

SCHOOL BUS ACCIDENT

**Management,
Documentation,
&
Investigation**



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Chapter One: Introduction and Overview

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Chapter objectives

By the conclusion of this chapter, investigators will have a basic understanding of school bus accidents and school bus accident investigation, and will be able to:

1. Explain the main goal of this manual.
2. Explain the two main purposes of accident investigation.
3. Identify common myths about school bus accident investigation.
4. Explain the importance of investigating all accidents, including “minor” accidents.
5. Explain how to increase the reporting of “near-hit” incidents.
6. Describe three ways school bus accidents are unique.
7. Describe the various levels of accident investigation.
8. Describe the pressures sometimes faced by accident investigators, and the personal standards and ethical qualities needed to investigate accidents professionally.

1a. The goal of the manual

The main goal of this manual is to convince and prepare Pupil Transportation Supervisors, Terminal Managers, Safety Directors, and the schools they serve to establish a clear and consistent accident management system in their own operations.

Every effort has been made to keep the contents of the manual pragmatic and user-friendly so that in-house supervisory and training staff, often wearing a dozen different hats each day, can master basic accident documentation and investigation techniques.

This is not an “accident reconstruction” manual. Accident reconstruction involves technical skills that go well beyond the scope of this document. It is not the intent of this manual to create instant “Accident Reconstructionists.” Rather, it is to help operations learn how to document information and evidence that an Accident Reconstructionist might later find useful should a comprehensive reconstruction be necessary - for instance, in preparation for litigation.

The manual was written in the belief that school districts and school bus contractors should not rely on other parties to investigate accidents. Because of the high stakes involved in pupil transportation, including its unique exposure to litigation, the premise of this manual is that every accident should be appropriately and competently documented.

Although its main goal is to improve in-house accident investigations, the material covered will also be useful to individuals brought in to investigate a school bus accident from the outside, including expert investigators or reconstructionists unfamiliar with the specifics of school bus operations.

1b. How the manual is organized

The manual begins with an Introduction and Overview of school bus accidents and school bus accident investigation (this chapter). The next three chapters of the manual are titled and correspond to the three fundamental components of an accident management system:

- Policy, preparation, and planning. (Chapter Two)
- At the accident scene. (Chapter Three)

- Follow-up. (Chapter Four)

In addition, the manual includes an Appendix that includes reproducible forms and other materials corresponding to topics covered in the text.

This manual serves as the accompanying text for the Pupil Transportation Safety Institute's three-day “School Bus Accident Management, Documentation, and Investigation” workshops; however, it is intended for self-study as well. Review questions at the end of each chapter allow readers to test their comprehension of the topics covered. Answers to review questions and solutions to exercises are included in the manual's Appendix (p. 161).

1c. Basic objectives of the manual

Careful study of this manual, including completion of its review questions and exercises, will provide readers with:

1. An overview of school bus accidents and school bus accident investigation;
2. The ability to evaluate their operation's current level of accident readiness;
3. The ability to accurately document evidence at a school bus accident scene; and
4. An understanding of how to follow up to a school bus accident.

Within each of these basic objectives, which correspond to the four chapters of this manual, there are many more specific objectives. Specific objectives are identified at the beginning of each chapter.

1d. Purposes of accident investigation

School bus accident investigators, novice or experienced, must periodically remind themselves of the basic purposes of accident investigation. By definition, accidents are sudden, unplanned, and unpleasant events. While an accident typically lasts just a few seconds, the physical, not to mention psychological, chain of events immediately before, during, and after a crash is often highly complex.

All the features of accidents mentioned above combine to create a real challenge for pupil transportation staff. The sudden, unplanned, and unpleasant aspect of accidents - combined with frantic daily pace of most pupil transportation operations - makes it tempting to just react to each accident as it occurs, without a long-term management plan. And even an operation lucky and smart enough to have a trained investigator on staff can lose perspective. The characteristic complexity of a crash event makes it easy for investigators to get swept up in the details and minutiae of the physical evidence, neglecting the bigger context in which an accident has occurred.

Investigators must keep in mind that the root causes of an accident can be just as complex as the physical chain of events of the vehicles that collided - or even more complex. And they must remember that although accidents can sometimes be strikingly similar to each other, sharing common characteristics and revealing common patterns, there are also ways in which, upon closer scrutiny, almost every accident is singular and unique.

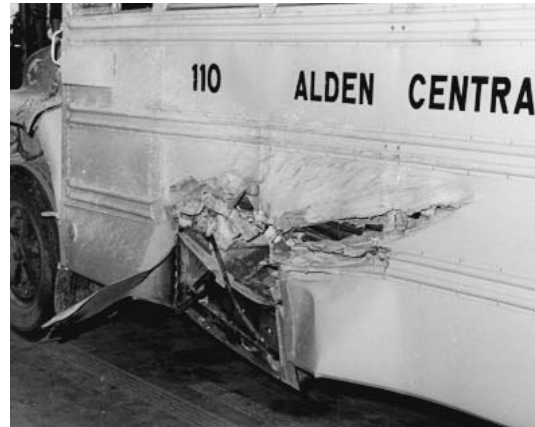
There are two basic purposes of accident investigation:

1. **Learning.** Identifying the cause or causes (almost always the latter) of an accident may prevent future accidents. This is the most important reason to investigate accidents.

Important safety lessons may be distilled either from an investigation of a single accident or by analyzing accident data in the aggregate. Sometimes a single incident can reveal a critical training, equipment, or operational deficiency that needs to be addressed and corrected. But sometimes important safety problems are revealed only through a review of many accidents.

Accident databases can be established at many different levels. For instance, each pupil transportation operation, whether it consists of 10, 100, or 1000 buses, should create and maintain its own accident database. This is a specific objective of this manual. A local database has two purposes. First, it will help identify and track problem drivers who need retraining or, possibly, another line of work. Second, operation-wide training gaps or other types of safety deficiencies and shortcomings may become apparent as patterns emerge over time. (The purpose and methodology of creating an accident database is explained in Chapter 4, "Accident Follow-up")

More comprehensive accident databases, usually developed and maintained by government agencies or safety organizations, have been essential in improving traffic safety in general and school bus safety specifically. For instance, the loading and unloading accident database maintained by the State of Kansas for many years helped the school bus industry pinpoint where and how children are most at risk. That lesson in turn led to greatly improved driver and student training.



2. **Protection.** In a litigious society, self-preservation is not an ignoble motive. Thorough in-house documentation of an accident can be helpful in court, or (more commonly) in avoiding an unfounded or exaggerated out-of-court settlement. Premature settlements for dubious claims plague the school bus industry. Settlements are rationalized as "saving court costs," but each irrational settlement becomes a precedent that encourages additional unscrupulous parties to sue. When faced with a claim (sometimes long after the accident occurred), a school or bus company that has ready access to well-maintained and accurate documentation of what actually happened - for instance, photos, measurements, and field sketches showing that the school bus was not out of its lane when the accident occurred - may convince the party threatening to sue to reconsider. Without documentation, however, the school or bus company is defenseless - no matter what actually happened.

This is not to say that documentation will be helpful to an operation in every instance. If a school bus driver truly and clearly made a serious mistake, resulting in an injury to a child, no amount of in-house accident documentation will help; in fact it could hurt. In such a situation, accepting

responsibility for what happened can be not only the moral strategy, but fiscally preferable as well. Fighting the inevitable can be a costly proposition in civil court, as some school bus operations have learned the hard way. Once a jury becomes involved, a finding of gross negligence against a transporter, with punitive damages attached, is a possibility - especially when the case involves a child injured or killed in a school bus accident.

However, because most school districts and bus companies have very good safety records, and because they are so easily seen as “deep pockets” by attorneys and the public, a consistent policy of meticulous documentation is generally a good bet.

1e. Myths about accident investigation

Several myths about school bus accidents sometimes prevent pupil transportation providers from adequately preparing in-house accident investigators and developing comprehensive accident management systems.

1e1. Myth #1: “Accident investigation is only necessary in major accidents”

The failure to adequately investigate and document “minor” accidents is a serious weakness across the school bus industry. The need for documentation and investigation is evident in major accidents, in which serious injuries or fatalities have occurred, but less severe accidents are sometimes regarded as “not important enough” to warrant the time and energy for a decent investigation. This is a shortsighted view that exposes the operation to increased liability while at the same time decreasing its ability to prevent accidents - major or minor.

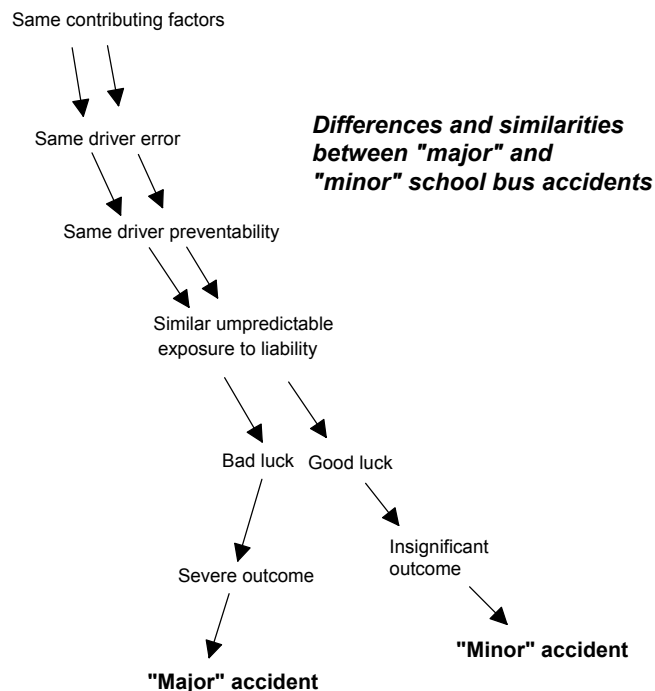
In fact, the terms “major accident” and “minor accident” are dangerously simplistic. In reality, what are the differences between them? In common usage, the terms usually describe the difference in the outcomes of an accident. In other words, “major” typically refers to an incident in which someone was injured or killed, or someone’s property was seriously damaged or destroyed. “Minor,” on the other hand, usually means an incident in which no

one was hurt and the property damage, if any, was relatively insignificant.

States have statutory thresholds for determining when an accident is considered too “minor” to be reported. Because of the enormous volume of motor vehicle accidents that occur each year, states are forced to make such a distinction. But basing local accident management policy on state criteria makes little sense. State accident reporting requirements should be seen as minimum guidelines only.

If accidents are defined not solely in terms of outcomes but rather of causes (or “contributing factors,” a somewhat more precise term), the difference between a “major” and “minor” accident is often much harder to detect. In fact, exactly the same set of contributing factors can result in two accidents with profoundly different outcomes. For instance, one bus driver may take a right turn too tight, scuffing the right rear tire on the curb. The next day another bus driver may also take that same right turn too tight, running over a pedestrian waiting at the corner. The outcomes could hardly be more different, yet the contributing factors could be identical (e.g., poor mirror use, poor vehicle control, driver distraction, training gap, rushing, etc.).

In terms of outcomes, the difference between major and minor accidents is often just luck. If the causes of minor accidents are not determined and corrected



through a consistent accident management system, it's only a matter of time until the luck runs out.

For an accident investigator interested in identifying the causes of accidents, or for anyone whose main goal is to prevent accidents, the importance of carefully analyzing all accidents, including minor accidents, should be apparent.

1e2. Myth #2: “The police will take care of investigating accidents”

Learning to work cooperatively with law enforcement at accident scenes is important. However, relying solely on the police to investigate school bus accidents is a mistake. Police should not be expected to understand the unique exposure to litigation that exists in almost any school bus accident. What may appear as “just another fender-bender” to a police officer, is seen as a future lawsuit to a transportation supervisor. And in bad weather or other situations, the responding police agency may be stretched thin, and the officer at the accident scene may not have time to conduct a thorough investigation.



Not all police responding to motor vehicle accidents are trained, or adequately trained, in accident investigation. This is especially true in less serious accidents. In severe accidents, specially-trained accident investigation or reconstruction teams are often called in by the law enforcement agency. In such cases the transportation supervisor can feel much more assured that the accident will be thoroughly investigated and essential evidence and information accurately documented. However, even in this case the Transportation Supervisor or Manager should work side-by-side with the police investigative team. Because school buses are such a specialized form of transportation, in-house transportation staff can often provide helpful information (i.e., about the bus, students, bus route, driver, etc.) during a reconstruction.

In a typical school bus crash, the police officer called to the scene is untrained and busy, and the potential for inadequate or inaccurate information on the accident report is high.

1e3. Myth #3: “The insurance company will take care of investigating accidents”

School districts and school bus contractors should ask for (and expect) assistance from their insurance carrier's risk management division in all aspects of accident management. But in the real world, insurance companies rarely send their own investigator to the scene, usually only after a very severe incident.

When in-house investigators fail to document information at the accident scene, insurance companies are more likely to settle a claim out of court.

1e4. Myth #4: “The contractor will take care of investigating the accidents”

Ultimate legal responsibility for pupil transportation safety resides with the board of education. Although many school bus contractors have excellent safety programs and conduct competent accident investigations, school districts should send a liaison to their contractors' accidents, and should carefully review them afterwards. Contracts should require all accidents and incidents to be immediately reported to the school district. This requirement should apply to contractors providing occasional long-distance charter service to schools, as well as any subcontractors they provide.

1f. Reasons for investigating all school bus accidents and incidents, including “minor” accidents

The main thesis of this manual is that every school bus accident or injury resulting in property damage or injury to any party should be investigated according to a clear and consistent set of procedures and policies, no matter how minor and no matter how and where it occurred.

This includes not only minor property damage collisions (“fender-benders”), but also the following events, which are sometimes not considered “accidents”



Fires should be carefully investigated

according to state reporting requirements or tradition, or seen as worthy of investigation or documentation:

- **Non-collision events.** Non-collision events resulting in injury arising from a driver action, such as students falling out of bus seats during an evasive maneuver, or wheelchair tip-overs during loading or transport, should be documented and investigated just as carefully as injuries arising from crashes per se even if reporting is not mandated by the state. An injury resulting from a non-collision event can still result in a lawsuit. There is evidence that injuries to students in wheelchairs is under-documented.
- **Bus stop accidents.** No rational argument can be made for excluding student loading or unloading accidents from thorough investigation. Because the great majority of student fatalities occur during loading or unloading, there is no more important type of accident for a school bus accident investigator. (See Section 3e, “Investigating school bus loading and unloading accidents”)

There are two primary categories of bus stop accidents. In both, the school bus is stopped or preparing to stop, with its student flashers activated, to load or unload children.

- Another vehicle that passes the bus, or the bus itself, strikes a child entering or leaving the bus.

- Another vehicle strikes the bus while it is stopped or preparing to stop to load or unload children, or strikes another vehicle that was stopped for the bus, or strikes a fixed object near the stopped or stopping bus.

For reporting purposes, state guidelines vary (or in some states don't exist at all) as to exactly when it

can be said that a bus “was involved” if another vehicle crashes in the vicinity of a bus stop but does actually strike the bus or a child getting on or off. A reasonable guidelines for a local pupil transportation operation is, if the bus has its student flashers activated (either amber “pre-warning” or red flashers) when a crash occurs, the incident should be considered a school bus accident and merits documentation and investigation just like any other accident.

This is not to imply that either the school bus driver or employer is necessarily “at fault” in any way in such incidents. It may turn out that neither the bus driver nor his or her employer did anything wrong in such an incident (i.e., flasher use was appropriate, bus stop was approved, bus stop was reasonably safe, child was adequately trained, etc.). Many bus stop incidents are the simply result of other motorists’ inattention. Maybe a daydreaming motorist suddenly noticed a school bus stopped with its student flashers activated, panicked, locked the brakes, and slid into a ditch. Neither the school bus nor, thankfully, any child getting on or off of it, was physically involved in the crash. But there is no telling what a motorist (or the motorist’s attorney) will claim at a later date in an effort to place the blame on the school district or bus company. Typical claims in such bus stop incidents include:

- “The bus didn’t have its flashers on.”
- “The bus driver threw the flashers on at the last second.”
- “The bus stopped suddenly, with no warning.”
- “The bus was sitting in the road with its flashers on for a long time.”
- “None of the buses in this town use the flashers correctly.”

Protection against exaggerated or baseless litigation is one of the two main purposes of accident investigation. Remembering this helps investigators understand the importance of carefully responding to and documenting bus stop incidents in which the bus itself is not physically involved, even if no state report needs to be filed, and neither the bus driver nor the operation could have prevented the incident.

Of course, there are bus stop incidents where an

honest investigation concludes that the bus driver did in fact contribute to the incident in some manner, for instance by activating the yellow pre-warning student flashers too late, not allowing other motorists time to react safely, or by not training the child involved adequately in safe boarding or exiting procedures. There are also bus stop incidents in which the argument can be made (fairly or not depending entirely on the specific circumstances of the case) that the location of the bus stop was unsafe. Each bus stop incident is different and investigators must seek nothing less nor more than the facts.

School loading zones should also be considered “bus stops.” When a child in a school loading zone is struck by a bus, the incident should be considered a school bus accident just as though it had occurred on the route. Inadequate supervision of children in school loading areas is a common problem in school districts across the country, and often creates hazardous conditions as buses arrive and depart.

- **Fires.** Although states may not require it, bus fires, even “minor” fire incidents such as electrical shorts, should be investigated and documented just like a crash. Because they always aren’t considered “accidents,” school bus fire incidents are probably underreported and under-documented nationally. Any school bus fire incident should be taken seriously. The potential for catastrophe is real. If fire incidents are not investigated, the opportunity to learn why they occur and what might be done to prevent them fades.
- **Driver and attendant injuries.** Driver or attendant injuries that occur in the course of their duties should be investigated and documented even if they aren’t the result of a crash. For instance, if a bus attendant falls in the aisle and is injured when the bus stops quickly, the incident should be investigated and documented just like a crash.
- **Bus yard accidents.** Regrettably, accidents are common in school bus yards. Many but not all are minor; fatalities have occurred. Failure to investigate bus yard accidents by the same standards that apply to on-the-road accidents, effectively encourages still more bus yard accidents to occur.

The pressure to not investigate and document certain types of accidents may come from custom and tradition (“we’ve never photographed accidents in the bus yard”) or from a general sense of being already overwhelmed

and less than eager to take on more responsibilities. But in the long run, failing to consistently investigate all accidents hurts the operation - and the entire school bus industry.

1f1. Eight reasons to investigate all accidents

Reasons to investigate all accidents include:

1. **Accountability.** Drivers should understand they will be held accountable for every incident, including “minor” accidents, scratches, and bus yard “dings,” and no matter where they occur. Driver accountability is pivotal to school bus safety.
2. **Human nature.** Drivers sometimes have surprising definitions of what constitutes a “minor accident.” Permitting the driver involved, from the scene, to determine whether an accident is worthy of investigation (i.e., “I just clipped the mirror of a parked car, that’s all - it’s minor.”) is a dangerous practice. No matter how “minor” it sounds based on the driver’s initial radio call, a predetermined accident response team should immediately go the scene of every accident.
3. **Identifying at-risk drivers.** A minor accident can reveal a potentially major safety problem with a driver.
4. **Identifying training gaps, equipment problems, or other operational deficiencies.** Even a minor accident can reveal an important training gap, equipment problem, or operational deficiency.
5. **Identifying patterns.** Charted over time, even minor accidents can reveal important patterns and safety problems.
6. **Consistency.** Consistent and thorough investigation of all accidents protects supervisors, managers, and safety staff from charges of arbitrary and capricious harassment against individual drivers.
7. **Unpredictable exposure to litigation.** Student injuries arising from school bus accidents are uniquely susceptible to litigation, and even “minor” damage can lead to a lawsuit. A student injury resulting from a non-collision event, such as a child falling out of a wheelchair on the wheelchair lift, is just as likely to result in a lawsuit as an injury

resulting from a crash. Litigation is unpredictable and depends on factors which are out of the transportation operation's control, such as the attitude of the other party towards the school district or bus company, greed, the type of attorney involved, etc. The safest approach is to assume the worst and investigate and document every accident as though it was going to wind up in court.

8. **Practice!** Documenting an accident scene is not simple. To be competent in techniques such as photography, interviewing, and measuring, there is no substitute for periodic hands-on practice. If fender-benders are investigated professionally and consistently, the designated accident responders will gain confidence and be better prepared to handle a major accident, should one occur.

1g. Investigating near-hits

Safety studies in many industries indicate there are many more close calls than actual accidents. The ratio has been estimated at 100 to 1.

The difference between a school bus close call or "near-hit" and a tragedy can be a matter of just a few inches or a few seconds.

Like minor accidents, school bus near-hits are important and, when possible, should be investigated and analyzed. When a near-hit is reported or comes to light (for instance, reported by another motorist), an investigator should attempt to identify what caused it just as he or she would if an actual crash had occurred.

Examples of near-hits. School bus near-hits take many forms. Typical examples include:

- Entering an intersection, a bus driver pulls in front of an approaching vehicle hidden behind a view obstruction (such as a mirror) on the bus, narrowly avoiding a collision.
- A bus driver is distracted by onboard student behavior problems and nearly rear-ends a car that suddenly stops in the roadway.
- A bus driver who doesn't realize a child has returned to the front of the bus after disembarking pulls the bus forward and nearly runs over the child.
- A motorist drives past a stopped school bus with its flashers activated and nearly strikes a child crossing the street.

- A bus driver backing out of a parking space in the bus yard nearly backs into a second bus also backing out of its space.

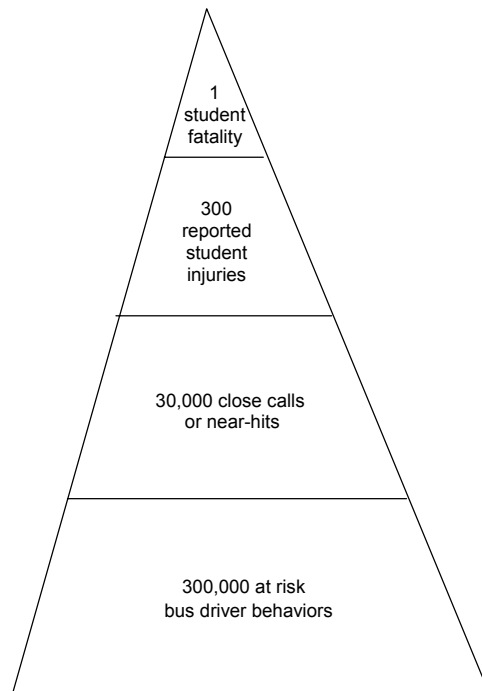
Clearly, any of the above near-hit incidents could just as easily have resulted in a crash or even worse. Just as clearly, something (or some things) caused each one.

But most near-hits go unreported - and therefore, uninvestigated and unanalyzed. No one learns a lesson from them, and the chance of a repeated occurrence - or of an actual accident - is high.

1g1. Encouraging near-hit reporting

In most businesses, employees are reluctant to admit a close call, fearing direct or subtle retribution.

Overcoming this understandable reluctance is a major accomplishment for a transportation organization, requiring deep trust between drivers and supervisors and a shared appreciation for the unique mission of serving children. Making it "mandatory" to report near-hits is not an effective means of actually increasing the reporting.



The accident probability pyramid

Creating an organizational “culture” that permits and encourages the reporting of all safety problems takes time and a concerted effort by safety staff. To encourage near-hit reporting, some transportation organizations have tried some of the following strategies:

NEAR-HIT INCIDENT REPORT

The purpose of this report is to improve safety by identifying situations that could result in an accident.
Reports will be treated confidentially.

Driver name: (optional) _____

Date of incident: _____ Location of incident: _____

1. What happened?

2. What lessons did you learn from this incident that could help other drivers avoid an accident in a similar situation?

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Near-hit report included in Appendix

- **Confidentiality.** Confidentiality encourages reporting. Drivers must trust that safety staff and supervisors will not use the incident to embarrass them at a later date.
- **Employee protections.** Drivers must feel confident that reporting a near-hit will not result in any type of retribution. A written policy to that effect is recommended.
- **Reporting form.** A simple “user friendly” Near-Hit Reporting Form may make it easier for some drivers to report what happened. Some drivers may prefer the impersonal nature of using a form, while others may prefer a verbal report. Flexibility will maximize reporting. A sample form is included in the Appendix and may used as is or adapted to local needs.
- **Training material.** With the permission of the drivers involved, and with a continued guarantee of

confidentiality and job protections, near-hit incidents can provide excellent material for training sessions. Allowing drivers to discuss and analyze what happened to one of their colleagues, in a nonjudgmental fashion, can be a powerful learning tool.

A near-hit investigation should proceed through the same basic steps as an accident investigation, culminating in a simple final report presented to management by the investigator. Management should treat near-hit investigations just as seriously as accident investigations for the purpose of devising actions to correct organizational deficiencies, training gaps, etc. The only difference is that no near-hit investigation should result in disciplinary action against a driver.

1h. Unique aspects of school bus accidents

School bus accidents are unique. They cannot be prepared for, managed, investigated, or followed up to in the same way as most other traffic accidents:

1h1. Unique nature of passengers

Other than deadhead accidents, school bus accidents always involve children in some way, and therefore raise the level of concern for everyone involved. The care and custody of children is the most important duty in pupil transportation, and the #1 priority at a school bus accident scene must be the children themselves. This fundamental fact often limits the extent to which a responding school or company official can “investigate” the incident. Should the supervisor arrive at the scene without an assistant, he or she will probably spend most of their time with the children, at least until they have been safely removed from the scene. This is certainly true in serious accidents involving injury and emotional trauma, but it is even likely in minor accidents. This emotional and legal obligation to care for, comfort, and supervise the children on the bus makes it very difficult for one person alone to also gather the information necessary for an effective investigation.

1h2. Unique number of passengers

School bus accidents often involve dozens of children, and will therefore tend to be much more complicated than a typical passenger car accident involving only three or four adults. Documenting who was on the bus, where they were seated, etc., injuries, etc., will almost

always be cumbersome and time-consuming. If accident information isn't carefully documented and maintained, startling discrepancies about even the basic facts of the accident, such as who was on board, whether or not they were injured, etc., can arise - sometimes years later, in court.

1h3. Unique exposure to litigation

For both the above reasons, as well as the fact that school districts and large contractors are sometimes viewed as “deep pockets” by unscrupulous individuals, school bus accidents have a truly unique potential for generating lawsuits. This can be true even of what are deceptively called “minor” accidents - for instance, accidents that involve no apparent injury at the time. Sometimes law enforcement personnel at the scene of such a minor accident, or for that matter school administrators understandably eager to get the bus moving and the children home, simply do not understand the importance of thoroughly documenting physical evidence in such a case. However, experience shows that minor accidents can sometimes have major consequences for a school district or a contractor. Claims of injury may surface later - sometimes much later. These claims may be made by parents or guardians of the students on board; or the other motorist and/or the passengers in that vehicle; or - don't forget! - by bus driver or monitor on board. Whether such claims are valid is not the point here.

The best protection for an operation is a consistently thorough accident investigation policy. Few situations are as unnerving to the pupil transportation supervisor or manager as receiving notice of a claim for an accident whose “documentation” consists of a few scribbled notes in a manila folder.

1i. Levels of accident investigation

Accident investigation is a broad term involving a wide variety of objectives and skills. An single investigation can and often does proceed on several different but interrelated levels:

- 1. Accident scene response.** The most elemental level of accident investigation involves arriving at a working accident scene, sometimes (not as rarely as is sometimes thought) before law enforcement or other first responders have arrived. The care and custody of children at the scene must be the first priority for all responders. When that obligation



has been met, the investigator's task is to locate, identify, mark, and document key evidence at the scene, especially transient evidence that may be altered, compromised, or disappear altogether in a short time.

Accurate documentation of key evidence at the accident scene is the foundation upon which all other levels of accident investigation rests. Teaching the field Transportation Supervisor, Terminal Manager, or Safety Supervisor how to do this is a main objective of this manual. Incompetent, inaccurate, or misfocused accident scene documentation undermines all the subsequent levels of investigation and analysis.

- 2. Post-accident scene investigation.** Often, accident investigators are unable to arrive at the working accident scene in time to document transient or temporary evidence before it has been altered, compromised, or has disappeared. In fact, professional accident investigators must know how to locate and identify key evidence long after the accident scene has been cleaned up - vehicles towed, witnesses dispersed, debris swept up. For a variety of reasons, there will be times that the investigator is not able to visit the actual accident scene for hours, days, or even longer. An alleged hit-and-run collision may not come to light for hours or days. Another example is when the school or bus company investigator is not allowed immediate access to the working accident scene by local law enforcement.

Longer-lasting evidence such as tire and pavement marks, *if* they can be conclusively linked to the accident in question, can reveal critical information about an accident to a skilled investigator. This manual teaches how to identify, document, and interpret such longer-lasting evidence.

- 3. Post-accident analysis.** If the evidence documented in the initial scene response or post-accident investigation is accurate and thorough, an intelligent analysis of the accident can take place. Post-accident analysis means systematically sifting through and carefully evaluating evidence gathered at the scene.

The goals of post-accident analysis include defining the physical chain of events that resulted in the accident; identifying all contributing factors; assessing bus driver preventability; and determining the primary cause(s) of the accident.

Often, an investigator's initial analysis of the evidence will "point" him or her towards follow-up investigation to clarify specific questions as they arise. Returning to the accident scene for more information and "another look," locating and interviewing additional potential witnesses who have come to light in the investigation, re-interviewing key credible witnesses to verify their accounts, and in-depth debriefing of the bus driver are typical steps in a good post-accident analysis.

Analyzing the data documented at the accident scene may also require specific technical skills such as minimum speed determination, lamp on-off determination, etc. To a limited extent, such technical skills are covered in this manual, but there will be times when the field Transportation Supervisor, Terminal Manager, or Safety Supervisor will need to consult with technical experts to evaluate and interpret physical evidence acquired at the accident scene.

- 4. Accident follow-up.** Accident investigation does not end when the post-accident analysis has been completed. Pupil transportation operations should have systematic procedures in place to follow up on the investigation's findings.

Depending on the nature of the accident and the conclusions arrived at in the post-accident analysis, follow-up may involve any or all of the following:

- Driver retraining;
- Driver discipline;
- Identification of operation-wide training gaps or vehicle or other operational deficiencies; and
- The "recycling" of accidents into driver training programs, to help everyone in the fleet learn from a

colleague's mistake.

Accident follow-up may or may not be conducted or coordinated by the same individuals who handled the initial investigation and analysis, although their input will undoubtedly be helpful.

Accident follow-up skills and procedures for pupil transportation operations are discussed at length in the Chapter 4, Follow-up.

- 5. Preparation for litigation.** A professional investigator aims only to discover the truth about an accident. But thoughtful preparation for possible civil litigation is only common sense.

When an in-house investigation indicates that the bus driver was clearly at fault, it is the perspective of this manual that the best course is forthright admission of responsibility to the injured parties. Fighting a losing case makes little sense - financially or ethically.

However, claims may be wildly exaggerated or even fraudulent. Schools and bus companies are often seen as "deep pockets," or quick to settle.

The means by which evidence is acquired and maintained can determine the extent to which it might be used to exonerate an operation years later in court, and attorneys should be consulted for advice as an investigation proceeds. Legal protocols regarding discovery, evidence admissibility, etc. vary in different jurisdictions around the country, and the school or company attorney should be involved in developing specific accident response and investigation procedures that best protect the operation against unreasonable legal actions in that area. Attorneys should always be notified when an accident that potentially could result in litigation (which, as we shall see, is unpredictable) has occurred.

- 6. Accident reconstruction.** Accident reconstruction requires a higher level of technical training than can be addressed in this manual. Complex mathematical formulas and computerized reconstruction programs allow the reconstructionist to utilize a wide variety of physical data gathered at the scene can be used to determine accident vehicle speeds at all points in the accident chain of events. Using such formulas, the exact location of the accident vehicles in relation to each other can sometimes be tracked backwards second by second as they approached the eventual point of impact,

allowing a clearer and fairer assessment of accident causes, driver preventability, etc.

This manual does not attempt to teach accident reconstruction skills or methods; they are far too complicated for the typical field investigator. But the jobs of the investigator and the reconstructionist are linked: a reconstructionist is entirely dependent on accurate initial documentation of key evidence by the scene investigator.

Bringing in a reconstructionist should be considered in any serious accident investigation. In some accidents, typically fatalities, area law enforcement will often send in its own specially trained reconstruction team. In other cases, the operation's insurance company may be able to provide such a party. "Outside" reconstructionists and accident reconstruction consulting firms can also be hired to assist in an investigation.

7. **Trend analysis.** The final level of accident investigation involves analyzing not one but multiple accidents to identify significant trends such as accident patterns, training gaps, or vehicle or operational deficiencies. Trend analysis can occur at the level of an individual operation - analyzing all that operation's accidents over time - or on a wider basis, such as an analysis of state or national accidents, which is usually conducted by governmental agencies or safety organizations.

This manual stresses the importance of tracking and analyzing accidents over time to discern important patterns.

1j. Ethical guidelines for school bus accident investigators

The stakes are high in accident investigation. Jobs, careers, money, reputations, can all be on the line after an accident. An investigator's findings and conclusions can have enormous impact on other people's lives.

Accident investigators are human beings, and feeling the pressures of an investigation is only normal. Pressures faced by school bus accident investigators could include:

- **Employer loyalty.** Investigators may feel pressured to de-emphasize or ignore findings that

are potentially embarrassing, inconvenient, or incriminatory to their own employer. This pressure may be entirely self-imposed by the investigator, or may in fact be coming subtly or directly from the employer.

- **Personal loyalty.** An investigator may be a personal friend with the bus driver involved in the accident and feel tempted to emphasize a particular aspect of the investigation.
- **Personal vendetta.** The opposite to the above can also occur. An investigator may feel tempted to emphasize or distort a particular aspect of the investigation to even an "old score" with a party involved in the accident.
- **Bribery.** Interested parties to the accident may try to bribe an investigator to influence an investigation. Bribes do not have to be monetary; hints of promotions or new job opportunities can constitute the same thing.

1j1. Personal standards for accident investigators

Accident investigators should aspire to possess the following personal qualities:

- **Objectivity.** Above all else, investigators seek to learn the facts about what happened. Extraneous factors such as the personalities of those involved cannot influence an investigation in any way.
- **Thoroughness.** Investigators should "turn over every rock" as an investigation proceeds. Insatiable curiosity is a helpful attribute in an accident investigator.
- **Integrity.** Accident investigators must make it clear to everyone involved, including the person signing their paychecks, that they seek nothing but the truth and that nothing and no one can influence their findings or conclusions in any way. Even their own employers must fully expect investigators to honestly report their findings and conclusions regardless of the implications.
- **Caution.** Investigators must be circumspect, strictly avoiding "premature interpretation" of evidence or issuing opinions based on incomplete or unclear information. An investigator should arrive at an accident scene with an absolutely open mind and no preconceptions about what happened, regardless of whether the bus driver involved experienced previous safety problems.

- **Confidentiality.** Investigators are often privy to important or even incriminating information about drivers and employers and must be able to strictly protect confidentiality. Investigators can't allow themselves to make even "off the record" premature comments about an investigation.
- **Humility.** Investigators can never allow themselves to forget how complex accidents usually are in the real world, and must be willing to accept the fact that not all accident investigations result in clear conclusions. Investigators must be willing to say, "I don't know," and to resist any temptation to force unwarranted conclusions.

1k. Chapter One Review

1. What is the main goal of this manual? (1a)
 - a. To convince and prepare Pupil Transportation Supervisors, Terminal Managers, and Safety Directors to establish a clear and consistent accident management system in their own operations.
 - b. To teach skills needed by accident reconstructionists.
 - c. To teach accident scene measuring.
 - d. None of the above.
2. What are the two main purposes of accident investigation? (1d)
 1. _____
 2. _____
3. Identify four common myths about school bus accident investigation. (1e)
 1. _____
 2. _____
 3. _____
 4. _____
4. Why should bus stop accidents be investigated like all other crashes? (1f)

5. Why should student injuries arising from non-collision events such as evasive maneuvers or wheelchair spills be investigated? (1f)

6. Identify eight reasons for investigating all school bus accidents, including "minor" ones. (1f)
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
7. Which of the following is not a good way to increase the reporting of "near-hit" incidents? (1g)
 - a. Confidentiality.
 - b. Make it mandatory.
 - c. Employee protections against retribution.
 - d. User-friendly reporting form.
8. Identify three ways school bus accidents are unique compared to other types of traffic accidents. (1h)
 1. _____
 2. _____
 3. _____
9. Identify seven levels of accident investigation. (1i)
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____

10. Identify four potential pressures faced by school bus accident investigators. (1j)

1. _____
2. _____
3. _____
4. _____

11. List six personal standards and qualities school bus accident investigators should aspire to attain: (1j)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

