally offer professional development for safety staff.
4. Gather as much factual information as necessary after a collision occurs prior to determining its recordability.

5. The company must insure that the individuals reviewing the incident, as well as those responsible for rating recordability, are knowledgeable of and/or experienced with:
 - a. company policies and procedures including defensive driving standards, maintenance and training programs,
 - b. industry accepted defensive driving practices, maintenance practices, other safety functions,
 - c. Applicable laws and regulations,
 - d. all available factual information including causes and contributing factors of the incident.

Traditionally the scope of many programs used by transit systems deals with the recordability of a collision only at the operator's level. TSI encourages all transit systems to use a systems approach to include the activities of the entire company i.e., maintenance, operations (dispatch, etc.), and training departments in the final determination of recordability.

Operator's Responsibilities:

1. Commit NO driving errors.
2. Make due allowance for lack of skill or improper driving practices of others.
3. Adjust driving to compensate for unusual weather, road and traffic conditions.
4. Not tricked into a collision by unsafe actions of pedestrians or other operators.
5. Alert to collision inducing situations.
6. Recognize the need for preventative action in advance.
7. Take necessary action to prevent a collision
8. Operate within all applicable laws and regulations regarding the operator and the vehicle.

Maintenance Responsibilities:

1. Service and repair vehicles in such a manner to be consistent with company and manufacturer's procedures and be competent to identify unsafe vehicle conditions which will remove a vehicle from service.
2. Make no repair or service errors.
3. Use preventive maintenance inspection procedures based on:
 - a. Manufacturer's minimum specifications
 - b. Local conditions
 - c. Industry best practices

Gathering the Information

To assure that the operator is treated fairly in the classification of the collision, it is extremely important that the supervisor assemble all of the facts and information that is available. Many collisions will not require an extensive, on scene investigation. These collisions may fall into the category of the vehicle striking

fixed objects or parked cars. Using the guidelines for determining recordability outlined in these guidelines, these collisions will generally be recordable since no other driver was involved.

The supervisor should interview the involved operator as quickly as possible after the collision. The operator's account of the collision should be written and signed by the operator. This will help to avoid the operator's account becoming distorted and changed at a later date.

During the interview, the supervisor should attempt to learn from the operator, what, if anything the operator thinks could have been done to have prevented the collision. Replies such as "I guess I could have slowed down prior to entering the intersection" are an indication that the operator realized that by exercising more caution, it is possible the collision could have been prevented.

Collisions involving other moving vehicles, pedestrians, or animals normally require an on scene investigation by the supervisor. This investigation should be done as quickly as possible after the occurrence. This will permit the examination of temporary physical evidence such as skid marks, fluids, and transient evidence. A prompt investigation also allows the supervisor to examine other vehicles involved, interview witnesses and/or other drivers. The supervisor may want to consider taking the involved operator to the scene of the collision to explain the events leading up to the collision.

The supervisor making the investigation must bear in mind that information developed during the investigation is subject to the discovery procedure by the plaintiff's attorney should a civil action result. The supervisor should coordinate the investigation with the system's insurance carrier and/or attorneys to avoid jeopardizing the company's position in any civil action that might result. Every effort should be made to verify the operator's account of the collision. Such steps could include comparison of the operator's statement with police reports, witness statements, and the supervisor's findings at the scene of the collision.

If the operator alleges that a mechanical condition of the vehicle caused or was a contributing factor to the collision, the vehicle must be inspected by a qualified person as quickly as possible and before the vehicle is returned to service.

Making the Decision

After all of the information pertaining to the collision and to the events leading up to the collision has been assembled, the collision must be classified as recordable or non-recordable. All factors must be considered in the decision making process including what information was gathered at the scene, the vehicle(s) involved, and the actions of the drivers prior to the collision. How this is done and who makes the decision varies from agency to agency.

In some companies, the Safety Director or other supervisor studies all of the facts and classifies the collision. If the operator is in disagreement with the assigned classification, some agencies allow the operator to request that the collision be reviewed by a company collision review board. Despite the fact that each collision must be judged individually, experience in system safety over the years has shown that certain types of collisions are generally recordable on the part of the operator. The following types of collisions listed below cannot cover every collision that may occur. The listing is intended as a guideline in making the recordability determination.

RECORDABILITY GUIDELINES

ALL TYPES OF COLLISIONS

Recordable if:

- Operator was not operating at a speed consistent with the existing conditions or road, weather and traffic;
- Operator failed to control speed so that the vehicle could stop within assured clear distance;
- Operator misjudged available clearance;
- Operator failed to yield right-of-way to avoid collision;
- Operator failed to accurately observe existing conditions;
- Operator was in violation of company operating rules or special instruction, the regulations of any federal or state regulatory agency, or any applicable traffic laws or ordinances.

ANIMAL-RELATED COLLISIONS

The primary responsibility of the transit bus operator is to protect the customers on the bus. Unfortunately, when traveling steep mountain grades or in heavy highway traffic, it may be safer to strike an animal than try to avoid hitting it. When evasive action to avoid striking an animal results in a crash with another vehicle or a fixed object, the collision should be considered recordable on the part of the operator. If striking an animal can be safely avoided, it should be. It is the responsibility of professional operators to read the road ahead for potential hazards, including deer or other animals standing near the roadway that might suddenly bolt in front of the vehicle. Transit bus operators should be prepared to stop for or otherwise avoid an animal suddenly entering the roadway in front of their vehicle. "Watch for deer" signs or other signs notifying drivers of the potential presence of animals should be observed, and a corresponding higher degree of caution should be exhibited in such areas.

However, when an animal (of any type) runs into the side or rear of the vehicle, entering the roadway laterally just as the vehicle was passing and providing little if any reaction time to the operator, the collision may be non-recordable on the bus operator's part unless other factors are present.

BACKING COLLISIONS

Recordable if:

- Operator backed up when backing could have been avoided by better planning;
- Operator backed into traffic stream when such backing could have been avoided;
- Operator failed to get out of the vehicle and check proposed path of backward travel;
- Operator failed to sound horn while backing;
- Operator failed to check behind vehicle parked at curb before attempting to leave parking space;
- Operator relied solely on a guide to help with vehicle backing;
- Operator backed from blind side rather than a sight-side approach.

With few exceptions, transit bus backing collisions are recordable. A transit bus operator is not relieved of his or her responsibility to back safely even if a spotter or another operator is helping to direct the maneuver. The transit bus operator is personally responsible for making sure it is safe to back the vehicle.

Paratransit vehicles (by virtue of the nature of their job function) back up much more often than will a fixed route transit bus. Because of this, and because a spotter will most times be unavailable, the paratransit operator should always exit the vehicle and preview the path of travel before moving the vehicle.

Backing into a fixed object, another vehicle, or a person is recordable. This includes backing collisions in which another vehicle pulled behind the bus or a pedestrian walked behind the bus, and backing collisions in which a spotter misdirected the bus operator. Collisions in which the bus operator backed unnecessarily are recordable. For instance, pulling too close to the vehicle ahead at a stop light may require the bus operator to back up if that vehicle stalls or is delayed. If a collision occurs in such a scenario, it should be considered recordable. Backing off the roadway, into a ditch or onto a lawn, is recordable. Backing into low-hanging objects such as tree limbs, porches, or wires is recordable. It is the bus operator's responsibility to make sure it is safe to back.

Backing collisions occurring in the bus yard, at the fueling station, or in a transit center are recordable.

Failure to warn pedestrians in the area by honking the horn before backing is another indicator of recordability on the bus operator's part. Even if the bus is equipped with a back-up beeper, honking the horn provides an additional measure of safety. Back-up beepers can be hard to hear or interpret in certain situations.

BEHAVIOR PROBLEM ON THE BUS

A collision resulting from operator distraction due to a customer behavior problem on the bus is a recordable collision on the bus operator's part. Bus operators should stop the bus in a safe location when serious behavior problems occur. The internal overhead mirror over the bus operator's head should be utilized by the bus operator only for brief spot checks of customer behavior, not for prolonged monitoring or for addressing a serious behavior problem.

However, an injury resulting from a customer's sudden, unpredictable assault on another customer, or an operator, should be considered non-recordable.

BICYCLES, MOTORCYCLES, SKATEBOARDS

It is the bus operator's responsibility to avoid collisions with bikes, motorcycles, and persons on skateboards, even when the operators of these vehicles do not follow the rules of the road or act unsafely. A defensive operator gives wide berth when approaching or overtaking bikes, motorcycles, and persons on skateboards. However, when a motorcycle operator crashes into the back of a stopped or slower-moving bus, it may not be recordable on the bus operator's part, unless the bus operator stopped or slowed suddenly due to a failure to follow other vehicles at a safe distance, or a failure to read the road ahead for potential hazards.

BUS OPERATOR NOT WEARING SEAT BELT

Collisions in which the bus operator was thrown from the operator's seat due to failure to wear the seat belt, resulting in loss of control of the bus, are recordable. Potholes, rough pavement, or evasive action should not result in a operator being thrown from the seat if he or she is properly secured. Injuries to a bus operator resulting from a failure to wear the seat belt, or failure to wear it properly, are recordable.

Claims that the seat belt buckle malfunctioned, resulting in the operator being thrown from the seat, should be carefully investigated by qualified investigators.

BUS YARD COLLISIONS

Collisions in the bus yard are recordable. Bus yards are typically congested, constricted driving environments, and a high degree of caution is necessary at all times. The following types of bus yard collisions should be regarded as recordable:

- Bus strikes another bus (parked or moving). Striking a mirror on another bus is a recordable collision.
- Bus strikes a pedestrian (another operator, mechanic, supervisor, etc.)
- Bus strikes yard fence or gate.
- Bus operator gets off bus without securing it, and bus rolls into another bus, a fixed object, or a pedestrian.
- Bus operator leaves parking spot without unplugging engine heater cord.
- Bus operator/fueler/hostler leaves fueling area without removing fuel nozzle.

CONSTRUCTION ZONES

Avoiding collisions in construction zones is the responsibility of the transit bus operator. Complying with reduced speed limits, detours, and exercising a high level of caution when passing working construction equipment or flag persons is the responsibility of the bus operator. Determining if there is adequate clearance is the bus operator's responsibility. A collision in a construction zone should be regarded as recordable on the bus operator's part.

CUSTOMER FIGHT ON BUS

In most cases, customer fights resulting in injuries are not attributable to the bus

operator, and should not be regarded as recordable incidents on their part. Fights between customers cannot always be anticipated, defused, or even controlled without assistance.

However, a bus operator who is aware that a serious fight is taking place on the bus and who does not take reasonable measures to intervene according to their agencies policies, (i.e., warn the customers, stop the bus, call radio for assistance, etc.) may be charged with a recordable incident. Before arriving at a conclusion, a careful investigation will be necessary to determine all the circumstances surrounding such an incident.

DEADHEAD COLLISIONS

Collisions occurring after dropping off customers, on the return trip to base, should be judged by the same recordability criteria as collisions with customers on board. It is the bus operator's responsibility to avoid "letting his/her guard down" on the trip back to base.

DISABLED BUS STRUCK BY ANOTHER VEHICLE

If a mechanical problem occurs, it is the bus operator's responsibility to attempt to protect the disabled bus. Specifically, bus operators should:

- Evacuate customers to a safer area if the bus must be stopped in a hazardous location;
- Use the vehicle's four way flashers to warn traffic;
- Use warning devices such as warning triangles as soon as practical

Failure to carry out the above measures is an indication of recordability on the bus operator's part if a collision occurs to the disabled bus.

DRIVEWAYS

Collisions involving traffic originating from alleys, driveways, plant entrances, and other special interesting locations should be carefully analyzed to determine what measures the professional operator might have taken to avoid the occurrence.

Failure to slow down, sound a warning or to yield to the other driver, can be considered cause to judge such a collision recordable.

ENTERING TRAFFIC STREAM

Recordable if:

- Operator failed to signal when pulling out from curb;
- Operator failed to check traffic before pulling out from curb;
- Operator failed to look back to check traffic if he was in position where mirrors did not show traffic conditions;
- Operator attempted to pull out in a manner which forced other vehicle(s) to change speed or direction;
- Operator failed to make full stop before entering from side street, alley or driveway;
- Operator failed to make full stop before crossing sidewalk;
- Operator failed to yield right-of-way to approaching traffic.

FIXED OBJECT

Collisions with fixed objects are recordable. Examples of fixed objects include:

- Parked (legally or illegally) or disabled vehicles.
- Traffic signs and signals
- Utility poles
- Fences and gates.
- Trees.
- Guardrails and traffic barriers
- Bollards
- Residential or commercial structures.
- Boulders.
- Mailboxes.
- Basketball hoops next to the roadway.
- Fire hydrants.
- Bus shelters.
- Trash cans.

Any contact between the bus and a fixed object should be considered a recordable collision. Striking a fixed object with the bus mirror is a recordable collision. Fixed object collisions usually involve the bus operator's failure to check or properly judge clearances.

Traffic signs and utility poles that "lean" into the roadway, dips in, or the crown of the roadway do not eliminate the bus operator's responsibility for reading the roadway ahead and giving wide berth for unusual hazards. The operator must be constantly on the lookout for such conditions and make necessary allowances.

FOG COLLISIONS

Foggy conditions can be very localized. It is the bus operator's responsibility to ascertain whether dense fog in a particular area is too hazardous to continue on the route or to stop the bus to load or unload customers. In heavy fog, the bus operator should take extra precautions such as activating 4-way "hazard" flashers, until able to stop the bus in a safe location, well off the roadway. Dispatch should be immediately notified by radio by the operator of the situation. A collision resulting from continuing to operate in heavy fog should be considered recordable on the bus operator's part.

FOLLOWING TOO CLOSE

Recordable if:

- Operator failed to maintain safe following distance and have the vehicle under control;
- Operator failed to keep track of traffic conditions and note slowdown;
- Operator failed to ascertain whether vehicle ahead was moving slowly, stopped or slowing down for any reason;
- Operator misjudged rate of overtaking;
- Operator came too close before pulling out to pass;
- Operator failed to wait for car ahead to move into the clear before starting up;
- Operator failed to take total stopping distance into account including air brake lag time

- Operator failed to consider condition of the operator, bus, and the road in determining following distance.

FRONT END COLLISIONS

It is the responsibility of the transit bus operator to avoid striking the vehicle ahead, regardless of its abrupt, unexpected, or illegal stop, by maintaining a safe following distance at all times. This includes being prepared for possible obstructions in the roadway, whether in plain view or hidden by the crest of a hill or the curve of a roadway. Following distance must be maintained in all driving environments, including in heavy traffic, and at transit facilities.

Night speed should not be greater than that which will permit the vehicle to come to a stop within the forward distance illuminated by the vehicle's headlights.

FUELING STATION COLLISIONS

A high degree of caution around bus yard fueling stations is necessary at all times. Bus operators, mechanics, and other transportation staff may be present around the fueling station. It is the responsibility of the bus operator/fueler/hostler to fully secure the bus when fueling and to remember to remove the fuel nozzle when finished, before driving off. Collisions with other vehicles or fixed objects (i.e., bollards, fuel pumps, poles) at or near the fueling station should be considered recordable on the bus operator's part.

GLARE

It is the responsibility of the transit bus operator to adjust speed to traffic and weather conditions, including sun glare, headlight glare, or construction zone glare. Collisions in which the bus strikes another vehicle that has slowed or stopped, or a fixed object, are recordable on the bus operator's part.

Collisions resulting from another motorist being temporarily blinded by glare and striking the stopped transit bus, or striking a customer boarding or exiting the bus, must be carefully assessed for bus operator recordability. Bus operators who encounter a significant problem with sun glare at a particular bus stop during a certain time of the year, increasing the risk that a motorist will be blinded and not see the stopped bus, should report the problem to a supervisor for possible relocation of the stop.

GRADE CROSSINGS

Recordable if:

- Operator attempted to cross tracks directly ahead of train or streetcar;
- Operator ran into side of train or streetcar;
- Operator stopped or parked on or too close to tracks;
- Operator strikes grade crossing signals or devices;

It is the transit bus operator's responsibility to stop and check for approaching trains at all railroad tracks, to make sure no train is approaching before proceeding, and to stop far enough from the tracks after crossing to make sure the rear of the bus is not exposed to danger. A transit bus struck by a train, or a transit bus running into a train

already at the crossing, is a recordable collision on the bus operator's part.

Collisions with rail vehicles, such as trains, streetcars, etc., occurring at grade crossings, in traffic, in a rail yard, switch area, or on private property are the responsibilities of the operator to prevent.

HEAD-ON COLLISIONS

Recordable if:

- Operator was not entirely in the proper lane of travel;
- Operator did not pull to the right and slow down and stop for vehicle encroaching on the lane of travel when such action could have been taken without additional danger.

Collisions with vehicles approaching from the opposite direction must be carefully assessed. The exact location of vehicles, prior to and at the point of impact, must be determined to ascertain which vehicle was out of its proper driving lane. Even though an oncoming vehicle enters the bus operator's traffic lane, it may be possible for the bus operator to avoid the collision by moving to the right, or even driving off the roadway. Driving off the roadway to avoid a head-on collision should not be regarded as a recordable collision on the bus operator's part, even if the bus struck a fixed object or there was physical damage to the bus. However, the investigator must carefully determine, whether or not the bus operator's claim that another vehicle was approaching head-on is valid. A bus operator's failure to attempt evasive action to avoid an oncoming vehicle should result in a finding of recordability on the bus operator's part.

INADEQUATE CLEARANCE

Bus operators are responsible for knowing their vehicle's clearances including space above, below, in front of, and to the sides of the vehicle, and for avoiding "tight" situations where the bus might not fit such as low bridges, overhead doors, awnings, or between parked vehicles on a narrow street. This responsibility includes bus operators using an unfamiliar bus. It is the operator's responsibility to determine vehicle clearance before setting out on the road. Adjusting for snow buildup in the roadway should be taken into account when approaching a low clearance situation. Striking a fixed object due to low or narrow clearance is recordable on the bus operator's part.

INJURIES DUE TO EVASIVE ACTION (SWERVING, BRAKING)

An injury to a customer resulting from evasive action by the bus operator to prevent a collision may or may not be recordable, and the precise circumstances of the incident will have to be thoroughly investigated. If sudden evasive action was itself the result of poor defensive driving by the bus operator, such as failing to adequately read the road ahead for potential hazards, then the injury should be regarded as a recordable incident by the bus operator. If, however, the sudden evasive action was the result of circumstances that could not be reasonably foreseen by the bus operator, such as an oncoming vehicle suddenly steering toward the bus, or a

pedestrian suddenly and without warning turning toward the road and into the path of the bus, then the incident should not be regarded as recordable.

Injuries arising from improper mobility aid securement or operation in conjunction with evasive action by the bus operator should be regarded as recordable on the bus operator's part. Mobility aids, and the customers using them, should be adequately secured so evasive action does not result in a spill or an injury. This standard applies regardless of the type of securement system being utilized, or the type of mobility aid being secured. It is the operator's responsibility and federal law under the American's With Disabilities Act (ADA) to learn how to secure the mobility aid and mobility aid customer properly, seeking assistance from an instructor or supervisor when difficulties arise. The bus should not be moved until the operator is confident the mobility aid and customers are safely secured. However, there may be instances when the ADA requires that a customer be offered transportation even if the mobility aid cannot be secured to the satisfaction of the system or of the operator. Injuries arising from this type of situation are not necessarily recordable on the part of the operator and should be thoroughly investigated.

INTERSECTIONS

Recordable if:

- Operator failed to control speed so that he could stop within available sight distance;
- Operator failed to check cross-traffic and wait for it to clear before entering intersection;
- Operator pulled out from side street in the face of oncoming traffic;
- Operator collided with pedestrian, vehicle or object while making right or left turn;
- Operator collided with vehicle making turn in front of him.

Transit bus operators should approach all intersections prepared to stop. Preparing to stop includes covering the brake pedal as the vehicle travels through the intersection. Blind intersections must be treated with special caution. Transit bus operators are responsible for accommodating for view obstructions on their buses, such as mirrors, mirror brackets, structural posts and pillars, and door jams.

"Rocking before rolling" into an intersection to "look around" view obstructions on the bus is considered safe practice throughout the transit bus industry. Failing to see an approaching vehicle in an intersection due to a view obstruction on the bus is an indication of a recordable collision on the bus operator's part.

Transit bus operators are also responsible for listening for sirens and horns indicating the approach of an emergency vehicle. In situations where the importance of hearing is even more pronounced, such as at blind intersections in urban settings, where emergency vehicles are commonplace, the bus operator should open the operator window to better hear.

LANE ENCROACHMENT COLLISIONS

Recordable if:

- Operator failed to activate turn signal;
- Operator failed to check traffic in next lane, behind the bus, and in front of the bus

Lane change collisions are recordable. A transit bus operator is responsible for being aware of the presence of other vehicles traveling next to the bus. A transit bus operator is responsible for using a combination of driving mirrors and direct observation to monitor vehicles. The operator should drop back to avoid traveling in the blind spot of another vehicle and to avoid a collision resulting from another vehicle suddenly changing lanes into the path of the bus. It is the transit bus operator's responsibility to merge safely into traffic as well as to avoid other vehicles entering the driving lane in an unsafe fashion. When being passed by another vehicle, the bus operator should also be prepared to drop back to allow the vehicle to safely re-enter the lane.

MECHANICAL FAILURE

Recordable if:

- Defect was of a type which operator should have detected in making pre-trip or on route inspection of vehicle;
- Defect was of a type which operator should have detected during the normal operation of the vehicle;
- Defect was caused by operator's abusive handling of the vehicle.

It is the responsibility of the Operator to inspect a vehicle prior to its use and to report unsafe vehicle operations.

Any collision caused by mechanical failure that reasonably could have been detected by the operator, but went unheeded should be judged recordable. It is the operator's responsibility to report unsafe vehicle conditions for repairs and to get immediate repairs where continued operation might result in a collision. When mechanical difficulties occur unexpectedly during a trip, and a operator upon discovery, fails to check with his company for emergency instructions prior to a collision, the collision is recordable. An example of this might be continuing on route after noticing the low air pressure warning light has activated.

A collision caused by mechanical failure that results from abusive driving should be considered recordable.

Transit bus operators are responsible for noting "prior damage" during the pre-trip inspection of the bus. A claim that damage to the bus was the result of an earlier collision by another operator cannot be supported if the bus operator had not noted it on the pre-trip inspection report.

MOBILITY AID CUSTOMER INJURY

Failure to secure the mobility aid properly, resulting in a customer fall, are recordable incidents on the bus operator's part. Failure to use the mobility aid securement system as intended by the manufacturer - are indications of a recordable incident. A mobility aid customer fall occurring mid-route is a recordable incident on the

operator's part.

An injury resulting from a customer in a mobility aid tipping over on or falling off the lift is a recordable injury.

It is the operator's responsibility and federal law under the American's With Disabilities Act (ADA) to learn how to secure the mobility aid and mobility aid customer properly, seeking assistance from an instructor or supervisor when difficulties arise. The bus should not be moved until the operator is confident the mobility aid and customers are safely secured. However, there may be instances when the ADA requires that a customer be offered transportation even if the mobility aid cannot be secured to the satisfaction of the system or of the operator. Injuries arising from this type of situation are not necessarily recordable on the part of the operator and should be thoroughly investigated.

NON-COLLISION

Many collisions, such as overturning or running off the road, may result from emergency action by the operator to preclude being involved in a collision. Examination of his driving procedure prior to the incident may reveal speed too fast for conditions, or other factors. The operator's actions prior to involvement should be examined for possible errors or lack of defensive driving practice.

Customer collisions in any type of vehicle are recordable when they are caused by faulty operation of the vehicle by the operator. Even though the incident did not involve a collision of the vehicle, it must be considered recordable when the operator stops, turns, or accelerates abruptly.

NIGHT COLLISIONS

Darkness is not a justification for a collision. Transit bus operators should be expected to adjust speed downwards in dark or low-light conditions.

OBJECT PIERCING BUS

Transit bus operators are responsible for recognizing potential hazards in the path of the bus, including objects protruding from other vehicles, construction vehicles and equipment near the roadway, overhanging signs and tree limbs, etc. A collision resulting from failing to recognize a protruding object in the path of the bus should be regarded as recordable on the bus operator's part.

However, if an object is suddenly and unexpectedly expelled by another vehicle on the roadway and strikes and subsequently enters the bus (for instance, a wheel comes off another vehicle, pipes or lumber or stones being carried by other vehicle come loose, etc.), the collision is non-recordable on the bus operator's part, so long as the bus operator was allowing adequate following distance to the vehicle in question.

OFF-ROAD VEHICLES/MAINTENANCE VEHICLES

Collisions with small, off-road vehicles, such as ATVs or snowmobiles, which have entered the roadway, are often recordable on the bus operator's part. The bus operator is responsible for checking the terrain ahead of the path of the bus for

hazards, including off-road vehicles. In areas where a major snowmobile trail crosses the roadway, a higher degree of bus operator alertness is called for. It is the responsibility of bus operators to stay alert for ATVs or snowmobiles driving on the shoulder of the roadway, whether legally or not, and to give them wide berth when passing on the adjoining roadway.

Individuals operating lawn mowers, snow blowers, or other equipment should be carefully watched for the possibility of suddenly entering the roadway. Striking an individual operating a lawnmower or snow blower is a recordable collision.

However, when a small, off-road vehicle enters the roadway laterally from the rear quarter of the bus and strikes the side or rear of the bus, it may not be recordable on the bus operator's part unless other factors were involved.

OFF-ROAD COLLISIONS

Bus operators are responsible for maintaining control of the bus, even when evading a hazard. Collisions in which the bus operator swerved to avoid a hazard but then lost control of the bus and went off-road should be considered recordable collisions. Incidents in which the bus leaves the roadway due to momentary bus operator inattention or because the bus operator drove onto the shoulder to pass a vehicle stopped in the driving lane are recordable. Rollover incidents resulting from the passenger-side tires of the bus becoming trapped in the soft shoulder, resulting in the bus dropping into a roadside ditch, are recordable.

However, collisions in which the bus operator deliberately drove off the road to avoid a more catastrophic collision, such as a head-on collision, are not recordable collisions on the bus operators' parts.

OPERATOR INJURIES

Slips and falls on the bus steps are recordable. Operators are responsible for holding the handrail when boarding or exiting the bus. Operators are responsible for safe footwear and clothing. Shoes or boots with good traction are essential for the variety of surface conditions operators will encounter as they get on and off the bus. Injuries due to slips or trips on wet or slippery surfaces must be considered recordable. Slippery surfaces are a foreseeable occurrence.

Operators should not wear clothing with long, dangling drawstrings, straps, or other loose items that could become snagged in equipment such as handrails, doors, fire extinguisher bracket, or mobility aid lift mechanism. Injuries due to operator clothing snagging in equipment are recordable.

Operators should exercise caution when activating a mobility aid lift. Operators are required under the ADA to know how to work the mobility aid lift. Fingers, hands, and feet must be protected from the lift mechanism or platform.

PARATRANSIT CUSTOMER FAILURE TO WEAR SAFETY BELT

If the bus is equipped with safety belts (lap, or lap-shoulder) and the paratransit system policy or state law requires their use by customers, and a customer is injured in a collision or non-collision event due or partly due to failure to use the safety belt, the injury should not be considered recordable on the bus operator's part if the operator had made a reasonable effort to enforce customer safety belt use by

informing and reminding them of the policy.

PARKED VEHICLES

Non-Recordable if:

- Operator was properly parked in a location where parking was permitted;
- Vehicle was protected by emergency warning devices as required by DOT and state regulations or if operator was in process of setting out or retrieving signals. These provisions shall apply to the use of turn signals as emergency warning lights under DOT regulations.

It is the bus operator's responsibility to avoid striking a parked vehicle, whether legally or illegally parked. If lateral clearance between parked vehicles is questionable, the bus operator should not attempt it. Striking a parked vehicle is a recordable collision, including striking the mirror of a parked vehicle, or striking the parked vehicle with the bus mirror.

Striking the vehicle door that has suddenly been opened by an occupant as the bus is about to pass should be regarded as recordable on the bus operator's part. It is the bus operator's responsibility to be aware of potential hazards, including occupied vehicles near the roadway.

PARKING

Unconventional parking locations, including double parking, illegal parking, failure to put out warning devices, etc. generally constitute evidence for judging a collision recordable.

Rollaway collisions from a parked position normally should be classified recordable. This includes failure to properly chock wheels or to turn wheels toward the curb to prevent vehicle movement or using the interlock as a braking device.

PASSING AND BEING PASSED

Collisions While Passing

Recordable if:

- Operator passed where view of road ahead was obstructed by hill, curve, vegetation, traffic, adverse weather conditions, etc.;
- Operator attempted to pass in the face of closely approaching traffic;
- Operator failed to signal change of lanes;
- Operator pulled out in front of other traffic overtaking from rear;
- Operator hit other vehicle while returning to right lane.

Collisions While Being Passed

Recordable if:

- Operator failed to stay in his own lane and hold speed or reduce it to permit safe passing.

Failure to pass safely indicates faulty judgment and the possible failure to consider one or more of the important factors a operator must observe before attempting the

maneuver. Unusual actions of the operator being passed or of oncoming traffic might appear to exonerate an operator involved in a passing collision; however, the entire passing maneuver is voluntary and the operator's responsibility.

Sideswipes and cut-offs involving an operator while being passed are recordable when failing to yield to the passing vehicle by slowing down or moving to the right where possible.

PEDESTRIANS

Recordable if:

- Operator did not reduce speed in area of heavy pedestrian traffic;
- Operator was not prepared to stop;
- Operator failed to yield right-of-way to pedestrian.

It is the bus operator's responsibility to avoid striking a pedestrian. Being aware of potential hazards in or near the travel path of the bus, including people, is fundamental to defensive driving. Adjusting speed downward because there are pedestrians in the vicinity is an indicator of a professional operator, as is giving "wide berth" to pedestrians in, or next to, the roadway.

High-risk pedestrians should be approached and passed with even greater caution and the bus operator should be prepared to stop. Children, the elderly, joggers, or individuals appearing agitated or impaired, should be passed with the highest degree of caution. Transit bus operators should be expected to drive very slowly and cautiously at bus stops.

Striking a pedestrian standing at a corner while the bus is making a right turn, due to the rear wheels of the bus "off-tracking" over the curb and over the pedestrian, is a recordable collision on the bus operator's part. Transit operators are expected to "rock forward and back in their seats" while turning at intersections to look around blind spot areas of their vehicle. Failure to do so and striking a pedestrian or vehicle while turning is a recordable collision. However, not all pedestrian collisions are recordable by the bus operator. It is not reasonable to expect bus operators to see individuals running unexpectedly from well off the roadway and well out of the operator's field of vision, into the side of the bus. Such incidents should be regarded as non-recordable on the bus operator's part.

RADIO AND CELL PHONE USE

Collisions resulting wholly or in part from the bus operator being distracted while talking on the two-way radio are recordable on the bus operator's part. It is the bus operator's responsibility to avoid talking to Radio at higher-risk moments when attention must be focused on the driving tasks outside the bus.

A collision attributable to the bus operator's misuse of a cell phone is recordable.

READING ROUTE SHEETS OR PADDLES WHILE DRIVING

Collisions resulting wholly or in part from the bus operator reading the route sheet while operating the bus, or while engaged in loading or unloading customers at a bus stop, are recordable on the bus operator's part.

REAR-END COLLISIONS

Non-Recordable if:

- Operator's vehicle was legally and properly parked;
- Operator was proceeding in her own lane of traffic at a safe and lawful speed;
- Operator was stopped in traffic due to existing conditions or was stopped in compliance with traffic sign or signal or the directions of a police officer or other person legitimately controlling traffic;
- Operator was in proper lane waiting to make turn

Recordable if:

- Operator was passing slower traffic near an intersection and had to make sudden stop;
- Operator made a sudden stop to park, load or unload;
- Vehicle was improperly parked;
- Operator rolled back into vehicle behind while starting on grade.

A stopped transit bus struck in the rear by another vehicle is not a recordable collision on the bus operator's part, if the following conditions are met:

- Bus operator allowed adequate following distance between the bus and the vehicle ahead, permitting a gradual stop when the vehicle ahead stopped unexpectedly, allowing motorists behind the bus time to react and stop as well.

Investigation often discloses that operators risk being struck from behind by failing to maintain a margin of safety in following distance. Rear-end collisions preceded by a roll-back, an abrupt stop at a grade crossing, when a traffic signal changes, or when the operator fails to signal a turn at an intersection, should be charged recordable. Failure to signal intentions or to slow down gradually should be considered recordable.

SLIPPERY ROAD CONDITIONS

Slippery road conditions are not a justification for a collision. It is the bus operator's responsibility to adjust speed and vehicle maneuvers appropriately for adverse road and weather conditions

TALKING TO CUSTOMER WHILE DRIVING

Conversation between bus operator and customers can cause a collision. Conversation cannot be allowed to become a distraction while the bus is moving or while customers are getting on or off. The internal overhead mirror over the bus operator's head should not be used for carrying on a protracted conversation with a customer. A collision attributable to unnecessary conversation on the bus operator's part is recordable.

TRANSIT CENTER COLLISIONS

Striking a pedestrian at a transit center is a recordable collision. Backing into another vehicle, a fixed object, or a pedestrian at a transit center is

recordable on the bus operator's part, even if the other vehicle was illegally parked or the pedestrian was violating safety rules

Striking a parked vehicle on transit grounds, including another parked bus, or an illegally parked vehicle, is a recordable collision on the bus operator's part.

Leaving a bus improperly secured on transit grounds, so it rolls into a fixed object or another vehicle, is a recordable collision on the bus operator's part.

TURNING

Transit bus operators are responsible for making safe, smooth turns. "Off tracking" of the rear wheels over a curb at a corner is dangerous; if an injury or property damage results, the incident should be regarded as recordable on the bus operator's part.

Sudden or high speed turns that throw customers from the seats, resulting in an injury, are recordable incidents on the bus operators' parts.

Transit bus operators are responsible for carefully checking for pedestrians, bicyclists, motorcyclists, and other small vehicles at or near corners before beginning a turn.

Turning in front of an oncoming vehicle because its turn signal was activated is dangerous. A collision resulting from such a circumstance is recordable on the bus operator's part.

If there are multiple left turn lanes, a collision caused by the operator's failure to turn from the rightmost of the turn lanes may be the recordable.

Turning movements, like passing maneuvers, require the most exacting care by an operator. Failure to signal, to properly position the vehicle for turn, to check the rearview mirrors, to check pedestrian lanes, or to take other defensive action should be considered.

UNSECURED BUS

A collision resulting from an unsecured bus (whether occupied or parked) rolling into a fixed object, a vehicle, or a pedestrian, is recordable on the bus operator's part.

WATER ON ROAD

It is the bus operator's responsibility to carefully read the road ahead for standing water. Collisions resulting from the bus hydroplaning through standing water should be regarded as recordable on the bus operator's part. Transit bus operators should not attempt to drive through flooded roadways. If the bus stalls or is flooded in such a situation, it is a recordable incident on the bus operator's part.

WEATHER

Adverse weather conditions are not normally an excuse for being involved in a collision. Rain, wind, snow, fog, sleet, or icy pavement increase the hazards of driving. Failure to adjust driving to the prevailing weather conditions could be a reason for deciding if a collision is recordable. Failure to use safety devices such as windshield wipers, defroster, or tire chains could be cause for a determination of a collision as recordable.

WIRE ON BUS

Avoiding low-hanging wires is the responsibility of the transit bus operator. Low-hanging wires are common after ice or wind storms and transit bus operators must remain highly alert when driving in such situations. Incidents in which the bus strikes and becomes entangled with a low-hanging wire or backs into a low hanging wire are recordable on the bus operator's part.

However, if the wire falls just as the bus is passing under it, or falls onto a stopped bus (for instance, at an intersection, when another vehicle strikes a utility pole), the incident should be judged non-recordable on the transit bus operator's part.

Because of the danger of electrocution, appropriate response after a wire has come in contact with the bus is the responsibility of the bus operator. Evacuating the bus in such a situation could be deadly and should only be attempted in the most dire of circumstances, such as the bus being on fire.

COLLISION REVIEW BOARD

Collision review boards have been used with varying degrees of success at transit systems. They were originally established to allow a committee decision on the recordability of a collision rather than just one supervisor making the decision. It was hoped that this would take any personality conflicts out of the decision making process.

The collision review board may meet to determine the recordability of some or all collisions, and it may be given the responsibility of recommending steps to be taken for the prevention of similar collisions in the future.

To be effective, members of the collision review board must have thorough training in the concept of recordability and defensive driving. All members of the board must have the same complete understanding of these concepts as the supervisory personnel in the company. They must also be willing to apply these concepts in an unbiased manner.

The key to a properly functioning collision review board is a common understanding of and ability to apply the concepts of preventability and defensive driving. This is essential so that all members of the board will look at collisions with this common point of view and so they will apply the standards of safe driving performance the same way when reviewing collisions.

Methods of Operation

The collision review board should meet at intervals which will allow it to consider collisions on a "current event" basis. Extended delays in making preventability decisions are not an acceptable procedure for either the operator involved or the transit system.

At many transit systems, the board acts only as an appeals court. In such cases, the supervisor or safety manager makes an initial determination as to the preventability of each collision. If the involved operator does not concur with the classification, a request may be made for the collision to be reviewed by the board. In some instances, the operator must give specific reasons for requesting such a reconsideration. When a sufficient number of appeals have accumulated, the board may be called into session.

Regardless of the type of collision review board that is established, the primary role of the safety manager should be that of chair of the review board. As such, the chair would present the facts of the collision and outline the reasons for considering the collision recordable.

Organization of the Collision Review Board

Collision review boards are generally composed of three to seven members, in order to provide good range of thought in determining recordability. A large board may become cumbersome and use an excessive amount of time in reaching the recordability decision. Board membership should include operator representatives, management representatives and a supervisor assigned safety responsibilities. Some companies invite outside personnel such as an insurance company safety engineer to sit on the board. The outside person must have an in-depth understanding of the principles of preventability and defensive driving in order to function properly.

To be eligible to serve on the collision review board, all individuals must have an interest in collision prevention. A operator should be required to have at least one full year of collision free driving with the company. Supervisors should have the respect of company employees and should also have no recordable collisions within the past year. Members of the board should be appointed by top management upon the recommendation of the safety manager. Operator representatives may be selected by other company operators by a simple majority vote or may be appointed on a rotating basis. The rotating of all members is desirable to foster a more wide spread interest in the safety program. Members should not serve more than one year on the review board.

Board Procedure

Meetings of the collision review board should be held at times that are convenient for all members. Each member should be provided with a copy of all written reports of the collision, and when feasible, with copies of any supplementary information that might be helpful in rendering a proper decision as to the recordability of the collision. Provision should be made for diagramming each collision.

To promote impartiality of decisions, it is desirable that the name of the involved operator not be known by the board members. In practice, however, such anonymity is often difficult to achieve. It may also be desirable to have

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the involved operator appear before the board to state their own case and to present any viewpoints on the facts being discussed. If the operator is permitted to appear before the board, then the individual should be asked to leave before the vote on recordability is taken.

The safety manager should remind the collision review board about the concept of recordability so each case is reviewed without bias toward the operator. Only the facts should be discussed as they relate to the definitions of recordability and defensive driving. The safety manager should take an active role in any proceedings of the board, if they want to recommend measures for the prevention of future similar collisions.

A written record should be made of the board's decisions and the reasons for such decisions, as well as a record of any recommended preventive measures. All preventive measures recommended by the board should be discussed in open safety meetings with all operators, without mention of the name of the operator involved. The same material can be used for in-house publications, bulletins, and for operator training .

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