U.S. Department of Transportation

Wisconsin Bus Safety Manual

September 1985

Wisconsin Bus Safety Manual

Final Report
September 1985

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FOREWORD

Many transit operators are very interested in improving their management practices. To assist these operators, UMTA has been funding, through the Section 8 Technical Studies Program, local studies to evaluate existing management practices and develop recommendations for improvements.

This document is the third of three reports from an UMTA-funded study of risk management programs that was conducted for the Wisconsin Department of Transportation. The first report, Management Planning: Wisconsin Insurance Study, summarized the evaluation of the insurance programs of the 19 urban transit systems in Wisconsin and provided recommendations for improvement of these programs. The second report, Saving on Bus Insurance in Wisconsin, described the process used to implement one of these recommendations, the development of a group insurance program for the urban transit systems. This program saved almost $275,000 in the first year of operation, or about 47 percent over the costs of the expiring programs.

This report is a safety manual that was prepared for use by the transit systems in Wisconsin. The focus of this manual is on actions that transit systems can take to safeguard their assets in a cost-effective manner. We believe that the recent increases in insurance costs makes this report "must-reading" for all transit systems.

Additional copies of this report are available from the National Technical Information Service (NTIS), Springfield, Virginia, 22161 at cost.

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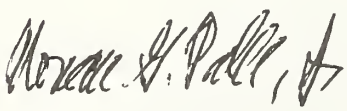

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PROLOGUE

WHAT DOES AN ACCIDENT COST?

The largest and most profound study of accident ratios that has ever been conducted was completed by a research group headed by the Director of the International Safety Academy. In 1969, 1,753,498 accidents reported by 297 cooperating companies were analyzed. Represented were 21 different industrial groups employing 1,750,000 personnel with an exposure of more than 3,000,000,000 man hours during the period of the analysis.

The study revealed that for every serious or disabling injury reported, there were 9.8 injuries of a less serious nature and 30.2 property damage accidents being reported. Further study by trained supervisors indicated many more no-injury/damage accidents (incidents) were occurring.

This study clearly shows the futility of directing our major efforts exclusively toward the few serious or disabling injuries when there are more than 600 less serious occurrences that provide a basis for more scientific control of accident losses. Frequency, not severity, is the key to accident prevention.

DIRECT VS. INDIRECT COSTS

Direct costs related to accidents are tangible and relatively easy to track and accumulate. Specific dollar amounts to settle damage and/or injury claims eventually surface after an accident. Although such costs are of primary importance we must also consider the impact of the INDIRECT COSTS involved. While the impact of the following examples will vary from one area to another, they must be considered.

Injuries

—First Aid
—Ambulance/Emergency services
—Supervisory/Management time involved
—Investigation, follow-up and processing of reports

Wage Losses

—Idle time of interrupted workers
—Time spent clearing the area
—Time spent repairing damaged bus and/or other facilities or equipment
—Time lost by injured driver

Service Losses

—Reduction in service on the street
—Temporary loss of experienced driver
—Less adequate performance/operation of newer, replacement driver
—Loss of vehicle while being repaired

Associated Costs

1. Loss of revenue due to reduced service
2. Replacement of damaged bus (temporary)
3. Extra Board worker to replace injured worker

4. Workers' Compensation cost
5. Costs of providing protection/security at accident site
   —and charges involved for vehicles/personnel required to clear the area
6. Cost to operate claims/legal/accident prevention functions

Intangible Costs

—Lower Employee Morale
—Possibility of increased problems with labor union
—Unfavorable public relations

WHAT AN ACCIDENT REALLY COSTS

What does a work accident really cost in terms of production?

In order to make up a $500 work accident loss, a publisher must sell 53,767 newspapers and a bakery must sell 119,033 loaves of bread, according to the Journal of American Insurance.

Here's what other businesses must do to make up the $500 loss, based on current estimates of manufacturing costs and retail prices:

How many fare paying riders would your transit company have to carry to make up a $500 accident loss—or $1,000, or $5,000 or (???)!

A transit system with a $.50 fare would have to carry the following additional number of passengers for varying accident costs:

Total Accident Cost (Direct + Indirect)		**Number of Additional Passengers that must be carried to pay for accident losses.**	
$ 500	Requires this	1,000/year	19/week
$ 1,000	number of	2,000/year	38/week
$ 5,000	additional	10,000/year	192/week
$10,000	passengers	20,000/year	385/week

INTRODUCTION

Public Transit Risk Management is dynamic, absorbing work which requires thorough research and wise decision-making. It involves more than just an insurance program; it requires a plan that explores the best and most economical methods a transit system can use to cope with all its exposures to loss. Execution of such a plan requires the combined efforts of many people: transit managers, supervisors, drivers, mechanics, professional risk managers, government officials who have the responsibility of preserving the assets of the municipality, statisticians, insurance providers, underwriters and engineers. For a transit system, bus safety is an integral and perhaps the most visable part of a system's Risk Management Program.

Our aim is to make this manual an understandable, practical approach to bus safety. This manual describes the methods to:

a. Reduce risk of loss common to transit properties.
b. Protect assets against catastrophic loss exposures.
c. Minimize the costs of managing risk by minimizing the administrative costs of performing various loss control functions.

When risks are poorly handled, human suffering as well as financial loss inevitably result. Both of these may be controlled, if not prevented, by adopting the risk-handling measures recommended in this manual. We hope that transit authorities and those called upon to advise them will find these methods helpful as they continue to search for more efficient ways to allocate public funds.

BUS SAFETY—DEFINED

Bus safety programs exist in various forms, levels, and degrees in the transit systems within the State of Wisconsin. Some systems have very formal, documented programs while others consider the matter in a casual or informal way. With many different types of risk and escalating costs, it is logical to deal with the subject in a structured and formal manner, regardless of the size of the transit system, or its historical treatment of bus safety.

A bus safety program is that method of safeguarding a company's assets and income over an extended period in the most efficient manner and at the most economical cost. It provides the transit manager with the tools to evaluate risks, make decisions on the assumption or transfer of risk, and to control losses.

There are several basic steps in the process of establishing a bus safety program. The establishment of a bus safety program is referred to as a process because, unlike a simple insuring arrangement (or even one as complex as the Wisconsin Municipal Transit Insurance Program) it is not a single, periodic, or annual evaluation or decision. Bus safety is an ongoing series of activities that stretches into all daily operations.

Effective bus safety includes the following steps:

*** identification, measurement, and analysis of risks;**
*** elimination or reduction of hazards;**
*** decision to assume, transfer, or insure risk;**
*** establishment of a loss control program;**

Bus safety affects the entire system since many other functions provide support information and data.

* **It is a management function, requiring managers to assess, enact, and support total system efforts to ensure safety and prevent losses.**
* **It is a financial function, which attempts to use company financial resources most effectively to prevent or meet financial loss.**
* **It is an operations and maintenance function, acting in the support and development of operational procedures intimately bound to safety concerns. A good bus safety program analyzes, measures and extends the system's preventive practices to each and every area of company function.**

In short, anyone who tries to reduce the likelihood of a traffic accident by making safety suggestions to the drivers, keeping a watch for unsafe work practices in the garage or on route, and attempting to negotiate an economical insurance premium arrangement, either individually or through the WMTIC program, is managing both the likelihood and cost of an accident. What is included in the view of the risk, and the actions that are included in managing the risk, are what determines the formality and sophistication of the transit system's Bus Safety Program.

It is important that managers have sufficient control over training and safety functions, and have access to adequate staff and dollars to pursue bus safety effectively. This means that managers or the operations personnel that have been delegated responsibility for a bus safety program, have direct administrative control over all line instructors during training sessions, regardless of whether those line instructors report to other people at other times.

This handbook is geared toward providing information and guidance necessary for transit system management to upgrade, formalize, and coordinate existing bus safety functions which might or might not be presently taking place.

BUS SAFETY PROCESS

A systematic approach to safety is necessary to ensure consistent safe transit operations. For this purpose, a six step approach, Figure 1.1, is recommended to help organize the task:

1. **Decide on Basic Policy and Goals for Bus Safety**
2. **Identify, analyze and measure specific risks or perils**
3. **Decide to avoid, reduce, control, assume, or transfer specific risks or perils**
4. **Develop and implement proper foresight and hindsight techniques**
5. **Review support systems**
6. **Collect and analyze data**

The First Step: Decide on Basic Policy and Goals for Bus Safety

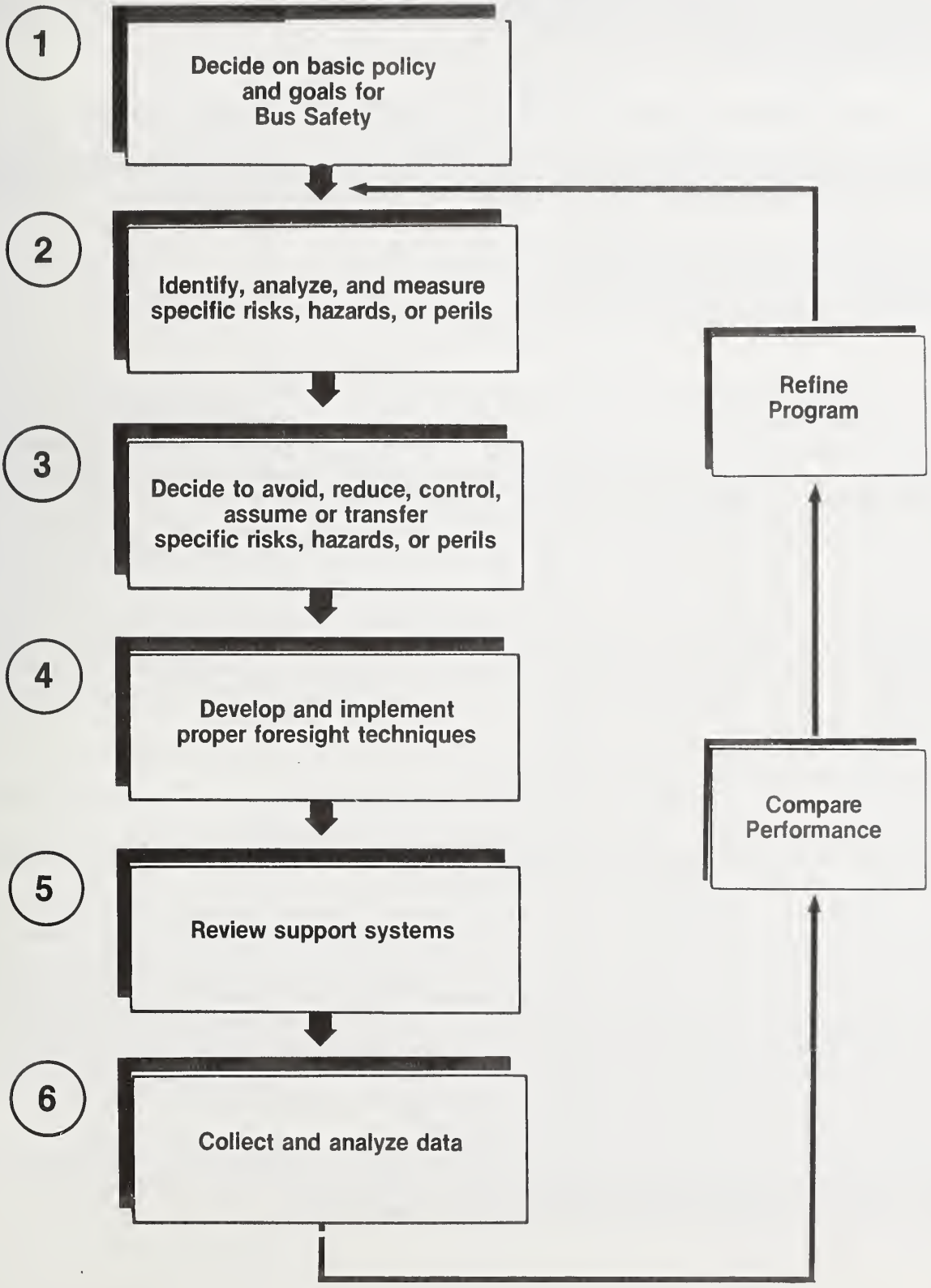
In any process, the establishment of goals and objectives is a necessary first step. Policy and goals for bus safety should be formulated and supported as high in the organizational structure as possible. A sample policy statement is shown in Appendix 1.

In developing internal procedures to organize Bus Safety, you will want to:

* **Financially protect the transit system against accidental losses either through the WMTIC program or other equivalent means**
* **Protect the safety of employees, patrons, and the general public**

Figure 1.1

THE PROCESS OF BUS SAFETY



* **Effect maximum control of losses**
* **Operate your internal Bus Safety program with maximum efficiency and effectiveness**
* **Assign high priorty to Bus Safety expenses in your budget process, and fund these expenses consistently**
* **Consult this manual on a frequent basis**

The Second Step: Identify, Analyze, and Measure Specific Risks, Hazards and Perils

An important element of managing risks internally is the development of what might be called a risk profile. In this profile you identify, either formally or informally, recorded or not;

—Where and how are your passengers subjected to injury?
—What areas are you subject to risk of financial loss?
—What kind of responsibility and activity do you have in these various areas of risks?
—What is the financial impact of these outlined risks?

The best source of information for a risk profile is your transit system's loss experience for the last five years. Often referred to as "loss runs," this information is available by contacting Marsh & McLennon, Inc. for WMTIC participants, or your specific local insurance agent or broker. A brief summary of the loss experience of those transit systems insured under the WMTIC Program for the twenty-five month period from January 1, 1982 to January 31, 1984 is presented in Figure 1.2.

You will notice that among medium sized transit systems, (10 to 36 buses) the proportionate loss experience in both number of incidents and dollar amount is extremely high. Sixty-seven percent (67%) of the total incidents and seventy-eight percent (78%) of the total dollar losses for all WMTIC systems reported, were from this group which constitutes only fifty-eight percent (58%) of the total vehicles. When classified by accident type, the medium sized systems showed disproportionate frequencies and settlement amounts for nearly every category of accident. The only type of accident where the medium sized systems performed better than the group was in the category of hitting stationary objects. The large system ranked the highest in that category.

Among small transit systems (less than 10 buses), the proportionate loss experience in both the number of incidents and dollar amount is quite low.

Three percent of the total incidents and two percent (2%) of the total dollar losses for all WMTIC systems, were from this group which constitutes 4.5% of the total vehicles.

It should be noted here, however, that a single highly expensive accident could have a disastrous effect on a small system's insurability and premium rate.

When classified by accident type, the small system group showed disproportionate frequencies and settlement amounts for accidents at intersections, disproportionate frequencies of rear ending other vehicles, and accidents while turning or changing lanes. Small systems, didn't experience a single incident of hitting a stationary object, or miscellaneous accidents which plagued the largest system.

The only large system among the group, Madison Metro, shows a proportionate loss experience in both number of incidents and dollar amounts on a per vehicle basis. Madison Metro operates 37% of the groups transit vehicles, yet during the reporting period, experienced only 29% of the incidents and 20% of the total dollar amount in settlement costs. These encouraging figures are undoubtedly due to Metro's commitment to safety and training programs.

Madison Metro's loss runs when compared by type of accident, however, showed a disproportionate number of accidents involving hitting stationary objects. Further research into the actual loss runs also revealed a rather disturbing level of accidents involving bicycle riders.

Figure 1.2

TRANSIT SYSTEM LOSSES INSURED UNDER WMTIC
Jan. 1, 1982 - Jan. 31, 1984

	SMALL 1-18				MEDIUM 18-35				LARGE 35-				TOTAL	
Accident Type	# of Incidents	Group	$	Group %	# of Incidents	Group	$	Group	# of Incidents	Group	$	Group	# of Incidents	$
Passenger Falls	5	3	1,597	.4	108	60	351,278	84	87	37	63,569	15	180	416,444
Vehicle Struck Bus	4	5	750	.2	74	88	18,997	83	8	7	10,638	35	84	30,385
Turns/Change Lanes	4	8	0	0	54	79	10,682	81	10	15	7,120	40	68	17,802
Misc. Accidents	0	0	0	0	50	72	30,834	83	19	28	17,973	37	69	48,820
Other	2	3	0	0	45	59	5,572	31	29	38	12,217	69	76	17,789
Side Swipe O.V.	1	2	700	2	46	78	25,482	89	12	20	2,143	7	59	28,657
Rear End O.V.	4	7	2,187	2	35	59	100,698	82	20	34	20,664	17	59	123,529
Acc. at Intersection	3	9	6,900	9	27	77	63,538	84	5	14	5,623	7	35	78,055
Hit Stationary Obj.	0	0	0	0	18	39	2,438	16	28	61	12,720	84	46	15,188
Backing - Hit O.V.	1	7	350	5	8	57	2,370	30	5	36	5,126	65	14	7,845
TOTAL	24	3	12,484	2	465	67	611,889	78	201	29	158,867	20	690	783,220
Number of Vehicles	25				326				206				557	
	4.5%				58.5%				37.0%					

Metro's loss experiences in other accident situations were at the norm or below when compared to the total number of reported accidents by number of buses. Thus, medium sized systems had the distinction of having the disproportionately highest number of accidents and expense settlement costs.

Upon completion of regular loss run reviews, you will be able to ascertain historically the types of accidents to which your system is prone. From this information you can begin to draw conclusions about the types of incidents you should be most mindful of when establishing your bus safety priorities. More information about loss runs is provided in Appendix 2, "How to Read a Loss Run".

System loss runs seldom provide the complete picture. There are additional areas within your entire operation which should be reviewed to make certain you are addressing all exposures, not just those related directly to vehicle operations. The checklist shown in Appendix 3 provides help in identifying all the components of your operation which must be reviewed as a part of an effective safety program.

Third Party Liability is one of the more unpredictable coverages in which to calculate exposure. The checklist should help you identify exposures which exist because of your operations. In general, if you have the responsibility to perform an activity or service, you are also exposed to liability in that area.

Liability potential among transit system is strongly influenced by increased medical and property repair costs, by the general tendency of higher plaintiff awards, and by the increased willingness of the public to bring cases to suit, especially against transit systems who suffer at times from the general knowledge that they are usually adequately insured.

Once the areas of risk are outlined (through the use of Appendix 2) and analyzed (according to frequency and severity, as with the WMTIC data in Figure 1.2), the risks that your organization faces must be translated into a measurable form. In measuring risks it may be helpful to think of losses in two categories. Many organizations now use "maximum loss" and "probable maximum loss" estimates for the total losses that can arise from a single occurrence.

—**Maximum Loss is the greatest conceivable loss assuming the failure of all preventive mechanisms**

—**Probable Maximum Loss is defined as the worst loss to be expected under "average" conditions assuming that most, if not all, control mechanisms and procedures operate efficiently.**

Management should identify the sources of greatest financial impact. On property exposures (note: property refers here to buses and equipment as well as structures) replacement or actual cash values should be assigned to all items with values checked every two years (property valuation is a service provided at no cost to you by your insurer). This should include objective replacement cost valuations, loss of income or earnings and additional expenses resulting from damages to vehicles or other holdings.

With respect to Liability and Workers' Compensation coverage, loss run reviews of frequency and severity may be used to predict the dollar loss potential.

The end result of the "risk profile" based on loss data from the past five years should be an outline of the property's "normal" losses, and an illustration of trends.

The Third Step: Make a Decision to Avoid, Reduce, Control, Assume or Transfer Specific Risks, Hazards, or Perils

With the risk profile completed and dollar amounts of probable loss formulated, it is time for decision making. Strategies for managing risk fall into five categories. Consider one, or a combination, for each of the exposures you have outlined.

1. **RISK ELIMINATION**—means what it says, that is, not getting involved with the risk. This may mean contracting a service to a private provider, hold harmless agreements, or dropping an element of service that creates burdensome exposure of loss.
2. **RISK REDUCTION**—reducing the number of opportunities for a given risk to occur. An example of risk reduction is revising work patterns to reduce repetitive tasks that are hazardous.
3. **LOSS CONTROL**—reducing both the frequency and the severity of accident occurrence. It requires a thorough look at the existing safety and loss control program, often followed by an upgrading of training, procedures, and enforcement.
4. **RISK ASSUMPTION**—the knowledgeable willingness to assume the financial implications of having a loss. Some types and amounts of loss are unavoidable. For some types of loss, it is not worth trading dollars with the insurance company for coverage. Frequency/severity ratings and past loss experience usually give some clue to these areas. Approaches to risk assumption include use of deductibles, retentions, and self insurance.
5. **RISK TRANSFER**—is most often the purchase of commercial insurance, though hold harmless agreements can also effect the "transfer" of risk. The insurer pays losses to the stated amount under the policy conditions. This option can be used for loss amounts deemed unaffordable by the transit system and for excess coverage on all exposures.

The Fourth Step: Develop and Implement Proper Foresight and Hindsight Techniques

Foresight Techniques
- Employee Selection
- Employee Testing
- Employee Training
- Employee Evaluation
- Vehicle Design
- Preventive Maintenance
- Facility Safety
- Routing, Scheduling, and Bus Stop Placement

Hindsight Techniques
- Accident Investigation
- Safety and Accident Review Committees
- Judging of Accidents

Effective loss prevention and control are the best long term methods of improving safety in operations. This effort may require an investment of time and money, but if done properly, can save enormous and incalculable amounts over just a few short years. It is with this premise in mind that this handbook is designed as a resource to enable you to institute proper foresight and hindsight techniques, and thus promote better bus safety.

An effective loss control program consisting of effective foresight and hindsight techniques supports and reinforces existing risk management activities and will work concurrently with the WMTIC program to provide responsible levels of insurance coverage at a fair price as the result of favorable loss histories.

The Fifth Step: Review Support Systems

In managing risk, transit properties will become involved in activities in which they were only marginally involved in the past or that were performed for them by their insurance companies. A

systematic approach to risk evaluation means that these areas must become internal concerns. Support programs which develop new relevance under a risk management program are:

- **claims processing**
- **legal services, (for claims adjusting and the evaluation of legal liability)**
- **compilation**
- **manipulation and analysis of data**
- **safety areas (which may have been handled totally under maintenance interests, previously).**

In addition, transit management should whenever possible, pursue contact with safety and risk management related organizations such as:

- **WMTIC Safety Committee**
- **APTA Committee on Bus Safety**
- **M&M Protection Consultants**
- **The National Safety Council**
- **The United Bus Owners of America's "First Team" for Safety**
- **ABA**
- **UW Extension in Milwaukee**
- **NTSI**

The Sixth Step: Collect and Analyze Data

A proper insurance program will generate its own data. Information on exposures, control or elimination of hazards, safety statistics, claims, losses, costing, financial resources, and fiscal status will be available and must be collected in the on going process of insurance program evaluation. Some of this information will provide an important profile for other aspects of company decision making. Expansion into new areas of service, capital expenditures, and employee benefit policies are all areas in which effective Risk Management may be an aid.

Periodic analysis is a part of the process. Any analysis should measure the programs effectiveness and, from time to time formulate new and tighter objectives for your insurance program. A review is necessary and important to spot trends, keep a close control on exposures, and to constantly reevaluate each step of the process.

In addition to the information available from internal sources, transit system management should consult their insurance carrier for loss run information. WMTIC policyholders can obtain this information from:

Marsh & McLennon Inc.
777 East Wisconsin Avenue
Milwaukee, WI 53202

As data is collected and analyzed, transit managers should compare their system's performance with established goals and objectives to determine if the Risk Management Program is improving. By doing so, management is ensuring a continued improvement in safety performance as they continue to refine the treatment of certain risks, which should result in steadily improving loss histories.

Foresight Techniques are those measures that you as transit system management can initiate in order to prevent or minimize potential accident situations. You are probably already performing many of these functions on a daily basis. This listing will provide you with reasons why each is important, and how each is best performed.

COSTS

First a word about costs . . .

While the staff commitment for the type of bus safety procedures outlined here might be considerable, it is well worth the investment. The more effort you put into your Bus Safety Program the greater your rewards will be.

The cost of a proper bus operator selection process is really minimal, and aside from the investment in any testing materials, the only real investment is your time. You should assign the operator selection process the staff time it deserves, even if it means committing your own time.

The staff time for the bus operator training suggested herein is considerable, but the entire program may be completed in as few as 5 days. The only other costs associated with this type of training are the fuel costs for the buses, slight rental fees for visual aids for the defensive driving portion of the program, and a small initial investment in supplies.

Ride checks conducted by independent firms specializing in this area might call for significant "out-of-pocket" expense. But, if you suspect skimming of farebox revenues, inadequate verification of correct fares by operators, or a loss of ridership due to undisciplined operators; your initial investment will probably be more than returned.

It is simply good business to correct a problem, rather than eliminate the operator if he/she develops one type of problem or another. This is not to say that you will not encounter situations where your only alternative is discharge. However, a well balanced program of Drug and Alcohol Abuse Testing and an Employee Assistance Program whether formal or informal, will prove inexpensive when compared to the potential financial and human benefits.

Vehicle design strategies may add to the original cost of your vehicles and equipment, but will more than pay for themselves over the life of the vehicle. Preventive maintenance, facility safety programs, bus stop placement, and schedule monitoring will require a minimal investment.

Hindsight techniques that you employ will also prove to be low in cost. You can generally assemble an effective accident investigation kit for under one hundred dollars which will give you the necessary tools for proper accident review.

An Accident Review Committee will also cost very little, since committee representatives include meetings among their regular responsibilities.

While implementation of any or all of these techniques will not cost a great deal of money, nonetheless there are costs involved. In order to ensure the continuation of the safety program, each system should establish a small budget dedicated to bus safety training.

EMPLOYEE SELECTION

The most important factors in your comprehensive Bus Safety Program are the people you choose to carry a portion of the risk. Probably the most crucial responsibility that you as a manager must delegate to your personnel is the responsibility for safe operation of the vehicle. No matter what other steps you may take to ensure safety, there always exist those elements over which you have no direct, and only limited indirect control. These are the reasons that make your decisions critical about who you should hire and assign those responsibilities, and who you should not.

Qualifications

Good bus driver candidates must possess:

—Good physical coordination
—Intelligence
—Good Temperament
—Common Sense
—Good Driving Records

Let's face it, not everyone can be a transit driver. There are certain minimum requirements which must be met before a candidate could actually be considered suitable. "Anyone can drive a bus" is simply not true.

A driver must possess a certain amount of physical coordination, intelligence, temperament, and that most elusive of all qualities, good common sense. It is incumbent upon management to fill vacant positions with people who can handle these requirements.

Although a certain amount of the employee selection process relies on intuition and even a bit of luck, there are a number of steps that you can take to improve your chances of hiring the most appropriate candidates. With the goal in mind of minimizing the transit system's exposure to risk by hiring individuals with the ability to perform their related tasks in a safe and consistent manner, the following guidelines should be helpful.

Recruitment

When recruiting bus operators, consider the following:

—Advertise for positions in accordance with local (City personnel or internal) regulations or existing union agreements, and advertise locally at first.
—Previous bus driving or professional driving experience need not be required.
—Make sure that as transit system manager, you retain as much control over the hiring process for bus operators as possible.

Advertise for open positions according to your Transit System or City by-laws or regulations and/or existing Union agreements. Lacking same, make use of local newspapers, radio, employment services, personal contacts, and other sources first with the assumption that local prospective employees would generally be better candidates. If your local efforts fail to produce an adequate number of acceptable candidates, then pursue talent from outside your immediate area as a secondary action.

In recruiting bus drivers, previous experience need not be a necessary prequalification. Although previous driving experience is preferred by some, it is often better to train persons with the right aptitude, but no experience—if you allow for enough time to provide the proper training. By controlling a prospective bus driver's progress from the start, an effective safety and training manager can control many of the "bad habits" that drivers confessing to previous experience can often bring to the job.

It is important here to make note of a point of great difference among the Wisconsin systems which relates to the level of control retained over the hiring process by transit system management. Some systems' initial recruitment responsibilities are handled by City or other personnel agencies. In most cases this is a workable arrangement provided that transit management still retains sufficient control over the process to make the final determination concerning each individual applicant. This is a point which transit managers should insist on given their unique perspective on the specific issues of transit labor and transit safety.

Application

A good employment application will contain questions about:

—The title of the position being applied for
—Home, work or other telephone number at which the applicant can be reached
—Information on citizenship status
—Information about any possible criminal convictions (only if job related)
—Education; schools attended, dates, year of graduation, courses of study
—Information about specific skills
—Thorough employment history including salary, title, and reason for leaving
—Personal references
—Military history
—Emergency notification
—Information about the applicant driving record including any convictions for moving violations
—Date of birth

Important to consider in using any application form is the fact that certain questions may be interpreted as discriminatory. Among these are those that pertain to:

—Age
—Arrests
—Availability for Saturday or Sunday work
—Number of children under 18, age of children, arrangement for childcare
—Citizenship
—Convictions (if not related to circumstances of job being applied for)
—Credit record
—Educational background
—Eye and hair color
—Bonding
—Friends or relatives currently employed by agency
—Handicap
—Height and Weight
—Lowest salary acceptable
—Maiden name
—Marital status
—Family plans
—Prior name
—Sex
—Spouses work, and name

Getting accurate and concise information about an applicant's background is obviously important to the employee hiring process. A useful job application form must include, aside from general information about the applicant, a number of specific questions aimed at ascertaining certain facts needed to round out the applicants description of his or herself. A sample of a job application form that we find useful is supplied in Appendix 4.

A good employment application will also contain a release wherein the applicant certifies that all information supplied on the form is true. Also, it is a good idea to obtain a release from the applicant

on the matters of a required physical, visual examination, employment references, and driving records. Any specialized employee rules that management feels would benefit from a signed release at this stage should also be included here. A general release used by some employers is that the employment is for no fixed term, and the employee works at the discretion of the employer.

Department of Transportation Records Review

A review of all prospective employees' driving records is recommended:

- **Review past history of moving violations**
- **Review trends**
- **Review types of accidents**

Review of a prospective employee's driving record with the State Department of Transportation is recommended. According to the Wisconsin State Department of Transportation, this practice is entirely legal and is accomplished by forwarding a request to:

Department of Transportation • Driver Record File • P.O. Box 7918 • Madison, WI 53707

Private companies must file a Fair Credit Certificate and then are allowed access to driver records at a price of $2.00 each by Mail and $3.00 each by telephone (telephone requests require a monthly minimum charge of $10.00). There is no charge if the Transit System is a government entity.

Personal Interview Techniques

It is recommended to conduct a personal interview with each prospective driver applicant. The following are some of the types of questions you might want to ask in the interview:

- **Have you thought about, or do you have any knowledge of, the work performed by bus operators? And why are you interested specifically in this type of work?**
- **What is your experience in dealing with the public? Did your experience include working with the elderly and people of diverse backgrounds?**
- **Bus operators must exercise some judgment in meeting the bus schedule, while operating the bus safely and courteously, and maintaining good public relations. If these goals are in conflict from time-to-time, what do you see as your priority(s)? Why?**
- **Bus drivers are often called in for unscheduled work assignments at the last minute. How would you feel about that?**
- **A passenger slips and falls getting off the bus. How would you handle it? Or what are some of the factors to be considered?**

It is important to remember what types of questions that are inappropriate or illegal:

- **Do you have pre-school children?**
- **How will you take care of your children?**
- **Do you own your home?**
- **What is your marital status?**
- **Questions that can be answered by merely yes or no**
- **Leading questions which suggest the "proper" answer to the applicant**
- **Questions or comments that are non-neutral and reveal the interviewers attitudes**
- **Questions that are not related to the task at hand.**

It is also important to remember, as in the application process, the types of questions to avoid since they may be judged discriminatory. A list of possible topics of this nature was supplied in the discussion on questions for a proper job application.

It is recommended, if possible, that the general manager actually spend a few moments with each reasonable job applicant. It is not necessarily important what you discuss, but more important is the manner to which the applicant responds to the questions you pose. Look for confidence and poise, for these qualities will be needed in situations where a driver must take charge. Look for a willingness to learn, a respect for the job, and for you as the employer, for these qualities will allow you the attention and commitment the job deserves. Look for other things like good grooming habits which show a respect for self and a desire to please others. Ask pointed questions about former jobs and work situations making sure to ask for references which can be followed up on later.

Take notes, especially when interviewing large numbers of people. A system of grading on specific criteria is extremely helpful, and will allow you to be somewhat systematic when comparing applicants after all interviews have been completed.

By conducting personal interviews, you lend to your organization's good name by allowing at least a portion of those who come to you seeking employment an opportunity to present themselves in person. You also increase your chances of eventually hiring the type of person you would like to have working for you.

EMPLOYEE TESTING

Written Testing

Administering written tests to prospective bus operators is an effective method to assess an applicant's suitability. These tests can:

—provide a quantifiable measurement of an applicant's qualifications
—provide considerable assistance when large numbers are being interviewed for positions

While considering testing of this sort there are some negatives to consider:

—These tests are subject to a margin of error
—There is an expense involved

Some transit organizations espouse the virtues of a pre-employment written test for all prospective employees. The use of the London House Transit Operator Selection Inventory or others, can at times provide quantifiable insight into the intellectual capacity and personality characteristics of an applicant. These tests are however, subject to the same margin of error as are other attempts to rank order subjective qualities such as intelligence and personality. Their most practical and appropriate use is in situations where staff is available to review and evaluate the tests and generally where a number of applications are processed. This is especially true in large systems where they rarely have the time to take a personal approach during the initial screening process, thereby not allowing the opportunity for informed observations about a candidate's suitability. The propensity for judgement liability is great under the testing program if not used in conjunction with a personal interview. Recent prices of the copyrighted tests are in the range of $8-$12 per copy not including the time to process them and the staff time to monitor them. In almost all cases it is more effective for small and medium systems' transit management to ascertain a particular candidate's capabilities through a good application and interview process without the assistance of testing.

For more information, contact:

London House Management Consultants, Inc. • Transit Operator Selection Inventory
1550 Northwest Highway • Park Ridge, IL 60068

Polygraph Testing

Although not recommended for small and medium sized systems because of the time and expense involved, polygraph testing and fingerprint testing are sometimes used by large transit properties for the following reasons:

—Assurances that the information supplied to you is accurate
—A "weeding-out" process for those with dishonest intentions

However, hiring decisions may not be based solely on the results of a polygraph test. Wisconsin law further requires the employer to use only a permitted type of mechanical device that visually, permanently, and simultaneously records the person's cardiovascular and respiratory patterns and changes. Submission to the test must be voluntary and the applicant must be informed both in writing and orally. Questions asked must be related to the person's performance or conduct in past or present employment.

Fingerprint Testing

This process can provide you information on any prospective employee who is under indictment or a fugitive from another jurisdiction. As with polygraph testing, disadvantages are:

—Expense
—Time necessary
—Logistics of setting up the process.

Physical and Visual Acuity Standards

All transit systems should institute health and vision standards to include:

—Required physicals for all new employees
—Yearly follow up exams
—Use of a thorough exam format
—Vision testing including tests for glaucoma, peripheral vision, and corrected sight to at least 20/40

Sending a driver out into the street who is less than healthy is an invitation for disaster. While you can't be expected to monitor the day to day health status of each of your employees, you can reduce the risk of accident or other incident by spotting chronic or recurring trouble before it creates a dangerous situation.

All employees should be required to meet physical and vision standards that will protect both the transit system from undo risk and the health of the employee. These standards should be established by the local physician who serves the transit system. It is recommended that these examinations take place prior to employment and at least annually. The physical exam format can be any one that is recommended by a competent physician, (a sample of an effective form is supplied in Appendix 5) the only condition being that management receive a copy of the results or a recommendation from the attending physician for placement with appropriate personnel records. Another example can be obtained from the ICC.

The visual acuity exam should include tests for peripheral vision, and glaucoma, as well as corrected sight to at least 20/40. As with the physical exam, records of results for the vision exam should also be included in an employee's personnel record.

The cost of a program such as this is considerable, approximately $50 per employee per year, but well worth the benefits of less exposure to costly accident situations as well as the savings in health insurance costs brought about by this type of preventive health care approach.

EMPLOYEE TRAINING

Once you have decided on the individuals to hire, it is recommended that your bus driver training consist of an integrated four-step process. Where possible, all driver training regardless of skill level or experience should utilize these four basic steps.

1. **Classroom Training and Familiarization**
2. **Off-the-Road Vehicle Training**
3. **Road Work and Route Familiarization**
4. **Revenue Service Under Observation**

Classroom Training

While bus driving is a practical skill, and most driver training is done outside of an academic environment, there is a large amount of information that can best be relayed to trainees in a classroom setting. It is suggested that because of the nature of classroom training this portion of the training should not take place in one sitting, but rather be conducted over more than one day, perhaps as three or four morning sessions preceding two afternoon practicum sessions.

The five major areas of concentration which can be used to set the agenda for classroom instruction are:

1. **Company Policies and Procedures**
2. **Standard Operating Procedures and Vehicle Orientation**
3. **Route System Orientation**
4. **Defensive Driving Skills**
5. **Passenger Relations Skills**

1. The Discussion of company policies and procedures along with the standard operating procedures and vehicle orientation should take place over four half-day sessions and should include:

   —Welcome Message from Manager
   —Employer—Employee Paperwork
   —Wages and fringe benefits discussion
   —Union Organization if appropriate
   —Job descriptions
   —Disciplinary Procedures

2. Also included should be a general vehicle orientation which when introduced in a classroom setting should include:

   —Descriptions of each type of vehicle
   —Paperwork requirements (pre- and post trip, etc.) for each operator

3. Once completed, classroom training should focus on route system orientation. Discussions should include:

   —Schedules
   —Fares
   —Fare handling procedures
   —Reporting requirements
   —Transfer procedures
   —Route maps and information sources
   —Driver schedules

4. Classroom training should then concentrate on Defensive Driving Skills making use of an accepted well organized Defensive Driving Course which uses Audio Visual materials.

5. Finally, classroom training should include instruction in passenger relations skills. A good passenger relations program should:

   —Include input from an experienced operator
   —Discuss such problems as: rude passengers, non-payment of fares, delays, the special needs of the elderly and handicapped
   —Include medical and non-medical emergency procedures training

First, classroom training should consist of a review of standard operating procedures. In this format, transit management staff will be able to conduct a thorough review of the systems' rules and regulations as well as general system policy and employee responsibilities as they relate to the workplace. All questions concerning rates of compensation, benefits, Union organization, job descriptions, disciplinary procedures, the function of the safety committee, accident review committee, and similar information should be dispensed up front and all questions answered. This frank presentation will provide the trainee with a clear picture of what he/she is about to begin. If desired, transit system management can instruct each employee individually in these matters giving the process a more intense, personal quality. Whether in the classroom setting or in person, the policies presented to any new employees must be in written form, and the employee should acknowledge receipt in writing. This not only provides the employee with an easy reference, but also places the burden of upholding his/her portion of the employment arrangement squarely on the employee. Published policies, rules, and responsibilities provide a mutually agreed upon set of guidelines with which to proceed should there be any disagreements in interpretation regarding the employee's responsibilities.

Once those issues are covered, classroom training should move on to a thorough system orientation. Included in the discussion should be; schedules, fare handling procedures, reporting requirements, transfer procedures, and driver schedules. These items will thoroughly prepare each driver for the service he/she is about to provide to the public.

Perhaps of equal importance in the classroom curriculum, should be instructions in defensive driving skills. Defensive driving has long been stressed as an important component in a bus safety program. Although you may find that a number of your driver candidates have been exposed to this type of material before, it is still crucial that you take the time and the opportunity to thoroughly discuss the practice of defensive driving with each new hire.

Although by its nature the material can be a bit uninspiring (some might say boring) at times, there are a number of ways for you to spice up your presentation using available films, videotapes, slides,

role playing strategies, and similar devices which will help to keep your audience's attention focused. The following is a list of organizations and addresses which you can contact to request this type of material:

- **National Safety Council**
  444 N. Michigan Ave.
  Chicago, IL 60611
  (312) 527-4800

- **Wisconsin Council of Safety**
  111 E. Wisconsin Avenue
  Milwaukee, WI 53022
  (414) 271-9428

- **Transportation Safety Institute**
  6500 South MacArthur Blvd.
  Oklahoma City, OK 73125
  (405) 686-2614)

The cost of these materials can be high, but their strength as punctuation of your defensive driving instruction might just make the difference in preventing a serious accident.

Additional classroom training should include instruction in passenger relations procedures and practices. This type of training has proven quite successful in a number of transit systems and, if well taught, it helps greatly to prepare bus operators for the real world situations they will encounter once they are placed in charge of revenue service. We must remind ourselves of the unique position of the transit operator who is given tremendous responsibilities and yet, is essentially not under constant direct supervision. By offering a general orientation into the types of situations and problems that might occur in the course of a day's activity, an effective passenger relations course will help new transit drivers deal with such sensitive problems as:

- **Rude passengers**
- **Non-payment of fares**
- **Delays**
- **The special needs of the Eiderly and Handicapped**

Included in the classroom instruction must be an orientation of medical and non-medical emergency procedures. A sample of effective non-medical procedures appears in Appendix 6. Management must make certain that any employee that is assigned revenue service be fully aware of his/her responsibilities in the event of an emergency.

It is often helpful in this portion of the classroom curriculum to include an experienced operator in the discussions. Often their insights are extremely valuable in impressing upon new trainees the difficulty of their job.

An excellent sample curriculum for passenger relations training is available through the AFL-CIO Appalachian Council, Transit Employee Training Project. Refer to their publication, Operator's Manual: Passenger Relations, which was prepared for the U.S. Department of Transportation, Urban Mass Transportation Administration, Office of Transit Management.

At this point make certain that all trainees hold the appropriate license or permit to allow them to drive public transit vehicles. They will need it for the next step.

Off-The-Road Vehicle Training

The next step in the training process is off-the-road vehicle training. It should consist of:

—A thorough orientation of every type of vehicle an operator would be expected to operate.
—A comprehensive program of vehicle driving techniques conducted in a vacant parking lot using manuevers adapted from the American Public Transit Association Roadeo Course.

The first step of off-the-road vehicle training should be devoted to a thorough orientation with the vehicles and equipment that the new driver will be expected to operate. Included should be a discussion of each vehicle's manufacturer, and a complete explanation of:

- **Power train**
- **Design**
- **Two-way radios**
- **Fare box**
- **Passenger amenities**
- **Accessories**
- **Location of safety and fire equipment**
- **A thorough orientation of the driver's compartment.**

Also included should be an explanation of the operator's responsibilities relating to pre- and post trip inspections of the equipment (discussed separately in this manual), and instructions concerning mechanical breakdowns, or suspected component failure. A well prepared driver in a potentially dangerous situation will reduce the risk of catastrophe.

By this point in their training, most of your trainees will be expressing an eagerness to get behind the wheel of the transit coach. Having been able to give them the foundation of knowledge through the classroom process, moving on to driving mechanics and vehicle maneuvers is the next logical step. The best way to accomplish this is to gain access to an unused parking lot of sufficient size to allow you the freedom to run the buses in maneuvers without danger of damage to people or property. Vacant shopping centers, church lots, or stadium lots are good for this purpose, but you must first receive permission of the owner.

Get a hold of about two dozen traffic pylons per bus used in your training, and set up exercises according to the diagrams shown in Appendix 7. While the order is of no particular importance, you should set up and have each driver perform the following:

—Left Hand Turns: Watch for over hang of right front corner of vehicle, as well as the "off-track" of the rear wheels (path of inside rear wheels narrower than front).
—Right Hand Turns: Watch for overhang of front corner (left in this case), but be more concerned with the "off-track" on each turn.
—Diminishing Clearance: Watch for operator's awareness of the width clearance of the vehicle and proper mirror use which would allow the driver to judge his positioning respective to the cones by observing each through the side mirrors as the bus passes through.
—Judgement Stop: Pay particular attention to the operator's knowledge of the clearance in front of the vehicle.
—Bus Stop Maneuvers: Stress the importance of smooth parallel, consistent operation of the vehicle in and out of bus stops. Observe clearance allowed at each one.

—**Backing Maneuvers: Although transit operators should never be allowed to back up a vehicle without the permission of a supervisor, and will most likely not be called upon to back up a bus in the course of their daily activities, it is nonetheless important to teach these skills. Begin by instruction of proper backing in a lane and extend to judgement stops using "reference points." (The use of reference points refers to the practice of aligning through the mirrors a stationary point on the side of the bus with that point on the ground directly below the end of the rear bumper of the vehicle). The use of reference points will allow the driver to compare the location of the very rear of his/her bus with a stationary point along the ground. In addition, make sure operators are aware of the overhead clearance of the vehicle as well.**

Once a driver has learned these simple maneuvers in a consistent manner he/she should have a good feel for the dimensions of the vehicle as well as a healthy respect for the skill it takes to maneuver one. Some trainees may require more practice at these maneuvers than others. This is normal considering the varied skill level of your applicants, and is to be expected. However, you should place a limit on the time allowed for a specific trainee to learn the maneuvers. Quite simply, if the maneuvers cannot be learned by a trainee within a reasonable time frame in respect to the remainder of the class, then that trainee is perhaps not suited to be a bus operator.

It is recommended that you spend a minimum of two half-days with each of your applicants in this phase. Any more than four half days for any single employee should be considered excessive.

Road Work and Route Familiarization

Once your trainees have learned the maneuvers, road work and route familiarization should be next, and would consist of:

—**First, operating a bus over lightly used streets and roads without difficult turns or intersections;**
—**Second, extensive time should be spent operating a bus over each route that the trainee will be driving. This will vary by system size.**

Once your trainees have learned the basic maneuvers of turning, stopping, and checking clearance, it is time to put their skills to the test. Use a spare vehicle not in revenue service and devote considerable time to exposing your trainees to the operation of the vehicle without the distractions of fare collection, passenger requests, etc. Make certain that each trainee gets adequate opportunity to operate each type of coach under these circumstances.

This portion of the training also allows the opportunity for a thorough orientation of the system's transit routes by actually driving the routes. Whether you require your trainees to learn a portion or all of your service routes, it is important that they be exposed to all of them at this point. This will make recall much easier.

Revenue Service Under Observation

The final step in the four step process consists of route observation in revenue service. This consists of:

—**The trainee should be assigned to ride with an experienced operator and observe that operator's activity while in revenue service.**
—**Finally, when ready, and only over light traffic routes at first, the trainee should operate the bus in revenue service while being observed by the experienced operator.**

The final step in the four step training process consists of route observation in revenue service. Each trainee is assigned to ride along on each route with an experienced operator. Once the trainee is comfortable with his/her knowledge of the route the two drivers exchange roles, and the trainee operates the vehicle, handles fares, and deals with passengers while under the observation of the experienced operator. Aside from the obvious benefits of giving a trainee additional exposure to the route system and providing direct supervision of his/her initial efforts, this approach allows for the new trainee to meet several of his/her new co-workers in a business where day to day direct working contact is minimal.

Once these steps have been completed, the operator should be ready for revenue service. If there are any questions in your mind or in your staff's minds, do not hesitate to repeat any portion of the training with any particular individual. There is no substitute for proper preparation and advance planning. It is true that those systems with the most thorough training programs produce generally the safest operators.

POST EMPLOYMENT TRAINING

Once an operator has been hired, successfully passed all physical and vision requirements, and completed the training process he or she can be assigned regular duties.

While under your employ, the operator should be instructed in the following:

—Non-medical Emergency Techniques (see Appendix 6)
—Refresher Training;
—Employee re-training (if necessary).

Non-Medical Emergency Techniques

A good course in non-medical emergency techniques should include:

—A vehicle familiarization program for law enforcement and emergency service personnel;
—Evasive action in potentially hazardous situations;
—Emergency Procedures for accessible service;
—Weather emergency procedures.

Non-medical emergency techniques should be taught to all operators as soon after employment as practical. Knowledge of how to react in a potentially dangerous situation is the key to preventing catastrophes. Your drivers can become well trained in what to do should they encounter such a situation only if you make the effort to teach them.

Inviting your local Police Department or Emergency Service on a tour of your facility including a familiarization session with your transit vehicles will aid these personnel in efficient and safe evacuation of passengers and the preservation of your equipment. Madison Metro has successfully instituted such a program.

Refresher Training

Refresher training in bus operations, conducted three to six months after an employee's initial training should include the following:

—Review of Defensive Driving Techniques;
—On-road observation of operator's driving habits by instructor (not in revenue service);
—Informal observation of operator in revenue service;
—Conduct regular safety and refresher training meetings.

Refresher training, conducted three to six months after the initial training program can be most effective in improving the operator's job skills and attitude. Studies have shown the new operator is most likely to have problems at this time. Rather than learning the hard way—from experience, a refresher course with the accent on defensive driving techniques is a valuable investment.

A two day refresher course is recommended, major components should include:

—Review of the Defensive Driving Course, or other defensive driving instructions, preferably split between the first and second day.

—On-road training, using narrative driving techniques. Use of these techniques allows the instructor to evaluate the student's reactions to possible hazards in the vincinity of the vehicle and whether the operator is observing all potential hazards. It is recommended a ratio of one instructor to two students be maintained for this type of training.

—A classroom discussion of job-related problems encountered by operators including a review of the most common type of incidents experienced by the transit property. Passenger handling skills should also be reviewed. Discussions of this type are usually quite lively and often worthwhile as the new operators relate the experiences they were first told about during the initial passenger relations training. As with the initial session, it is helpful to again include an experienced operator or two.

—A final element of the two day refresher course is to have the employees evaluate the training and retraining program. This includes frank discussions as to what was omitted and what should be deleted.

Refresher training should include all operators, not simply the ones who appear to have problems. One method that has proven to be effective is the regular safety meeting. By conducting such meetings on a monthly basis and including your entire staff, you can keep safe driving foremost in their minds. Use this opportunity to show films, hold discussions, air gripes, make announcements; anything to keep your drivers better informed and on their toes.

Employee Retraining

Sometimes, complete employee retraining is necessary:

—When an operator has two preventable accidents within a twelve month period.

—As a result of an operator's ride check findings.

Employee retraining is for the operator experiencing job performance problems. The initial training of an operator involves a substantial investment. If the operator develops problems of one type or another, it is good business to endeavor to correct, rather than eliminate the operator. By monitoring operator records, problems such as repetitive traffic or passenger incidents can be detected in the early stages.

A progressive program would include:

—At the first indication of the problem (e.g. two preventable incidents in a twelve month period) an in-depth ride check should be made by an instructor in revenue service. The instructor should review with the operator the particular problems and recommend solutions.

—As a result of the instructor's ride check findings, or if the operator's performance does not improve, retraining is required. The training should be tailored to the need; for example, driving skill deficiencies should be addressed through one day of intensive defensive

driving techniques conducted by an instructor on a one-to-one basis. If necessary, the operator should be re-familiarized with his/her practical training in off-road maneuvers, analyzed, and reinstructed as necessary.

EMPLOYEE EVALUATION

All operating employees performance should be continually monitored and evaluated to ensure optimal performance and ensure the well-being of the employee. Your employee evaluation program should include:

—A system of "ride checks";
—A program to reduce distracting influences;
—A review of operators schedules;
—Tests for alcohol and drug abuse;
—Employee Assistance Programs;
—Operator Recognition Programs.

Ride Checks

Ride checks can be done in three different ways:

—Openly, using transit system staff;
—Covertly, using a company specializing in covert driver observation;
—Covertly, using transit system staff from neighboring cities.

A "ride check" in revenue service by an instructor, supervisor, or manager within three weeks of the new operator's graduation from the initial program will prove beneficial. It provides an opportunity for the instructor to assess the operator's performance and can assist in clarifying items that may not have been understood during initial training.

In addition, ride checks by instructors should be conducted on a periodic basis for all operators regardless of length of service. Like a good fleet preventive maintenance program, ride checks every three to four months can prevent operator performance problems. Ride checks should be conducted in regular revenue service so that the instructor can observe both driving and passenger handling performance. The instructor should have a check list to evaluate the operator covering such items as:

—speed control;
—steering;
—intersection operation;
—signaling;
—traffic signals;
—passing;
—entering/leaving bus stops;
—turns;
—smoothness of vehicle operation;
—traffic judgement;
—attitude to passengers;
—use of seat belt; and
—fare handling.

A sample of a good ride check format is included as Appendix 8.

If, in cases where more covert, detailed observation is warranted, there are three ways to accomplish this. The first is by using existing staff equipped with your ride check format. This approach has the advantage of scheduling flexibility and cost containment. The main disadvantage is the inability for easily recognizable management figures to remain "undercover". A second approach to covert surveillance is through the use of an independent safety engineering consultant who can perform these types of services, usually for an hourly fee. If one or more properties can get together and do the surveys at or near the same time the unit cost may be lowered. It is suggested here that you contact the following for more information:

International Transit Services, Inc.
Transit Security Inc.
7617 Frontier Trail
Chanhassen, MN 55317
(612) 934-8338
(612) 623-3900

or

Markel Service Inc.
5310 Markel Road
Richmond, VA 23230
Toll Free: 1-800-446-6675)

The disadvantage of this option is the considerable cost involved. The third option is one that would have to be individually arranged between transit systems in neighboring cities and could be cost effective and covert. This would entail the use of visiting managers or supervisors from neighboring systems.

Reducing Distractions

Reduce driver distractions by:

—Prohibiting radio playing by operators and passengers;
—Prohibiting eating, drinking, and smoking by operators and passengers; and
—Prohibit any unnecessary conversation between the bus operator and the passenger.

Bus operators will, if allowed by work rules, participate in activities that will reduce their effectiveness and attention to their vehicles. Radio playing, eating, smoking, drinking, unnecessary talking to passengers etc., can contribute to ineffective operation of a vehicle.

Reduce your risks by modifying work rules and operating procedures to increase bus operators concentration on driving and passenger contact. Implement progressive discipline programs to enforce these rules and procedures. If situations occur where no rule exists, clarify management's position and curtail these activities through safety bulletins or other devices.

Operator Scheduling

—Create a log to monitor driver hours;
—Minimize overtime without upper level supervisory clearance; and
—Increase road supervision (even if it means doing it yourself.)

During periods of operator shortage, bus operators can be called on to work a significant amount of overtime. Sickness, absenteeism, vacations, holiday periods, inclement weather, etc. can reduce the number of available drivers, causing supervisory personnel to request drivers to work extra hours. Drivers working overtime can become tired, thereby causing a reduction in reaction time and alertness. Reduce your potential for accidents by creating a log to monitor the number of overtime hours an operator works. Minimize overtime by limiting the number of overtime hours allowed without upper level supervisory clearance. Increase road supervision, and monitor overtime of working operators to identify any problems.

Tests for Alcohol and Drug Abuse

Alcohol and Drug Abuse can be serious problems in the transit business. Minimize the effects on your property by:

- **—Treating those with Alcohol and/or Drug Abuse problems with compassion and understanding yet establish stiff and severe disciplinary actions to deal with them;**
- **—Making clear references to rules regarding Alcohol and Drug Abuse in your personnel policies, Employee Work Rules, and/or Union Agreements; and**
- **—Arranging for a competent physician to be available to do drug and alcohol abuse testing in the event that you suspect that an operator is working while under the influence and stipulate that failure to submit to such testing can be cause for discharge.**

Occasionally, transit managers have reason to suspect operators of being under the influence of drugs and/or alcohol while on the job. It is an unfortunate "fact of life" that transit operators have been known to operate in revenue service while impaired, even though this must be considered the most serious of offenses.

Alcoholism and drug addiction are illnesses, and as such should be treated with compassion. However, a bus operator under the influence presents a clear danger to himself and to the public. It is important that you make clear references in your Employee Work Rules, Personnel Policies and/or Union Agreements to the penalties for these offenses and make the disciplinary action swift and serious to reinforce the gravity of the act. You should also make arrangements for the testing of any suspected employees for alcohol or drugs abuse. Your company physician can arrange for such testing. It is important that your Rules, Policies, and Agreements stipulate that failure of such a test, or refusal to submit to such a test, will be an admission of guilt, and grounds for disciplinary action. You should also establish a rule concerning how long a driver must abstain from drinking prior to work.

Employee Assistance Programs

In certain cases where personal problems or substance abuse problems affect employees performance, help can be sought for the affected employee through an Employee Assistance Program (EAP).

- **—Recommended for large and medium sized systems, EAP programs offer a means through which an employee with a problem can seek help.**
- **—EAP programs are not meant as a substitute for existing disciplinary actions or job performance evaluations, but help put the employee in touch with the proper help.**
- **—All medium and large transit systems should follow Madison Metro's example and establish an EAP.**

In certain cases, where substance abuse problems or personal difficulties effect an employee's performance, remedial measures can sometimes be taken to improve the situation and improve the affected employee's performance. Employee Assistance Programs are especially helpful in getting employees the help they need. They are not meant to be a substitute for existing disciplinary actions or job performance evaluations, but are an additional employee benefit for those whose job performance problems may be caused by personal difficulties. EAP programs are not necessarily designed to provide treatment, but are more of a referral service to steer employees with problems towards a path to a possible solution.

The Metro Service Corporation of Madison, currently has a highly effective Employee Assistance Program in place. Metro recognizes that if personal problems are properly diagnosed and treated, a high percentage of cases can recover.

Formal EAP programs though, are not necessarily recommended for small transit systems because of the potential costs involved. What can be just as effective at a small transit system is an informal, more personal approach to the employees by the General Manager, with an "open door" policy for discussing personal problems. As with a formal EAP Program, treatment should be left to the professionals. It would be helpful, however if you as a small system manager could familiarize yourself with the mental health services available in your community. You can do this by contacting your local mental health organization.

Operator Recognition

Recognition for a job well done can take many forms. It is recommended that a formal awards program be instituted at each transit system. The most important factors to remember in the institution of reward programs are:

—Establish a high standard of performance;
—Consistent recognition for attaining that standard;
—Special recognition should be provided at significant levels;
—An awards program could consist of:
- **a medal, patch, or pin program per year of accident free driving; or the program could be:**
- **a team contest;**
- **a team contest including shop personnel;**

—Awards could be cash, but are recommended to be certificates, a small trophy or some other stipend; and
—The costs of an awards program are well worth the benefits.

Operator recognition for safe driving and safe work performance will do much in motivating operators to be conscious of their own safety, and also the safety of others. Where possible, these types of programs should provide for both group and individual recognition when specific, easily understood goals are attained.

Safe driver award programs have been used with varying degrees of success in the motor transportation industry for years. The two key factors in such a program are the establishment of a high standard of performance, and a method of recognition for those attaining the performance standard. Operators should receive recognition for each year of safe driving—a wallet card, lapel pin, patch, etc. Special recognition should be provided at significant levels, e.g., five years, and at subsequent five year levels. A luncheon or banquet for those operators attaining the five year plateau can add support to the program. WMTIC already conducts such a program, that should be expanded locally. In addition,

the National Safety Council sponsors such a recognition program with certificates, pins, patches, and other items available at a nominal fee. For information write to NSC at:

National Safety Council
Safe Driver Awards Program
c/o National Safety Council
441 N. Michigan Ave.
Chicago, IL 60611
(312) 527-4800

Other examples of appropriate programs could include:

—**An annual traffic safety award contest where operators are divided into teams which compete to reduce their traffic incident rate (number of incidents per X number of miles operated.) The winning team receives recognition quarterly, with special recognition for the team winning the annual award.**
—**Operator occupational safety can also be improved through the team competition approach. This can be a most effective method for achieving a reduction in your number of Worker's Compensation Insurance Claims. The goal should be "zero injuries" where teams set targets of a number of hours worked without a disabling occupational injury. It is important the goal is realistic, for example: for a group of 20 operators, 30,000 hours could be considered an attainable target. When a team reaches the first plateau in the contest, recognition should be provided in the form of a team award (plaque or certificate) together with personal awards for team members. At each successive plateau, the awards and the presentation format should be changed to reflect the achievement. When a team records a disabling occupational injury, the accumulated hours are cancelled and they start again from zero.**

Awards received by the transit property for safety performance can greatly assist the overall program. The Wisconsin Municipal Transit Insurance Commission has annual awards for the best safety record on each property. Such awards earned by a property should be well publicized both among the employees and in the community to further enhance employee recognition and interest in the safety program.

Cash Awards

There is a great deal of controversy concerning incentive awards. Some experts feel that money or cash is not a motivator. In fact, the argument states that money can and does become a dissatisfier. This decision will have to be made based on local conditions and practices.

To be effective, incentive programs need not be expensive. A certificate or small trophy will usually be proudly displayed in the home or office for many years, while an equal value cash award briefly enhances the employee's disposable income and is soon spent.

Another factor that must be considered when selecting awards is "What do we do for an encore?" Awards used in any program that involve progression toward a goal, must increase in perceived value as the value of the achievement increases. If the first level of achievement warrants a fifty dollar award, then human nature will expect a sixty or seventy dollar award at the second level. First level awards should therefore be very basic—five to ten dollar value or less depending on the type of program.

The perceived value of an award can also be increased by changing the method of presentation. Presentation locations can also increase the value of an award. Depending on the level of achievement, the presentation can be held "on-site" at a coffee break, on-site lunches, on-site buffets or off-premise during the day or evenings.

An overview of the Direct/Indirect costs of accidents was presented as an earlier part of this manual, so now you can determine with a fair degree of accuracy how much accidents are costing your property.

If you divided an accident's total cost by the number of accidents, you would then be able to determine the average cost per accident. For example, if your system experienced fifty accidents during a given year at a total settlement cost of $20,000, your system's average cost per accident would be $400.

Now let's look at the cost efficiency of an incentive award program with a reasonable expectation of achieving a reduction of accidents:

If you had 40 employees and anticipated 10 awards at $10.00 each, your $100.00 investment would be more than returned, even if the program resulted in a reduction of only one injury or accident.

There is no doubt that incentives, thoroughly researched and publicized, are effective. Goals or objectives of an incentive program must be achievable but not automatic; in short be realistic.

VEHICLE AND EQUIPMENT NEEDS

The five areas of effort where a more formalized or highly developed approach to the treatment of your vehicles and equipment are:

1. **Equipment specifications;**
2. **Retrofitted Safety Devices;**
3. **Preventive Maintenance;**
4. **Pre-Trip (and Post-Trip) Vehicle Inspections; and**
5. **General Safety Practices in the use of equipment.**

When a vehicle or its equipment malfunctions, or is not right for the purpose intended, a chain of events may begin which may end in an accident. A simple example would be the failure of tail lights, which could cause a rear end collision that otherwise may have been avoided. Equipment failure also may be a cause of increased losses when an accident does occur. An example of this could be when a discharged fire extinguisher fails to prevent greater damage in the event of a vehicle fire.

We are suggesting five basic areas of concentrated effort where a more formalized and or highly developed approach would most likely lead to the provision of safer overall service.

Equipment Specifications

Safe operation can be accomplished by design, and preparation of specifications for new vehicles is the most obvious example.

Proper vehicle specifications should include:

- **—Specifying the proper size vehicles;**
- **—Carefully selecting safety related items including, but not necessarily limited to brakes, emergency exits, and kneeling devices; and**
- **—Specify that safety be built into important component parts like seats and rails.**

The proper size vehicle for a transit property can reduce the risk of accidents. Too small a vehicle can cause overcrowding and standees, limiting the operator's vision and increasing possibility of passenger falls. Too large a bus for passenger demands can increase your exposure to vehicular accidents just by the size of the vehicle and the skill levels needed by your drivers to operate such a vehicle. Consider your system's passenger loading requirements when making decisions about the procurement of vehicles. Identify your vehicle capacity needs by having operators report overloads, and by determining maximum load counts on each route. By doing so, you will be able to establish an acceptable ratio of seated to standing passenger load levels for your system, and thus be able to specify the size of your new vehicle to meet these determined needs.

Specification of safety equipment such as brakes, emergency exits, kneeling devices, and seat and aisle design should be of prime importance when purchasing new coaches. Specify that safety be built into all of these important component parts, and do not accept inferior substitutions. Today's buses are generally safer than they used to be, but do not take this for granted, insist on being supplied the latest crash test data by the manufacturer. In any case, always consult with your designated safety and training staff when forming specifications for your new vehicles. Members of the Committee on Risk Management and the Department of Transportation's Bureau of Transit can also provide valuable assistance.

Retrofitting Safety Equipment

Equipping your completed buses or retrofitting your existing fleet with appropiate safety equipment could be one of the most important safety steps you can take. Manufacturers of mass transit vehicles and equipment have reduced potential exposure to accidents and injury over the years by introducing improvements in time-tested safety aids while developing new ones. It is to your advantage to keep up with the latest developments in this area. Serious consideration should be given to the following:

—Mirrors;
—seats and seatbelts;
—passenger seating;
—tires; and
—new safety equipment developments.

Mirrors

In addition to standard right and left hand mirrors, a number of other visual aids are available on the market to improve a bus driver's vision while operating his/her vehicle. A low cost item is a convex "wide angle" mirror. Easily attached to standard mirror posts, this unit will increase the operator's field of vision by as much as 200%. Right hand wideangle mirrors are especially recommended to improve right hand turning movements which are generally tighter than left hand movements, and to aid in observing passenger activity at bus stops and at the rear door.

Blind spots in front and rear step wells are a particularly difficult problem which can be reduced through the proper placement and use of interior mirrors. In addition to a large mirror over the windshield reflecting into the coach, mirrors over the front step well and a relay of mirrors to the rear step well can provide vision into these potentially dangerous activity areas.

Seats and Seatbelts

Properly working safety belts for bus operator seats should be required in each coach. Use of safety belts improves safety by protecting the operator during an accident and by stabilizing the driver during evasive maneuvers to avoid an accident. As with any other safe driving aid, seatbelts are of no help if they are not used correctly. Steps to ensure their use should include provisions in employee work rules or negotiations mandating use of safety belts.

Each coach must be equipped with a fully working, fully adjustable driver's seat. Any problems with driver's seats should be promptly repaired. A simple adjustment in the drivers position can mean the difference between a potential accident and an actual collision. In addition, providing operators with comfortable supportive seating reduces the risk of driving—related operator injury thereby reducing the potential for costly Worker's Compensation claims.

Passenger Seating

Manufacturers have reduced the exposure to injury inside buses by increased padding and elimination of sharp or dangerous surface areas. Nonetheless, all areas of each coach should be examined daily for sharp or rough edges or surfaces, and appropriate corrective action taken.

Floors should be inspected daily as well, and all worn or loose flooring material should be replaced immediately. Far and away the most frequently reported type of accident or incident is the passenger fall. Help to protect your transit system against this costly type of injury by providing a safer passenger environment.

Tires

Where possible, replace bias belted tires with ones of radial type construction for better traction, especially in inclement weather. Institute a system of checking tires on a regular basis for blemishes and tread wear. Remember, each of your buses operates on only a few inches of tire, and those tires must be capable of channeling away slush and water and withstanding the heat of summer pavement.

Other Equipment

Other recommended equipment includes protective, energy absorbing, or "Help" bumpers which absorb the shock of impact and keep damage to a minimum. Although these are costly, and should probably only be considered for purchase when specifying for new buses or for rehabilitation of your existing fleet, you will find the investment worthwhile.

When writing specifications for new vehicles or for rehabilitation of old vehicles include side mounted turn indicators. Especially helpful for tight traffic operation, these units are a relatively low cost safety feature which signal adjacent traffic of indications to change lanes. The use of reflectorized markings on the sides of vehicles is another low cost item that aids the visibility of your vehicle at night, yet can be incorporated into your regular logo or signage so as to blend in during the daytime.

New Developments

Many recent developments in safety aids are becoming available and are worthy of mention here. Closed circuit television monitors mounted on the driver's dashboard with micro cameras aimed from the rear of the bus have been successfully used to aid drivers' rear end vision, and are in use in buses operated by rental car companies in airports and other locations of high pedestrian activity.

Different colored lights mounted on the rear of buses to signal drivers intent to traffic to the rear, have been tried by several transit properties in an attempt to prevent rear end collisions. Usually yellow and green to correspond with decelerating and accelerating; these lights are wired directly to the speed of the engine. The concept is new enough so as not to produce an adequate body of evidence to judge their effectiveness, but at this time use is illegal in the State of Wisconsin.

PREVENTIVE MAINTENANCE

Good preventive maintenance is a cornerstone of any bus safety program. Effective preventive maintenance ensures the integrity of the equipment that you put on the street, which in addition to adding to the life of the equipment and making it more reliable, also makes the equipment safer.

Good preventive maintenance is not only a program of regular vehicle inspections, but also integrates a program of:

1. **Daily inspections and attention;**
2. **Regularly scheduled periodic inspections;**
3. **Interval maintenance; and**
4. **Breakdown maintenance.**

Daily Attention is required to maintain:

—Proper fuel tank levels;
—Proper fluid levels and mixes;
—Interior and exterior cleanliness;
—Replacement of burned out lights;
—Visual inspections; and
—Operational records and procedures.

Additionally, it is necessary for the drivers to effectively communicate vehicle defects to the manager so that the proper repairs can be made. Use of an operator completed Pre-Trip (or Post-Trip) inspection checksheet (example in Appendix 9) is recommended.

Periodic Inspections are required to:

—Provide maintenance personnel with the opportunity to detect damage before major repairs are necessary.

Periodic inspections are scheduled to provide maintenance personnel with an opportunity to detect and repair damage or wear conditions before major repairs are necessary. Inspection items include:

- **suspension elements;**
- **leaks;**
- **belts;**
- **electrical connections;**
- **tire wear; and**
- **any other noticeable problems.**

Many of these items have a direct bearing on the level of safety in the operation of buses. All periodic inspections should be conducted according to instructions specified by the manufacturer.

Interval Maintenance

Some vehicle components are "time-sensitive" meaning they will wear at the same rate regardless of the miles a bus operates. An example of time sensitive components are wiper blades which will wear or crack because of age not necessarily how much or how often they are used. Other components are "mileage-sensitive", and primarily wear only when used. A prime example of a mileage sensitive component would be tires.

Interval maintenance should be set up on a time and mileage schedule in order to anticipate wear, alignment, or deterioration problems of parts or fluids. Replacement intervals of these items are determined through experience and manufacturer recommendations. Any good interval maintenance program should include:

—lubricating oils and filters;
—alignment;
—tires;
—steering components;
—corrosion and body damage check;
—engine;
—transmission;
—drive train check;
—air engine oil analysis; and
—thorough check of all safety related equipment.

Breakdown Maintenance

Breakdown maintenance is required when a failure is encountered by a vehicle that makes it unsafe to continue operation. These repairs are unscheduled and usually require a vehicle switchout or field service call to repair. Examples are:

—flat tires;
—line ruptures;
—loss of brakes; and
—engine failures.

When making a decision about the continued operation or replacement of a coach in revenue service, your most important consideration should be the safety of the passengers and your operator, and not the severity of damage, expense of repair, or the disruption of your schedule.

Pre-Trip and Post-Trip Vehicle Inspections

An example of a Pre-trip checksheet is supplied in Appendix 9 of this Manual.
A good inspection checksheet should include at a minimum a check of:

—all lights;
—mirrors;
—brakes;
—tires;
—wipers;
—steering;
—engine/drive train;
—dangerous passenger situations; and
—body damage.

Every effort should be made to restrict non-essential personnel from entering maintenance, fueling and washing areas. This reduction of unnecessary pedestrian activity will reduce the exposure to the many risks present in these areas. The elimination of often untrained or uninitiated persons can also improve the efficiency of your operation by reducing distractions.

In small systems, where fueling and washing duties are often shared by the drivers, it is imperative that they are trained as to how to move the vehicles in and around the maintenance area, primarily fuel and wash bays. This exposure can be reduced by providing an extra person to help the drivers who are sometimes tempted to neglect proper safety procedures in their haste to complete fueling and washing activities.

Completing the checklist should be required of all operators prior to taking a vehicle into service and upon "handing over" the vehicle or turning in the vehicle.

By completing this form every day, maintenance management can keep tabs on, and make timely repairs to such safety items as lights, mirrors, brakes, tires, wipers, and the like. Such inspections can also ensure reporting of potentially dangerous situations in passenger areas such as torn seats, sharp objects protruding into aisles, worn or broken steps, or cracked or broken glass.

Daily preventive maintenance inspections also allow maintenance management to keep tabs on vehicle body damage as the result of unreported accidents.

A checklist format is the most effective. The use of a format promotes its accurate completion by operators, and ensures that they remember all important components in the process of their check.

It is noteworthy to indicate here the importance of quick response by maintenance personnel in the repair of defects that are reported via the daily format by the drivers, especially in relation to safety issues. Aside from the obvious benefits of maintaining a fleet in A-1 condition, quick response by maintenance personnel reiterates the importance of operator input in your vehicle maintenance program which helps to ensure the continued cooperation of your operators.

FACILITY SAFETY

Vehicle movement is a significant risk exposure on a transit system property. Improve your risk exposure by doing the following:

—Instruct all maintenance personnel in the use of mirrors, braking systems, vehicle defensive driving, traffic regulations, and route familiarization.
—Examine the traffic flow at your facility for blind spots and other potentially dangerous areas.
—Install permanent markings, signs, etc.
—Prohibit the backing of a vehicle without a spotter.

Drivers, hostlers, or mechanics who move vehicles in and out of buildings, maintenance bays, and wash bays create situations where accidents can occur. You can reduce your exposure to these accidents by instructing all maintenance personnel in use of mirrors, braking systems, vehicle defensive driving, and traffic regulations. Any hostler or mechanic who will be driving a bus should receive behind the wheel training that is offered in off-the-road training.

Examine your transit system facility for "blind spots" and vision obstructions. Mirrors and other visual aids should be installed if necessary. Warning signs should be installed in vehicle movement areas, and safety lines for pedestrian traffic should be painted. In addition, all operators and maintenance personnel should be instructed in the use of the horn whenever a vehicle is moved, and you should institute regulations prohibiting the backing of any vehicle without a "spotter".

Maintenance, Fueling, and Washing Area Access

Ensure safety and reduce the risk of accidents in maintenance, fueling, and washing areas by:

—Restricting non-essential personnel from entering these areas; and
—Providing thorough instruction in the use of related equipment to all employees who will be authorized to use it.

ROUTING, SCHEDULING AND BUS STOP PLACEMENT

Service Design

Before institution of any new transit services always ensure the safest routing possible by:

—minimizing turns;
—allowing for intersection controls;
—avoiding dangerous intersections; and
—avoiding the need to cross several lanes of traffic.

The routing design of your transit system has a great impact on the safe operation of your buses, and needs to be considered as part of an overall Bus Safety Program. Analysis of which roads and streets are utilized from a safety standpoint can be a significant step in reducing exposure to risk. Turns, grades, intersection controls, crossing lanes of traffic, speed limits, and traffic levels are contributing factors in designing safe routing options.

Scheduling

Route scheduling can be specified to promote safe operation of transit vehicles by paying attention to the following:

—Route schedules should allow the use of defensive driving techniques without placing stress on bus operators.
—Daily changes in passenger demand (peak to non-peak) should be considered in route scheduling.
—Seasonal changes in demand and weather conditions should be considered in route scheduling.
—The on time performance of transit system routes should be examined as an indicator of scheduling difficulties.
—Transit system supervisory personnel should ride each route to observe if scheduling is inappropriate.
—Routes where drivers need to "run hot" to make their time points should undergo evaluation.

Routes and schedules that do not have adequate running time will force the bus operator to drive faster, hurry passengers, and generally cut corners in performing their daily routines. This activity can be a major cause of inattentive driving and exposure to accidents. On the other side, too much running time may also cause problems by providing too much idle time, enticing operators to leave their running bus.

Each route should be evaluated during street operations. Attention should be paid to changing traffic patterns (i.e. morning and evening rush periods vs. midday)

Bus Stops

The bus stop is the initial exposure to the transit system by bus riders. Because the transit operator is potentially liable for incidents occuring in them, bus stop safety should be a primary Bus Safety concern. The following should be considered in the placement of bus stops:

—Adequate waiting areas;
—Safety in bus transfers;
—Directional markings;
—Traffic (auto) movement;
—Re-entry to the flow of traffic; and
—Adjacent land use.
—Bus curb loading zones should be long enough to enable bus drivers to approach the stopping area at a reasonable rate of speed, pull buses completely out of moving traffic lanes, and stop parallel and close enough to the curb so that passengers may enter and leave any door by an easy step. Use the following table to guide you in determining the length necessary for safe bus stops. Farside stops should be designated where possible

to promote passenger safety. An acceptable exception may be when there is an established transfer point.

—Bus shelters and benches should be placed to minimize potentially liable situations.

Recommended Length of Bus Stop Zones

Bus Seating Capacity (approximate)	Bus Length in feet	One Bus			Two Bus		
		Nearside	Farside	Midblock	Nearside	Farside	Midblock
30	25	90	65	125	120	90	150
35	30	95	70	130	130	100	160
39-45	35	100	75	135	135	110	170
45 and over	40	105	80	140	140	120	180

The location of each system bus stop should be reviewed for passenger boarding and alighting safety. Criteria should include adequate waiting areas, safety for bus transfers, and directional markings to smoothly direct passenger activity.

All passenger boarding and alighting areas should be clearly marked, and it is our recommendation that buses only be allowed to stop in designated bus stop areas. This limits passenger movements on and off of buses to organized, safe locations.

In addition, you should create awareness for bus stop safety by identifying general rules for bus stop placement, i.e., farside at intersections, and designated mid block areas.

Bus shelters and benches are also locations where transit operators are potentially liable for incidents. Therefore, it is important that you place street furniture only where it is safe to do so, and does not obstruct the vision of traffic, nor place your waiting passengers in any impending jeopardy. Local traffic authorities and zoning requirements generally have "vision triangles" that preclude obstructions in certain areas. It is also important to maintain these structures to prevent possible hazardous conditions. Replace cracked or broken panels in bus shelters and damaged slats on benches. It is also extremely important that you keep these amenities free of snow and ice, because the dangerous weather conditions of Wisconsin's winters do not only apply to streets and roads.

ACCIDENT INVESTIGATION TECHNIQUES

A comprehensive Bus Safety Program requires a certain degree of sophistication in accident investigation. Such a program involves:

—Accident Data Collection;
—On-Site Investigation;
—Technical Presentation;
—Reconstruction and Causal Analysis.

Accident Data Collection

The following steps should be implemented in the event of an accident:

—Information should be collected by the vehicle operator, transit system manager or designated Safety Officer, and the police.
—A designated Safety Officer, supervisor, or manager should be dispatched to the scene of every accident if possible.
—Each operator should have an established accident procedure.
—Accident procedures should be reviewed with all operators during safety meetings.
—A reporting procedure through your chain of command to your insurance carrier and state, regional, or local transit board should be established.

Data collection is the foundation of any credible program, and should be performed by the vehicle operator, the safety officer or transit manager, and the police. It is also important that a designated safety officer, supervisor, or manager be dispatched to the scene of every accident involving a transit authority vehicle. Often times the presence of an authority figure lends calm to a potentially chaotic situation, while at the same time ensuring that the appropriate information is collected. In addition, any operational decisions such as the dispatching of a backup vehicle or the removal of a disabled vehicle will be better informed because they are made at the scene.

Every transit provider should have an accident investigation procedure, of which all employees must become familiar. Ongoing review of the policy by the Safety Committee may however, identify needed changes in the policy or in specific procedures. Accident Investigation procedures should also be reviewed with all employees at least twice each year.

Prior to any accident investigation, proper notification of the appropriate personnel must occur. A standard procedure should be published with specific instructions for radio communication with the dispatcher, proper chain of notification from the dispatcher to management, public safety officials, and insurance carriers. In many cases additional reports must be filed with state, regional or local transit boards or authorities and Worker's Compensation Insurance carriers.

Each vehicle or driver should contain in an easily accessible location, an "Accident Reporting Packet" with step by step instructions. A sample accident reporting packet appears in Appendix 11.

On-Site Investigation

Serious accidents require a more thorough investigation by transit system staff. The following steps should be followed:

—A designated member of the transit system staff must respond to any accident which

produces an estimated five hundred dollars worth of third party property damage or involves any bodily injury.

—The designated staff member must collect all pertinent information and prepare a report with pictures and appropriate measurements and evidence collection if possible.

A thorough accident investigation undertaken by a designated safety officer, must be done at the scene of any incident which produces more than an estimated five hundred dollars worth of third party property damage, or at any incident that involves any bodily injury. On-site data accumulation, like any other task, requires special materials and prior preparation. Appendix 12 outlines materials and supplies necessary for concise data gathering.

Data collection should include proper photography and measurement techniques. Please refer to Appendicies 13 & 14 for specific photography instructions, and measurement hints. Special attention should be given to proper measurement and photography of skid and gouge marks. Both of these types of "road scars" should be recorded as soon as possible. They tend to disappear quickly and are the subject to alteration. Gouge marks may indicate points of impact; and skid marks, measured properly, may provide an accurate method to determine the speed of vehicles involved in the accident. Even photographs taken after the involved vehicles are no longer in their original resting place may be valuable if the debris and skid marks have not been altered or obliterated. Pictures of vehicles or other objects involved should also include road and environmental conditions.

Technical Presentation

The investigator should record observations about all factors which may have an effect on the accident such as:

Persons
—Name
—Address
—Telephone Number
—Operator's license—State of Issue, Expiration, Special Class of Operation, Restrictions
—Date of Birth
—Discription of injury if any

Lamps
—On or off
—Shorts or faulty circuits
—Cleanliness
—Switch position
—Filament status
—Correct bulb

Tires
—Blowout (before, during, after)
—Tread wear/cuts/abuse
—Cord damage by rim
—Unmatched tires and sizes (radial/belted/bias, etc.)

Weather
—Rain
—Snow
—Temperature
—Ice
—Sleet/hail
—Lightning/thunder
—Wind
—Glare
—Darkness (to include sunrise and sunset)

Equipment
—Make, Model and Year
—Serial Number, Fleet Number
—Registration Number, State, and Expiration - Seating Capacity
—Insurance Carrier—Policy Number, Date of Expiration
or Policy Record, Agent's or Claims Representative's Telephone Number

Roadside Obstacles
—Trees
—Utility Poles
—Rocks
—Sign Supports
—Light Supports
—Narrow Bridges

Pavement Surface
—Potholes
—Crown or Highway
—Low Shoulders—Soft Shoulders
—Surface Texture—Drag Factor
—Inconsistent Surface
—Elevated manhole covers
—Missing manhole covers

Roadway Geometry
—Curves—Super elevation—Roadside bank or curves
—Lane Width
—Changes in lane or road width
—Shoulders
—Guard Rails
—Curbs
—Grades
Construction Zones
—Advance Warning
—Equipment
—Signage
—Barricades
—Visibility (dust, etc.)

Railroad Crossing
—Sight distance
—Warning devices
—Crossing procedures
—Encroaching traffic

Lighting
—Glare
—Transition
—Confusion (arrows or directional traffic control)

Signage
—Advance warning
—Confusing messages
—Visibility
—Uniformity

Collection and proper retention of evidence will contribute greatly to the success of any reconstruction effort. Preservation of the evidence's integrity will contribute to its successful integration into any accident investigation. Review the Protection of Evidence guide in Appendix 15 for specific recommendations on protection of evidence and what might constitute valuable data and what forms it may take.

To supplement your photographs, and as a back-up for photographs, a basic sketch of the scene is helpful. Consult Appendix 16 for basic instructions in the preparation of a sketch.

Reconstruction and Causal Analysis

A summary report should then be prepared following this suggested format:

I. Cover Page
—Report Number
—Date of Accident
—Company Name
—Company Driver's Name and I.D. Number
—Name of person making report

II. Synopsis of Accident
—Date and Time of Accident
—Names, addresses, Dates of Birth and Telephone Numbers of all Persons Involved
—Location of Accident
—Results of the Accident Damage, Injuries

III. Narrative description of the Accident
—Chronological, When Possible
—Use and Identify All Available Information Sources.

IV. Summary of Evidence
- **—Skid Marks**
- **—Glass/Metal Fragments**
- **—Sketch**
- **—Statements**
- **—Gouge Marks**
- **—Point Transfers**

V. Exhibits
- **—Operation Report**
- **—Accident Data Forms**
- **—Police Report**
- **—Courtesy Cards**
- **—Newspaper Articles**

Copies of your files should be sent to your insurance carrier to aid in their disposition of any claims which may arise from any incident or accident. The task of the accident investigator is to provide comprehensive, accurate data on which any furthur investigation can be carried out. The carrier and the Safety Committee can use this data to improve the operations of the system.

Most accident investigators will not be the person authorized by the company to release information to the news media. However, the accident investigator will probably be one of the first company representatives to encounter the media at the scene. Therefore, every accident investigator should know some of the fundamental techniques dealing with the news media. Appendix 17 provides for specific suggestions for projecting a professional attitude with the press, especially in crisis type situations.

SAFETY AND ACCIDENT REVIEW COMMITTEES

Safety Committees

A number of insurance companies and transit systems now advocate the formation and use of formal transit safety committees. Designed to include all aspects of the transit operation, these committees have proven to be useful in increasing safety awareness at all levels by creating a forum for well organized discussion of safety related issues.

—Safety Committee membership should consist of a minimum of three individuals; One representative of Management, One representative from the operators ranks or Union, and a third safety representative perhaps from the City or other local safety organization.
—The committee should be formed to take " Proactive" and "Reactive" roles in the safety process.

The Safety Committee is the review agency for many transit providers. The Committee's primary responsibility is to make management aware of safety-related problems on the property. Membership on the Committee should consist of representatives of every department; management and employees. The Committee is the avenue for interactive problem solving and the vehicle for communication of safety related concerns to the employees.

The Committee's function is at the same time "PRO-ACTIVE" and "REACTIVE". To fulfill both of these roles, committee meetings should be scheduled on a regular basis, preferably not less than monthly.

The committee's "Pro-Active" roles may include, but are not limited to:

- **Monitor safety policies and procedures;**
- **Suggest annual safety goals and objectives;**
- **Identify and monitor training program for supervisors relating to safety;**
- **Identify and monitor operator incentive programs (separate details of which can be found in this manual);**
- **Review new or unusual jobs prior to activity actually commencing;**

Reactive tasks assumed by the Committee may be, but are not necessarily limited to:

- **Special surveys based on loss data-trends, frequency and/or severity;**
- **Corrective activity recommendations based upon investigations—**
  - **—Retraining**
  - **—Route Deviations**
  - **—Investigation of revised practices;**
- **Review and take corrective actions based upon periodic review of loss data. (Additional information relating to the interpretation of loss generated data may be found in Appendix 1 of this manual).**

Successful Safety Committees require thorough planning and organization. Meetings should be conducted on a formal basis; however, the formality should never be allowed to interfere with the Committee's true goal—effective communication and assurance of safety in operations.

Accident Review Committees

Accident Review Committees deal strictly in the review of accidents involving transit system employees. Meetings should be held in response to your system's accident rate.

Accident Review Committee membership should consist of, as with the Safety Committee, at least one representative each, from management and labor and at least one independant member from a local safety organization.

Meetings of the Accident Review Committee should also be conducted on a formal basis at which time each accident will be reviewed and judgement made to determine its "Preventability" or "Non-Preventability" based on the National Safety Council Criteria that is presented in the next section. Any resulting disciplinary action against the driver, will of course be the responsibility of system management. The final determination of any disciplinary action will be made by the General Manager.

PREVENTABLE AND NON-PREVENTABLE ACCIDENTS

One function of the Accident Review Committee is to determine if any accident involving a transit system employee is "preventable" or "non-preventable".

The Committee should be given the task of reviewing all accidents referred to them to determine if management's assessment of the accident is correct. Management reserves the right to make the final determination. The industry standard for these determinations is the "preventable/non-preventable" standard established by the National Safety Council and described below:

PREVENTABLE ACCIDENTS

A preventable accident is any accident in which the driver failed to do everything he/she could reasonably have done to avoid it. By contrast, a non-preventable accident is any accident in which the

driver has done everything he/she could have done to avoid it based on the criteria listed below.

In interpreting preventable and non-preventable accidents, the council defines the following preventable accidents:

1. Intersections

It is the responsibility of professional drivers to approach, enter, and cross intersections prepared to avoid accidents that might occur through the action of other drivers. Complex traffic movement, blind intersections, or failure of the "other driver" to conform to law or traffic control devices will not automatically discharge an accident as "non-preventable." Intersection accidents are preventable even though the professional driver has not violated traffic regulations. His/her failure to take precautionary measures prior to entering the intersection are factors to be studied in making a decision. When a professional driver enters an intersection and the action of the "other driver" indicated possible involvement caused by the drivers excess speed, crossing his/her lane in turning, or coming from behind a blind spot, the decision based on such entrapment should be PREVENTABLE.

2. Vehicle Ahead

Regardless of the abrupt or unexpected stop of the vehicle ahead, your driver can prevent rear-end collisions by maintaining a safe following distance at all times. This includes being prepared for possible obstructions of the highway, either in plain view or hidden by the crest of a hill or the curve of a roadway. Overdriving headlights at night is a common cause of rear-end collisions. 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.

3. Vehicle Behind

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

4. Passing

Failure to pass safely indicates faulty judgement and the possible failure to consider one or more of the important factors a driver must observe before attempting a maneuver. Unusual actions of the driver being passed or of oncoming traffic might appear to exonerate a driver involved in a passing accident; however, the entire passing maneuver is voluntary and the driver's responsibility.

5. Being Passed

Sideswipes and cut-offs involving a professional driver while he is being passed are preventable when he fails to yield to the passing vehicle by slowing down or moving to the right where possible.

6. Oncoming

It is extremely important to check the action of the driver when involved in a head-on or sideswipe accident with a vehicle approaching from the opposite direction. Exact location of vehicles, prior to and at the point of impact, must be carefully verified. Even though an opposing vehicle enters your driver's traffic lane it may be possible for your driver to avoid a collision. For example, if the opposing vehicle was in a passing maneuver and your driver failed to slow down, stop, or move to the right to allow the vehicle to re-enter his/her own lane, he/she has failed to take action to prevent the occurrence. Failing to signal the opposing driver by flicking the headlights or sounding the horn should also be taken into account.

7. Fixed Objects

Collisions with fixed objects are preventable. They usually involve failure to check or properly judge clearances. New routes, staged delivery points, resurfaced pavements under viaducts, inclined entrances to docks, marquees projecting over traveled section of road, and similar situations are not, in themselves, valid reasons for excusing the driver from being involved. He must be constantly on the lookout for such conditions and make the necessary allowances.

8. Pedestrians

Traffic regulations and court decisions generally favor the pedestrian hit by a moving vehicle. An unusual route of a pedestrian at mid-block or from between parked vehicles does not necessarily relieve a driver from taking precautions to prevent such accidents. Whether speed limits are imposed on the area or not, speed too fast for conditions may be involved. School zones, shopping areas, residential streets, and other areas with special pedestrian traffic must be traveled at reduced speeds equal to the particular situation. Bicycles, motor scooters, and similar equipment are generally operated by young and inexperienced operators. The driver who fails to reduce his/her sight-distance has failed to take the necessary precautions to prevent an accident. Keeping within posted speed limits is not taking the proper precaution when usual conditions call for voluntary reduction of speed.

9. Private Property

When a driver is expected to make pick-ups or drop-offs at unusual locations, or on driveways not built to support heavy commercial vehicles, it is his/her responsibility to discuss the operation with the transit management and to obtain permission prior to entering the area.

10. Passenger Accidents

Passenger accidents in any type of vehicle are preventable when they are caused by faulty operation of the vehicle. Even though the incident did not involve a collision of the vehicle, it must be considered preventable when your driver stops, turns, or accelerates abruptly. Emergency action by the driver to avoid a collision that results in passenger injury should be checked to determine if proper driving prior to the emergency would have eliminated the need for the evasive maneuver.

11. Non-Collision

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

12. Failure to Adjust for Conditions

Adverse weather conditions are not a valid excuse for being involved in an accident. Rain, snow, fog, sleet, or icy pavement have never caused an accident. These conditions merely increase the hazards of driving. Failure to adjust driving to the prevailing weather conditions, should be cause for deciding an accident preventable. Failure to use safety devices such as skid chains, sanders, etc., provided by the company, should be cause for a preventable decision when it is reasonable to expect the driver to use such devices.

13. Miscellaneous

Improper use of doors or interlock systems, or passenger accidents resulting from passenger hanging out of windows are preventable by the driver.

MONITORING OF PROGRESS

By applying the guidelines to a comprehensive Bus Safety Program as outlined in this manual, you will be taking a systematic approach to management of risk for your transit system which if effectively monitored, will bring about positive results in minimizing the adverse effects of risk.

Deciding on basic policy and goals for Bus Safety will establish Risk Management as a priority with your organization and will determine the importance to which you assign the process.

Identifying, analyzing, and measuring the specific risks, hazards, or perils that your transit system faces, will be accomplished with greater ease if you review the loss run information that is available from your insurance carrier. By doing so, you will be essentially performing a self-audit which will give your organization an indication of the specific areas of potential liability that you must concentrate on.

Making a decision to avoid, reduce, control, assume, or transfer specific risks, hazards, and/or perils; essentially the process of buying insurance, establishing "hold harmless" agreements, or accepting risk, can be more effectively accomplished after completion of the first two steps in the process.

Developing and implementing foresight techniques will help to minimize your loss exposures. This most time consuming and crucial process in the Bus Safety Program will be aided by tips contained in this manual.

Reviewing and establishing support systems will help solidify the framework within which your Bus Safety Program operates. Perhaps of most importance here is the establishment and function of standing Safety and Accident Review Committees, which will be involved in all areas of your operation and bring your entire organization into the Risk Management process.

Finally, by collecting and analyzing appropriate data, including Accident/Incident Reports, you will be able to evaluate your system's performance as well as establish formal documentation of all incidents which will better serve your organization in those situations where your Insurance program is challenged.

Over the next few months, as your Bus Safety Program evolves, the Wisconsin Municipal Transit Insurance Commission, Committee on Bus Safety will, with the assistance of the preparers of this manual, and the WMTIC Insurance Program Underwriter, be establishing a reporting system which will allow your transit system a comparison of experience with similar systems in the state.

Incorporating the steps outlined in this manual, coupled with the reporting system will establish a statewide initiative in Risk Management, and establish firm control over the costs of insurance for all of Wisconsin's Urban Transit Systems.

APPENDIX 1
SAMPLE BUS SAFETY POLICY

It is important that the chief operating executive rewrite this statement to communicate his/her own philosophy and desires relating to Safety/Loss Control.

POLICY STATEMENT
SAFETY/LOSS CONTROL
[SAMPLE ONLY]

PHOTOGRAPH

1. Accidents involving our employees or damage to our property are waste. Accidents cause needless hardships to our employees and also reduce our ridership potential.

2. The old philosophy that safety must be "sold" just does not hold true today.

3. We realize that our employees are our greatest resource and, because of the importance of maximizing service and quality potential along with the necessity of controlling costs, employees at all levels will be held responsible and accountable for applying our safety policies and procedures diligently and consistently.

4. Every employee's safety performance will be considered equally with their other primary job responsibilities in consideration of promotional and wage increase opportunity.

5. We pledge to constantly renew our efforts toward safety, and to continuously seek new programs and opportunities to increase system safety.

6. You have our commitment and support in assuring that our system will be a transit industry leader in Accident Prevention. We are confident of your cooperation.

Signature _____
Executive Director
General Manager

Signature _____
President, Board of Directors

Note: Print on glossy paper. This should be posted.

APPENDIX 2
HOW TO READ A LOSS RUN

The monthly, quarterly or semi-annual loss run is a basic diagnostic tool. Review of your run will indicate to management any ongoing or emerging loss trends. Attention should be directed especially to note the types of accidents/incidents, repetition of location, operator or repeating claiment.

The following pages outline the different components of a typical loss run printout, and define some frequently used terminology used in the review of loss run data. In addition the flow chart documents the process of loss run review and the reporting of results to the Transit Authority's Safety Committee.

1) **Claim Number—insuror identification of incident or accident**
2) **Claimant Name—the Third Party's identification, Third Party is a natural person or an organization or corporation seeking to recover damages from the First Party, the insured**
3) **Coverage—indicates the "line" of coverage—for example "AL—Auto Liability"**
4) **State—for use in filing statistics with the state rating bureau and Insurance Services Office—location of accident**
5) **Date of Accident—actual date of loss, not necessarily date of report.**
6) **Property Damage Reserve—insuror's estimate of final loss to settle claim may be in addition to any payments already released for property damaged.**
7) **Bodily Injury Reserve—Insuror's estimate of final costs to settle Bodily Injury portion of claim, may be in addition to any prior payments for Bodily Injury**
8) **Expense Reserve—Insuror's estimate of final extraordinary expense costs relating to the settlement of the claim.**
9) **Driver Name—Operator of insured's vehicle**
10) **Accident Description—Verbal explanation of incident**
11) **Status—claim is either open or active, or closed.**
12) **Property Damage—Paid—Amount previously paid by insurer to claiment (Third Party), net of allocated loss expense, if any.**
13) **Bodily Injury—Paid—Amount previously paid by insuror to claiment (Third Party), net of amounted loss expense if any.**
14) **Expense Paid—Allocated loss Expenses paid as of the date of the loss run.**
15) **Total Incurred—Total of bodily injury, paid and reserve, property damage, paid and reserve; expense, paid and reserve; the insurers estimate (on an open claim) or actual total costs generated by this claim.**

Claim—a demand for something due or believed to be due, as an insurance claim.

—A demand by an individual or corporation to recover under a policy of insurance for loss which may come within that policy. A demand by an individual against an insured for damages covered by a policy held by the insured; such claims are referred to the insurance company for handling on behalf of the insured in accordance with the contract terms.

—The estimated or actual amount of a loss.

Claimant—individual asserting a right or presenting a claim for a suffered loss. One who makes or presents a claim; third party.

Claim reserve—an amount of money set aside by an insurance company to cover projected costs of a claim in, or subject to, litigation.

Cross liability—the interaction of insurance companies to determine responsibility between or among claimants in a suit.

Deductible per occurrence (same as "straight deductible")—a stated dollar amount of loss which for each occurrence will be borne by the insured.

Incurred losses—dollar amounts paid out in claims plus dollar amounts held in reserve by the insurance company on any given policy.

Liability—the state of being bound or obliged in law or equity; a responsibility. Exposure to a certain contingency of an undesired character. Furthur an obligation, usually finanical; the probable cost of meeting an obligation.

LOSS REPORT: BY ACCIDENT DATE — Wisconsin Transit Company — A3

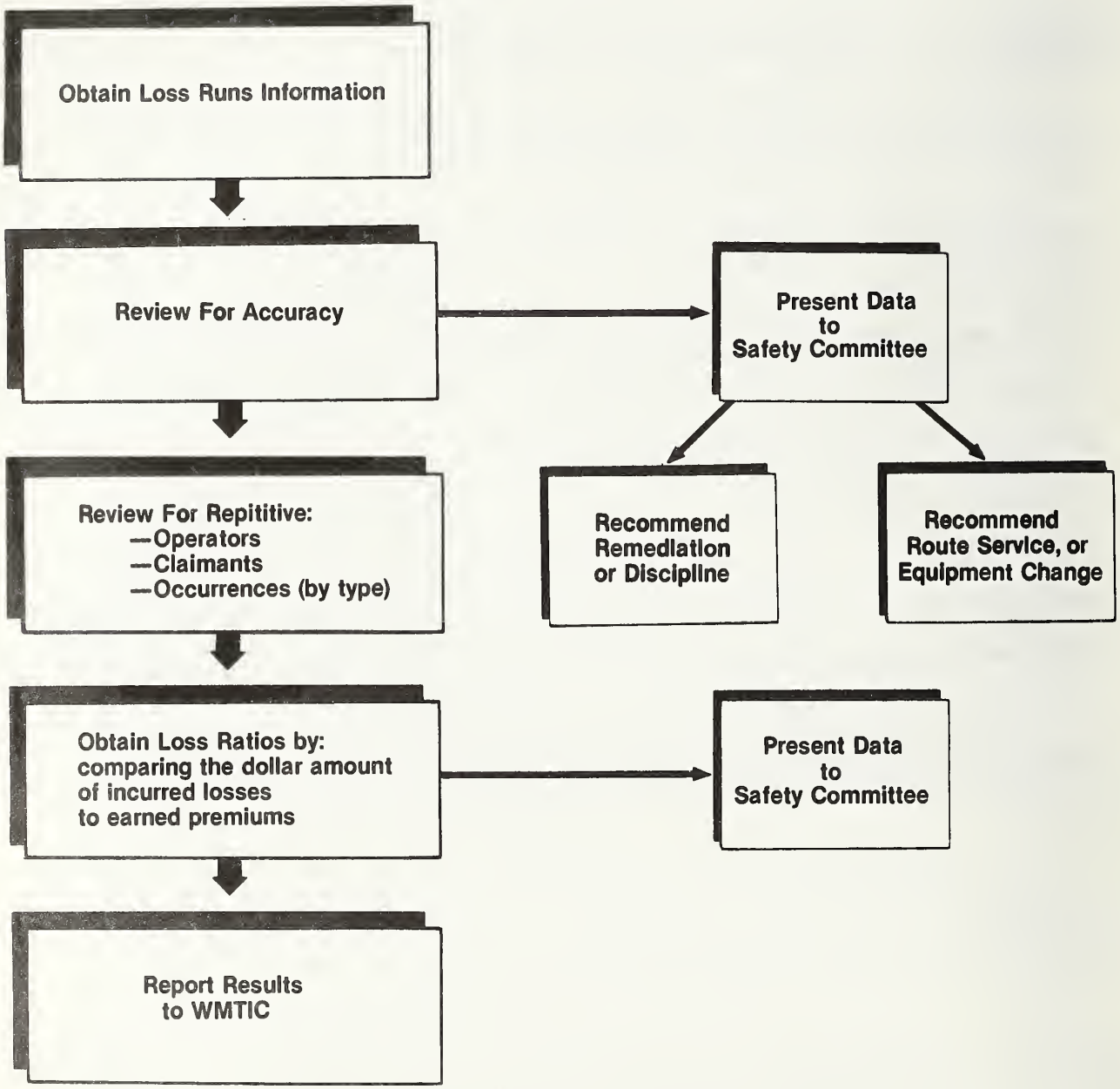
POLICY YEAR: 09/30/81-09/29/82 — POLICY NUMBER–420 06 09

VALUED AS OF: 6/12/84

FOR THE PERIOD ENDING: 06/01/84

CLAIM NUMBER / DRIVER NAME	CLAIMANT NAME / ACCIDENT DESCRIPTION	/COVERAGE	STATE / STATUS	DATE OF ACCD.	P.D. RESERVE/ PAID	B.I. RE- SERVE/ PAID	EXPENSE RE- SERVE/ PAID	TOTAL INCURRED
81A000051043 000	YANG G. E.	/ AL	WI	10/ 1/81	.00	.00	.00	
	CLMNT FELL—HIT ARM & WATCH		C		79.95	50.00	.00	$129.965
81A000051165 000	ANNEN PETTY	/ AL	WI	10/ 6/81	.00	.00	.00	
	CLMNT LOST BALANCE/SPRAINED ANKLE		C		.00	500.00	.00	$500.00
81A000051167 000	BALDWIN MARGERET	/ AL	WI	10/16/81	.00	.00	00	
	CLMT FELL AS BUS STOPPED		C		.00	500.00	.00	$500.00
81A000051210 000	ZABIT WILLIAM	/ AL	WI	10/23/81	.00	.00	.00	
Kramden, R.	BUS CHANGED LANES, HIT AUTO		C		140.00	.00	.00	$140.00
81A000051211 000	ANDREONI PATRICK	/ AL	WI	10/26/81	.00	.00	.00	
	CLAIMANT JUMPED CURB		C		150.00	.00	.00	$150.00
81A000051396 000	MAGNUSON PAUL	/ AL	WI	11/19/81	.00	.00	.00	
	BUS MADE LT TURN IN FRONT OF CLMNT		C		1,306.49	.00	.00	$1,306.49
81A000051598 000	KIPNIS HILARY	/ AL	WI	11/24/81	.00	.00	.00	
	BIKE RIDER SLIPPED IN CY CURB		C		250.00	750.00	.00	$1,000.00
81A000051480 000	CITY OF MADISOPARKS	/ AL	WI	11/27/81	.00	.00	.00	
	RUNAWAY—HIT 2 TREES AND LIGHT POLE		C		1,548.57	.00	.00	$1,548.57
81A000051465 000	SCHNERING MR. MRS.	/ AL	WI	12/ 1/81	.00	.00	.00	
	MERGER BY BUS INTO LH LANE ST PK CA		C		1,294.38	.00	224.64	$1,519.02
81A000051536 000	BUNDY LISA	/ AL	WI	12/ 1/81	.00	.00	00	
	BUS FAIL TO YIEL R. OF WAY—HIT CAR		C		387.95	.00	.00	$387.95
81A000051511 000	SKULDT GREGORY	/ AL	WI	12/ 3/81	.00	.00	.00	
	BUS PULLED FROM CURB—HIT CLMNT.		C		200.00	.00	.00	$200.00
81A000051478 000	FRANK HERB	/ AL	WI	12/ 7/81	.00	.00	.00	
	IMPROPER LT. HD. TURN STRUCK CAR		C		219.13	.00	.00	$219.13
81A000051618 000	SEVERSON DENISE	/ AL	WI	12/ 7/81	.00	.00	.00	
	CLMNT CAUGHT COAT ON A CRACK. SEAT		C		73.00	.00	.00	$73.00
81A000051597 000	VULTAGGIO JULIE A.	/ AL	WI	12/10/81	.00	.00	.00	
	BUS CAUGHT RT HD FRT. WHEEL OF CAR		C		530.71	.00	.00	$530.71

FLOW CHART PROCESS FOR LOSS RUN REVIEW



Liability, contingent—liability for damages arising out of the acts or omissions of others, not employees nor agents.

Liability, contractual—an obligation assumed by contract pay damages for which another is legally liable. See Hold-Harmless Agreement.

Liability, legal—an obligation enforceable at law.

Liability, insurance—insurance against loss due to liability; covers both damages and expenses connected with alleged or actual liability.

Liability insurance, bodily injury—insurance against loss due to claims for damages because of bodily injury (including death) to persons not employees.

Liability insurance, property damage—insurance against loss due to claims for damages because of injury to others' property.

Loss Conversion Factor (L.C.F.)—a percentage added to incurred losses to cover general claim investigation and adjustment expenses.

Paid loss—amount of money actually paid out by insurance carrier to date—does not include Allocated Loss expense.

Pedestrian—one who walks, stands, runs, walks with a bicycle, or crosses a roadway on rollerskates, a skateboard, a toy vehicle, or in a wheelchair.

Probable maximum loss—PML—the worst loss to be expected under "average" conditions assuming that most if not all control mechanisms and procedures operate effectively.

Loss experience—dollar amounts of loss incurred during policy period.

Loss ratio—the percentage of losses to premiums. The proportion which losses incurred bear to the earned premiums; visually expressed as a percentage.

Loss reserve—that portion of the assets of an insurance company kept in a readily available form to meet probable claims provided for the payment of losses which have been incurred but not yet due.

Losses paid—the amount of loss for which money has been disbursed by the insurer.

Losses incurred—total losses, whether paid or unpaid, sustained by an insurance company under a policy or policies.

Reserve—funds of an insurance company or self insurance for the purpose of meeting obligations as they fall due. A liability set up by an insurer for a particular purpose.

Subrogation—the right of an insurance company to recover from a third party the amount paid under the policy.

Example: Builder A is constructing a portion of subway. His insurance includes coverage for Builder's Risk. A high-rise apartment building is being constructed adjacent to the subway site. Builder B on the apartment project drives a piling through the subway tunnel wall. Builder A's insurer covers A's damages. In turn, through the subrogation process, Builder A's insurer may institute action against Builder B to recover damages to Builder A.

Third party—a person other than the principals (in this case first and second parties are the insurer and the insured).

Third party insurance—protection for the insured against liability arising out of bodily injury to others or damage to their property.

Third-party action—an action brought by a defendant in one action against another party, e.g., an injured workman, a sub-contractor. The sub-contractor may institute "third party proceedings" against the principal contractor if he feels such a principal contractor is basically liable for the loss.

Yaw Marks—the mark left on the pavement as a result of the lateral movement of a tire.

APPENDIX 3
RISK DISCOVERY CHECKLIST

	Damage to or Destruction of Property	Loss of Possession of Property	Loss of Income or Additional Expense	Liability to Others
Acreage; Vacant land, Parking lots, Training areas, Long Term Storage Areas	Nil	Nil	Nil	Definite
Accounts and Records (i.e. receivables, library records, utility billings, governmental charter, administrative minutes, statutes, historical documents)	Definite	Definite	Definite	Definite
Athletic Activities; Sponsored Employee Teams, Sponsored Organized Community Athletics, Promotional Contests	Moderate	Slight	Moderate	Definite
Boilers and Other Pressure Vessels	Definite	Nil	Definite	Definite
Bridges; on terminal Property or constructed for Authority's use at pick-up points or Turn-arounds	Definite	Nil	Moderate	Definite
Buildings (Owned or leased)	Definite	Slight	Moderate	Definite
Computers	Definite	Moderate	Moderate	Moderate
Concessions	Moderate	Slight	Moderate	Definite
Completed Operations	Nil	Nil	Moderate	Definite
Construction Operations Buildings	Definite	Moderate	Moderate	Definite
Construction Contracts	Moderate	Moderate	Moderate	Definite
Contractual Agreements (Purchase of Service Agreement)	Slight	Slight	Moderate	Definite
Electric Systems	Definite	Definite	Definite	Definite
Elevators, Garage Lifts	Moderate	Slight	Moderate	Definite
Employer's Liability to Employees (Workers' Compensation)	Nil	Nil	Slight	Definite
Employee Dishonesty	Slight	Definite	Moderate	Slight
Employee Forgery	Slight	Definite	Moderate	Slight
*Environmental Impairment	Definite	Definite	Definite	Definite
Equipment (i.e. office, data processing, construction, maintenance) owned, leased	Definite	Definite	Moderate	Definite
Fire Legal Liability	Nil	Nil	Moderate	Definite
First Aid Stations	Moderate	Moderate	Slight	Definite
Fuel Storage and Distribution	Definite	Definite	Definite	Definite
Gas Distribution/Storage Systems (Freon etc.)	Definite	Definite	Definite	Definite
Highways, Roads, Streets, Sidewalks	Slight	Slight	Slight	Definite
Incinerators	Definite	Slight	Moderate	Definite
Mobile Equipment; Tools, Testers	Definite	Definite	Moderate	Definite
Money and Securities	Definite	Definite	Moderate	Slight
Personal Property (i.e. all property owned, leased, or in your care, custody or control	Definite	Definite	Definite	Definite
Physicians (employed)	Nil	Slight	Slight	Definite
Radio Broadcasting Equipment; mobile and base equipment; towers and repentors.	Definite	Definite	Moderate	Definite
Real Estate (i.e. owned, leased, or occupied structures) office, garages, bus shelters	Definite	Slight	Definite	Definite
Refreshment Stands, Employee Vending areas, Lunchroom, Driver's areas.	Definite	Slight	Definite	Definite
Route Markers	Definite	Slight	Slight	Slight
Signs	Moderate	Moderate	Slight	Definite
Traffic Signals	Definite	Moderate	Moderate	Definite
Tunnels	Definite	Slight	Definite	Definite
Vacant Buildings	Definite	Moderate	Slight	Definite
**Vehicles (Owned)	Definite	Moderate	Slight	Definite
**Vehicles (Leased)	Definite	Moderate	Slight	Definite
**Vehicles (Hired)	Definite	Moderate	Slight	Definite
**Vehicles (Employee owned and operated)	Slight	Slight	Slight	Definite
**Vehicles (Rented to others)	Definite	Moderate	Slight	Definite
**Vehicle Parking Areas	Slight	Slight	Slight	Definite
**Vehicle Parking Garages	Definite	Slight	Definite	Definite
**Vehicle Storage Garage	Definite	Slight	Definite	Definite
**Vehicle Repair Shops	Definite	Slight	Definite	Definite
**Vehicle Service Stations	Definite	Slight	Definite	Definite

*Permanent damage to environment resulting from improper disposal of distillates, oils, thinners, paints, residues, particularly body shop materials, etc.

**Vehicle including: Buses, Vans, Service Vehicles, Private Passenger Vehicles

EXAMPLE 1

APPENDIX 4
SAMPLE EMPLOYMENT APPLICATION

No. _____

(To be filled out in ink by applicant in his own handwriting)
(An applicant under 21 years of age must file Minor's Certificate of Age)

"An Equal Opportunity Employer M/F"

Company _____ Date _____

I hereby make application for position as _____
clearly specify

Name in Full _____ Soc. Sec. No. _____

Address _____ Telephone _____
street town state

Date of Birth* _____

Are you a Citizen of the U.S.A. or Registered Alien? _____

_____

Have you ever been convicted of a serious crime? Explain: _____

_____

EDUCATION

NAME OF SCHOOL OR COLLEGE	DATE ATTENDED FROM	TO	GRADUATED	COURSE TAKEN
Grammar School				
High School				
College				
Other Schools				
Other Courses				

Have you a trade or profession _____ If so, what _____

Have you ever been employed by this Co. _____ When _____ Where _____

Have you ever been employed by any other public utility _____ Position held _____

Name of Company _____ Address _____

_____

SUBJECTS OF SPECIAL STUDY OR RESEARCH WORK _____

Questions only for applicants for office employment:

What type of business machines can you operate? _____

Have you done office work? Yes ☐ No ☐ Specify Type (Typing, filing, steno, bookkeeping, etc.)

Approximate shorthand speed _____ Approximate typing speed _____

What foreign languages do you speak fluently? _____ Read _____ Write _____

*Bus Driver Position Only

FORMER EMPLOYERS (List below last four employers, starting with last one first.)

DATE MONTH AND YEAR	NAME AND ADDRESS OF EMPLOYER	POSITION	SALARY	REASON FOR LEAVING

REFERENCES: Give below the names of five persons not related to you whom you have known at least one year

NAME	ADDRESS	BUSINESS	YEARS ACQUAINTED

PRESENT MEMBERSHIP IN
NATIONAL GUARD OR RESERVES _____

PHYSICAL RECORD: _____

WERE YOU EVER INJURED? _____ GIVE DETAILS _____

HAVE YOU ANY DEFECTS IN HEARING? _____ IN VISION? _____ IN SPEECH? _____

LIST ANY OTHER PHYSICAL INFIRMITIES OR DEFECTS _____

IN CASE OF
EMERGENCY NOTIFY NAME _____ ADDRESS _____ PHONE NO. _____

Do you pledge yourself if employed, and during your employment to comply with the company's rules and regulations now in existence, or which may hereafter be established? _____

Do you agree that if you are employed by the company, the company shall thereafter at anytime and from time to time have the right to require a medical examination by a company physician of your physical and mental condition, to include (but not be limited to) X-ray examination and laboratory tests, and that it shall further be a condition of your employment that you be mentally and physically qualified (as determined by medical examination) to perform the assigned duties of your position. _____

In part consideration for my employment, I agree to return upon demand, or on demand, or on severing my connection with this company, all company property then in my possession, and whenever requested, to make and verify an affidavit containing a full and truthful statement of any and all accidents, ejections, assaults, etc., of which I may have knowledge.

I agree to at once provide myself with a standard uniform in accordance with the rules and regulations of the company.*
Operator must provide himself with a standard watch before entering upon employment with the company.*

I hereby warrant that the foregoing answers are true in every particular, and I further agree to resign immediately from the employ of this company should any one of my statements or answers on this application blank be found untrue, or should my past record, upon examination by the company, prove unsatisfactory.

*Bus Driver Position Only

Signed _____

(Applicant will not write below this line.)

I have personally questioned the above applicant and believe him mentally and physically fitted for the position herein applied for.

Date _____ _____

Referred to Dr. _____ at _____
Department Head

for examination _____

Remarks for company use only:

EXAMPLE 2

NO. _____ A10

Madison Metro

APPLICATION FOR EMPLOYMENT

(To be filled out in ink by applicant in his or her own handwriting)
"An Equal Opportunity Employer M/F/H"

Date _____
(Application will be kept on file for one year from above date)

I hereby make application for position as _____
Clearly Specify

Name in Full _____ Soc. Sec. No. _____

Address _____ Telephone _____
Street Town State (Where you can be reached)

Have you ever been **convicted** of any violations of law other than minor traffic violations? (In accordance with State law or City Ordinances, pending charges or convictions will not be used or considered unless they are substantially related to circumstances of the particular job). _____Yes _____No

If yes, how many times have you been convicted of such violations?_____

Please specify:

1. Violation(s) you have been convicted of: _____
2. Year of conviction: _____
3. State and county in which you were convicted of each: _____

(Please note – this information will be verified.)

If there were extenuating circumstances, of which we should be aware, please state on the back of this application or on an attached sheet.

Circle last year of school completed: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Additional Education: _____

Have you a trade or profession? _____ If so, what _____

Have you ever been employed by this Company? _____ When _____ Position Held _____

_____

SUBJECTS OF SPECIAL STUDY OR RESEARCH WORK _____

Questions only for applicants for office employment

What type of business machines can you operate? _____

Have you done office work? Yes _____ No _____ Specify Type (Typing, filing, steno, bookkeeping, etc.)

_____

_____

DRIVING RECORD

1. Do you qualify for or hold a valid motor vehicle operator's or chauffeur's license in this state? _____

NUMBER: _____ VALID UNTIL: _____

2. Have you held a license in any other state in the past three years? _____

Explain _____

3. What type(s) of motor vehicles can you operate? _____

4. How many traffic tickets (not parking tickets) have you received in the past three years?

_____ Explain _____

5. How many traffic accidents have you had in the past three years?

_____ Explain _____

6. Has your license to operate a motor vehicle ever been revoked or suspended?

_____ Explain _____

FORMER EMPLOYERS (List below last four employers, starting with last one first)

DATE MONTH AND YEAR	NAME AND ADDRESS OF EMPLOYER	SALARY	POSITION	REASON FOR LEAVING
FROM				
TO				
FROM				
TO				
FROM				
TO				
FROM				
TO				

REFERENCES: Give below the names of four persons not related to you whom you have known at least one year.

NAME	ADDRESS	BUSINESS	YEARS ACQUAINTED
1			
2			
3			
4			

The Madison Metro has adopted an Affirmative Action Ordinance in compliance with Federal law. In an attempt to judge the effectiveness of our recruitment efforts, we request that you provide the following information. This information will, in no way, be used in the decision to hire or promote.

SEX: ☐ MALE
☐ FEMALE

DATE OF BIRTH:

_____

RACE: (Indicate):
☐ White
☐ Black
☐ Oriental
☐ Spanish-American
☐ Native American

VETERAN STATUS:
☐ Non-Veteran
☐ Viet Nam Era Veteran (8/64-1/73)
☐ Other Veteran
☐ Disabled

How did you learn of this vacancy?

NONDISCRIMINATION ON THE BASIS OF HANDICAP

"No otherwise qualified handicapped individual . . . shall, solely by reason of handicap, be excluded from or participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. 706. We are taking Affirmative Action pursuant to Section 503 of the Act and invite applicants for employment to indicate whether, and to what extent, they are handicapped. The information requested is intended for use solely in connection with our Affirmative Action efforts, the information is being requested on a voluntary basis, it will be kept confidential and it will be used only in accordance with the law. Refusal to provide it will NOT subject you to any adverse treatment.

In accordance with Section 504 of the Rehabilitation Act of 1973, a "Handicapped Person" means any person who:

1. Has a physical or mental impairment which substantially limits one or more major life activities;
2. Has a record of such an impairment; or
3. Is regarded as having such an impairment.

Please check below if you feel you qualify for designation under this section of the Act:

☐ I feel I do qualify ☐ I do not qualify

If you feel you will need any special accommodations for testing please advise the Personnel Division.

Please indicate nature of handicap/disability:

_____

_____

CERTIFICATION STATEMENT: (Please sign and date the following statement):

I certify that all answers to questions in the application are true, and I agree that my misstatements or omission of material fact will cause forfeiture on my part of all rights to any employment with Madison Metro.

_____	_____	_____
WITNESS TO SIGNATURE	DATE	APPLICANT'S SIGNATURE

Are you a U.S. Citizen, or do you have an entry permit which allows you to work?_____

IN CASE OF EMERGENCY NOTIFY _____

NAME ADDRESS PHONE NO

Do you agree that if you are employed by the company, the company shall thereafter at anytime and from time to time have the right to require a medical examination by company physicians of your physical and mental condition, to include (but not be limited to) X-ray examination and laboratory tests, and that it shall further be a condition of your employment that you be mentally and physically qualified (as determined by medical examination) to perform the assigned duties of your position?

In part consideration for my employment, I agree to return upon demand, or on demand, or on severing my connection with this company, all company property then in my possession, and whenever requested, to make and verify an affidavit containing a full and truthful statement of any and all accidents, ejections, assaults, etc., of which I may have knowledge.

I agree to at once provide myself with a standard uniform in accordance with the rules and regulations of the company.*

If given an opportunity, I agree to work on a trial basis for the probationary period designated by the company and, if retained at the end thereof, to work faithfully thereafter and give my best efforts in the interest of the company. I agree to operate any type of coach which the company may request me to operate.

Operators must provide themselves with a standard watch before entering upon employment with the company.*

I hereby warrant that the foregoing answers are true in every particular, and I further agree to resign immediately from the employ of this company should any one of my statements or answers on this application blank be found untrue, or should my past record, upon examination by the company, prove unsatisfactory.

Signed _____

*Bus Driver Position Only

Remarks for applicant's use only:

Remarks for company use only:

APPENDIX 5
SAMPLE PHYSICAL EXAMINATION RECORD

Name _____

Organization _____

Badge or
Payroll No. _____

Occupation _____

Date of
Birth _____

Date
Employed _____

PLEASE ANSWER ALL QUESTIONS HONESTLY, COMPLETELY AND TO THE BEST OF YOUR KNOWLEDGE AND RECOLLECTION

	YES	NO
1. Did you have any illness, injury or operation since your last annual examination?	☐	☐
If yes, explain _____		
_____		
_____		
_____		
_____		
2. Have you had any medical problems during the past year?	☐	☐
3. Do you now have any symptoms or complaints?	☐	☐
4. Do you now use or have you used alcohol excessively since your last company physical examination?	☐	☐
5. Have you taken any drinks containing tonic water or quinine water in the past 72 hours?	☐	☐
6. Are you taking any drug or medication prescribed by a doctor?	☐	☐
7. Have you taken any medications or drugs within the last 48 hours including over-the-counter preparations such as cold tablets?	☐	☐
8. Do you use marijuana?	☐	☐

Explain "yes" answers by number _____

_____

_____

_____

_____

_____

_____

I have carefully read all of the above questions and have answered them truthfully to the best of my knowledge. I understand falsification of answers could result in disciplinary action.

Date _____ Employee's Signature _____

DATE: ______________________________

Name ______________________________ Badge or Payroll No. ______________________________

ANNUAL PHYSICAL EXAMINATION RECORD

DATE:					
		EXAM.	EXAM.	EXAM.	EXAM.
HEIGHT					
WEIGHT					
PULSE TEMPERATURE					
BLOOD PRESSURE					
DISTANT VISION WITHOUT GLASSES	R				
	L				
DISTANT VISION WITH GLASSES	R				
	L				
NEAR VISION BINOCULAR					
COLOR PERCEPTION					
HEARING	R				
	L				
TEETH					
HEAD					
NECK					
CHEST					
HEART					
LUNGS					
ABDOMEN					
SPINE					
EXTREMITIES					
SKIN					
GENITALIA					
REFLEXES					
URINE					

REMARKS

DATE	SPECIAL FINDINGS, TESTS AND RECOMMENDATIONS

INFORMATION SHARING

The transit system should share information with local law enforcement and emergency service personel to enhance their familiarity with your vehicles. Included should be the location of emergency areas and degree, location of emergency equipment and special safety features of your equipment. Madison Metro has conducted such familiarity efforts. Familiarity with transit equipment will aid emergency personel in efficient and safe evacuation of passengers and the preservation of your equipment.

Specific items which should be addressed include:

- **Fuel tanks/Fuel lines**
- **Battery location/electrical cut-off**
- **Emergency Door latches/releases**
- **Location of emergency window exits**
- **Locations of fire suppression devices**
- **Location of first aid kit**

SKIDDING

SKIDDING is perhaps the most often encountered condition. Quite simply, skidding means LOSS OF TIRE TRACTION on a road surface. It can be caused by a number of reasons, all of which may affect the steering, braking or accelerating control of the bus. It can result from tire failure due to improper inflation or to sudden deflation of a tire or tires.

Front Wheel Skids may be caused by faulty brakes.

Rear Wheel Skids may be caused by faulty brakes, excessive acceleration or speed on curves, and by rough or slippery road surfaces.

Four-Wheel Locked-Brake Skids can be caused by inappropriate application of brake pressure. Brakes should always be applied slowly and cautiously.

Hydroplaning Skids are caused by traveling too fast on a water-covered roadway. For any of several reasons, worn treads or improper pressure, the water cannot be squeezed out from under the tires. As a result the tires ride up on top of the water and lose all contact with the road surface.

CONTROLLED STEERING

Once traction is lost and the bus goes into a skid, the driver needs to regain DIRECTIONAL CONTROL by knowing how to steer, how to apply the brakes, and how to accelerate, in order to get out of the skid.

When steering to correct a skid, use a method called CONTROLLED STEERING. This means that the wheels are turned in the direction of the skid—

Be careful to watch for over correction which would cause the back end of your vehicle to fishtail in the opposite direction, so in order to control this, you'd countersteer to help get back on course. Each steering correction should be softer until control is re-established.

BRAKING

In order to regain directional control, we also have to consider BRAKING. The main thing is, DON'T PANIC AND JAM ON THE BRAKES WHEN YOU START TO SKID. That only compounds the difficulty. In fact, don't apply any presure—or at least only modulated—until control is re-established. With HYDRAULIC BRAKES, pump softly. With AIR BRAKES, don't brake at all, unless absolutely necessary.

Another thing to remember in regaining directional control is to remove pressure from the ACCELERATOR smoothly and slowly. Don't accelerate again until steering control is completely re-established.

TIRE BLOWOUT

The second most common emergency driving condition is TIRE BLOWOUT. Apply the brakes slowly. Grip the steering wheel firmly and steer straight in the center of the lane. Move slowly to the right, out of traffic---first activating the right turn signal---and stop. When stopped, activate the four-way hazard lamps

BRAKE LOSS

The third most common emergency driving condition is LOSS OF BRAKES. In the case of a bus with AIR BRAKES, a warning buzzer will alert the driver to loss of air pressure and to the possibility of the brakes locking. If locking occurs and the bus goes into a skid, follow the skid control procedure.

If the bus has HYDRAULIC BRAKES and partial or total loss occurs, pump the brake pedal and sound the horn. Alternately apply and release the hand-brake, and downshift to the lowest gear possible.

If there is a clear upgrade ahead, STAY ON THE ROAD AND ALLOW THE UPGRADE TO SLOW THE BUS. Then select a path for the bus to leave the highway.

Always try to maneuver the bus out of traffic before it comes to a halt.

If the bus stops on a roadway:

- **Activate the four-way hazard lamps**
- **Place warning markers on the roadway**
- **Evacuate the bus, if passengers can wait in a safe location, otherwise detain passengers on the bus.**

If there is no upgrade available, your alterantives would depend entirely on the specific situation that you are in. In general select a path for leaving the roadway that will MINIMIZE INJURIES AND PROPERTY DAMAGE.

SUDDEN LOSS OF VISIBILITY

The fourth most common emergency driving condition is SUDDEN LOSS OF VISIBILITY.

There are several conditions which can cause such a loss. To control the bus until normal visibility is regained, you will have to use CLUES OTHER THAN THE USUAL VISUAL ONES.

If the headlights fail. You should instantly activate the four-way hazard lamps. Use the light along the way to keep sight of the road, and then pull off, brake slowly, and stop.

If a large amount of water is splashed on the windshield. Apply the brakes cautiously, look out the side windows, and turn on the wipers.

If a patch of thick fog is encountered. Activate low beams and four-way flashers, and slow down using the center or edge lines as guides. If the fog is severe, pull off and park as far from the road surface as possible. It is especially important to watch for other vehicles that may have slowed abruptly or stopped on or near the road.

If windshield wipers fail during rain/sleet/snow. Look out the windows to keep sight of the road. Apply brakes; activate the turn signal and four-way hazard lamps; pull off the road as far as possible, and stop.

The thing we have to remember here is that EVASIVE ACTION must be taken to avoid hitting ANY KIND OF OBSTRUCTION.

One can be evasive in many ways, of course, but evasive action, in terms of driving, is the exercise of fundamental driving maneuvers under conditons of stress, limited time, space, and distance.

EVASIVE ACTION

A driver will be more likely to avoid hitting any obstruction if the unusual is ALWAYS ANTICIPATED and if effective evasive action is mentally practiced OVER, AND OVER, AND OVER AGAIN UNTIL IT BECOMES COMPLETELY AUTOMATIC. Evasive action requires special braking and steering techniques.

Braking to a stop will depend upon:

- **How fast the bus is traveling**
- **How far away the object is**
- **How good the tires are**
- **Whether the road is wet or dry.**

Guard against slamming on the brakes! If the driver decides NOT TO COME TO A FULL STOP, the brakes must be applied slowly and cautiously to avoid locking the wheels and causing a loss of steering control.

Steering, The driver must INSTANTLY choose between stopping or selecting an alternative "escape route" which is free from other, more hazardous obstacles.

Because of its SIZE AND WEIGHT the bus CANNOT SWERVE SHARPLY to avoid an object or leave the pavement without the danger of overturning.

Therefore the driver must:

- **Quickly recognize the best "escape route"**
- **Steer firmly and as gradually as possible**
- **Avoid steering left into the opposing land of traffic if possible**
- **If you do have brakes, remember to use them in a modulated fashion—pump them.**

COLLISION

WHERE COLLISION IS ABSOLUTELY UNAVOIDABLE, try to reduce speed as much as possible and, above everything else, AVOID A HEAD-ON OR BROADSIDE COLLISION, thus reducing the force of the impact.

If a collision occurs:

- **Set the parking brake**
- **Turn off the ignition switch**
- **Turn around, face your passengers, reassure them and set an example by remaining calm.**
- **Be alert to situations which may result in the possibility of FIRE.**
  - **—ruptured fuel tank or lines**
  - **—electrical fires**
  - **—look for smoke**
  - **—check for hot tires**

- **Check for injury to passengers**
- **Keep all passengers on the bus unless potentially dangerous conditions warrant their removal**
- **Protect the scene by placing warning devices around the bus.**
  Each bus should be equipped with three reflectors. In the event of an accident or breakdown, the first one is placed on the ROADWAY side of the bus, a safe distance from the bus and from oncoming traffic. The second one is placed approximately 40 PACES (100 FEET) TO THE REAR of the bus. This distance should be greater if the bus is on a hill or curve, but shouldn't exceed 300 feet. The third reflector is placed 40 PACES IN FRONT OF THE BUS, increasing the distance if conditions warrant.
- **Follow procedures outlined in the "Accident Reporting Packet". (Appendix 11)**

DISABLED PASSENGER ASSISTANCE

Emergency Ramps

In the event of lift breakdowns, stranded wheelchair passengers should be deboarded by means of a wooden emergency ramp. Ramps will not be used to board lift passengers; these passengers must wait until the breakdown has been corrected or until the next designated accessible service is available.

General Emergency Procedures

In the event an accessible coach is involved in an accident and there is no imminent danger resulting, do not remove wheelchair passenger. If the wheelchair passenger is injured, wait for emergency medical personnel to treat and remove the individual.

Extreme Emergency/Wheelchair Evacuation

The operator should remove the wheelchair passenger from a coach, only if it is more dangerous to leave the passenger on the coach. Examples of such situations are where the coach is in imminent danger of:

- **Fire;**
- **Explosion;**
- **traffic hazard; or**
- **physical peril (i.e., coach perched on a cliff).**

In these situations, the operator should unload the wheelchair passenger using the following methods (listed in order of preference).

- **—Use the lift as per regular instructions. If not at a curb or in a curb lane, the operator should have another person stand on the right side of the coach to halt any traffic which may attempt to pass on that side of the coach. Accompany the wheelchair passenger to a secure location.**
- **—Use the Emergency Ramp as per regular instructions. The ramp should be considered only when time is available for its delivery and use.**
- **—Lift the wheelchair passenger while still in the chair, with the help of others and carry off the bus through the front door. Use the back door if the front is inaccessible. Always carry the wheelchair off backwards.**
- **—Lift the passenger (without the chair) with the help of others and carry off the bus through the front door. Use the back door if the front is inaccessible.**
- **—Lift the impaired passenger, with the help of others, and evacuate through one of the emergency windows.**

In the event an operator is alone and unable to enlist the help of others, evacuation of a wheelchair passenger is best accomplished by:

—checking with the passenger for the best way to carry him/her and proceeding accordingly; or
—If the passenger is unconscious, the best carry method is to drape the passenger's arms over the operator's shoulders and, with the passenger facing the operator's back carry him/her to safety.

Emergency Evacuation Summation

—Use lift.
—Use emergency ramp.
—Lift wheelchair through doors.
—Lift passenger through doors.
—Lift passenger through window.
—Carry passenger off on back, (when operator alone and no help available).

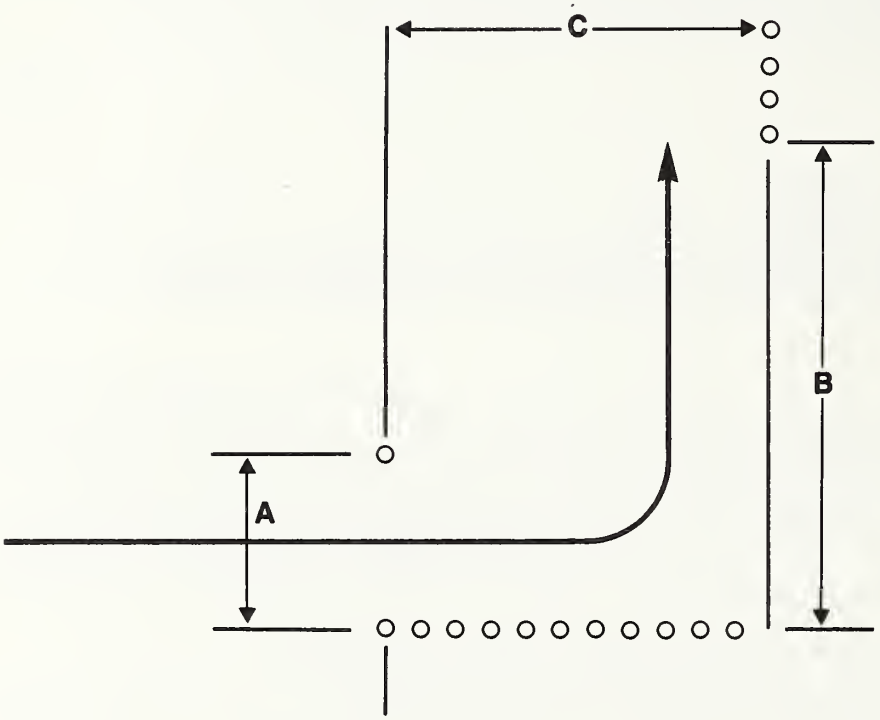
WEATHER EMERGENCIES

Other than its characteristically cold and snowy winters, Wisconsin is fortunate to stay relatively free of severe and damaging weather incidents. Tips on winter driving appear elsewhere in Appendix 10.

Occassionaly during the summer months, however, tornadoes touch down within the State. Although the chances of one of these causing any harm to you are slim, there are a few tips you should know should you encounter one while operating a bus;

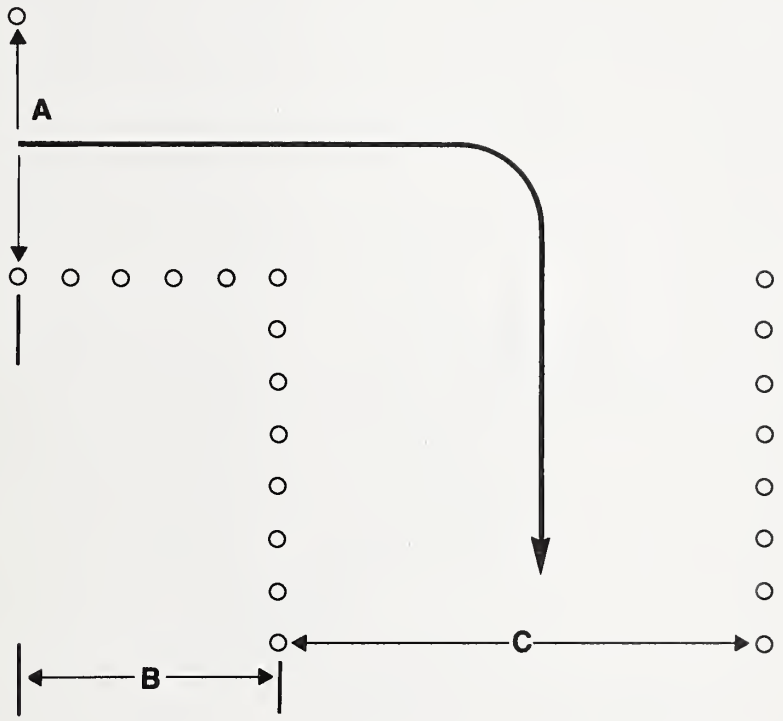
—First, park the bus (away from any buildings or trees, if possible
—Radio your location and the nature of the problem, if possible
—Evacuate the vehicle
—Instruct all passengers to find the most open, lowest spot available as far away from buildings and trees as you can.
—Instruct all passengers to lie face down on the ground until the tornado passes.

LEFT TURN



40′ x 102″ BUS	35′ x 96″ BUS	30′ x 96″ BUS
A = 10′-6″	A = 10′	A = 10′
B = 23′	B = 20′-3″	B = 10′
C = 37′	C = 32′-6″	C = 17′ 6″

RIGHT TURN



40′ BUS	35′ BUS	30′ BUS
A = 11′-6″	A = 10′-6″	A = 10′-9″
B = 20′	B = 17′-6″	B = 15′
C = 34′	C = 29′-9″	C = 25′-6″

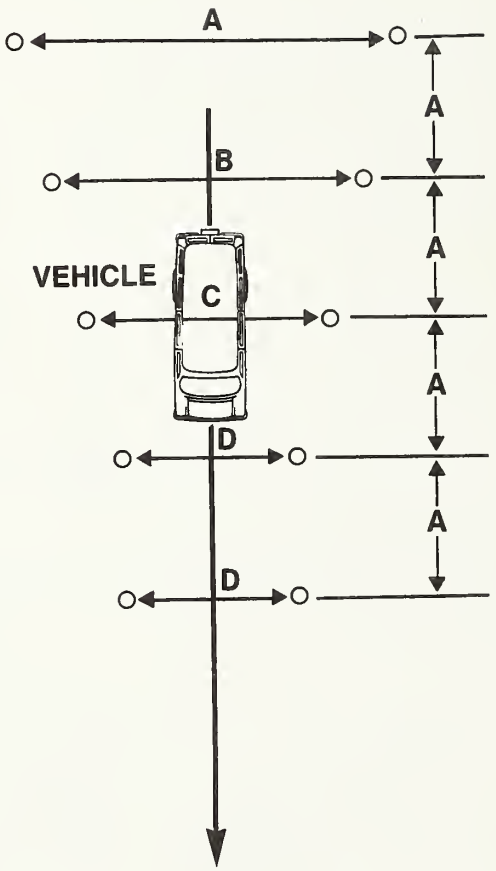
DIMINISHING CLEARANCE

40′ x 102″ BUS

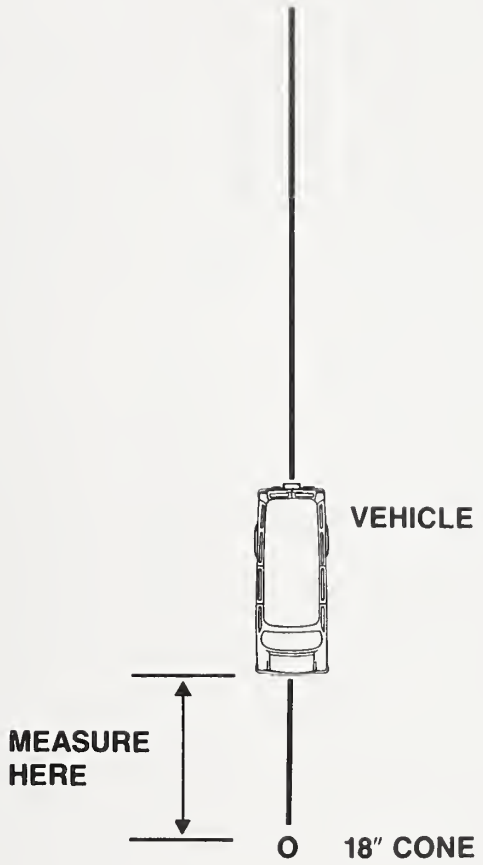
A = 10′
B = 9′8″
C = 9′4″
D = 9′0″

30′ x 96″ BUS
35′ x 96″ BUS

A = 9′6″
B = 9′2″
C = 8′10″
D = 8′6″

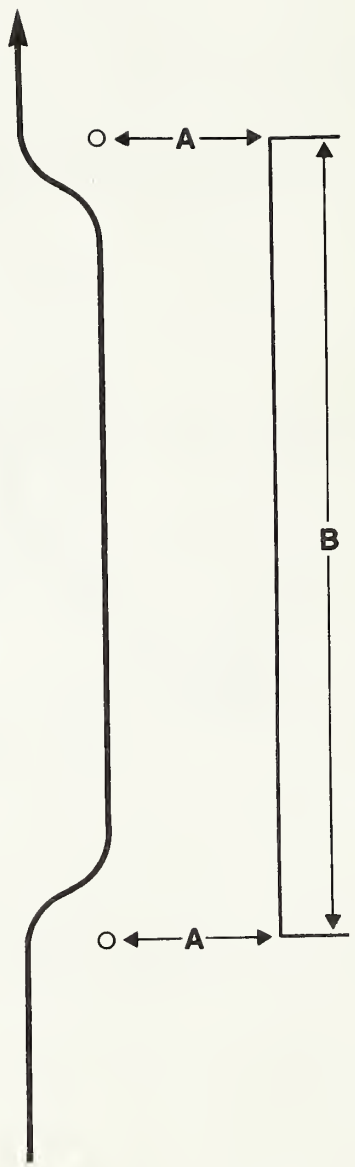


JUDGEMENT STOP



PASSENGER STOP

A = 6′
B = 2 BUS LENGTHS



APPENDIX 8
RIDE CHECK FORM

SUPERVISOR: _____
DRIVER: _____
BUS # _____
ROUTES: _____

E EXCELLENT
G GOOD
P POOR
F FAILURE TO COMPLY
O OTHER

1. Passing and Being Passed
   - A. Clearance ..... ___
   - B. Illegal Maneuver ..... ___
   - C. Cooperation w/Passer ..... ___
2. Smoothness of Operation
3. Right and Left Turns
   - A. Swings Too Wide ..... ___
   - B. Cuts Too Short ..... ___
   - C. Starts Wrong Lane ..... ___
   - D. Ends Wrong Lane ..... ___
4. Signaling—Proper Use of Signals
   - A. Signal Knowledge ..... ___
   - B. On Starting From Curb ..... ___
   - C. On Turns ..... ___
   - D. On Lane Change ..... ___
5. Speed Control
   - A. Over Speed Limit ..... ___
   - B. Too Fast For Safety ..... ___
   - C. On Turns ..... ___
   - D. On Approaching Corners ..... ___
   - E. Following Distance ..... ___
6. Use of Brakes
   - A. Smoothness in Applying ..... ___
   - B. On Turns ..... ___
   - C. Reactions to Hazards ..... ___
7. Caution
   - A. Intersection Approach ..... ___
   - B. In Changing Lanes ..... ___
   - C. In Passing/Being Passed ..... ___
8. Stop Sign/Traffic Signal
   - A. Obedience to Signal/Sign ..... ___
   - B. Position After Stopping ..... ___
   - C. Fails to Make Full Stop ..... ___
   - D. Starts Before Signal Changes ..... ___
9. Lane Use
   - A. Choice of Proper Lane ..... ___
   - B. Position in Lane ..... ___
   - C. Unnecessary Changing ..... ___
10. Loading/Unloading
    - A. Approach to Stop ..... ___
    - B. Smoothness of Stop ..... ___
    - C. Door Use ..... ___
    - D. Position After Stop ..... ___
    - E. Use of Mirrors ..... ___
11. R. R. Crossings
    - A. Stopping Distance from Tracks ..... ___
    - B. Looking and Listening ..... ___
    - C. Opening of Door ..... ___
    - D. Crossing Tracks (waiting for traffic to clear) ..... ___

Overall Ability to Use Courtesy on Road ..... ___
Courtesy to Passengers & Public ..... ___
Use of Seat Belt ..... ___
Use of Signal Lamps Only When Required ..... ___
Defensive Driving and Good Driving Habits ..... ___
Driver Attitude Toward His Job and Responsibility ..... ___
Route Knowledge and Comprehension ..... ___
Personal Appearance ..... ___
Remarks ..... ___

COMMENTS:

APPENDIX 9
PRE-TRIP/POST TRIP INSPECTION CHECKLIST

For Office Use Only:

____ Road Call
____ In Service
____ Out of Service

Check for Proper Condition and Operation. Mechanic Comment

_____ Turn Signals/4-Way Flasher
_____ Headlights (Hi/Low)
_____ Marker Lights
_____ Brake/Tail/Back-Up Lights
_____ Step Lights/Exit Light
_____ Interior Lights
_____ Destination Sign/Lights
_____ Horn
_____ Dash Gauges/Warning Lights/Switches
_____ Speedometer/Tachometer

_____ Transfer Cutter
_____ Farebox/Vault/Light
_____ Fire Extinguisher/First Aid Kit/A1E
_____ Doors
_____ Windows
_____ Steps/Aisle
_____ Seats/Crabralla
_____ Passenger Signal
_____ Mirrors
_____ Brakes (test before leaving yard)
_____ Heater/Defroster/Fans
_____ Air Conditioning
_____ Windshield Wipers/Washer
_____ Transmission/Drive Train
_____ Steering
_____ Service/Parking/Interlock-Brakes
_____ Tires/Wheels
_____ Suspension
_____ Engines Power/Leaks
_____ Body Damage
_____ Other (explain)

Bus # ____ Vault # ____ Mileage _____ Hrs. _____

Date _____ Drivers _____

_____

_____

_____

Snow and Ice—Are You Ready For Them?

We can't tell you when it'll snow . . . but we can tell you how to prepare for and cope with it. There are six primary hazards of winter operation that you must consider:

—Operator disposition
—Reduced visibility
—The effects of temperature
—Inadequate traction while starting
—Unexpected conditions
—Reduced ability to steer and stop

Operator Disposition

Bad weather shortens everyone's temper, so anticipate unpleasant reactions from other drivers, your passengers, and yourself. When traffic's heavy and the going is tough, stay calm. If you allow yourself to become rattled, you'll either take it out on your passengers or become careless and have an accident.

See and be Seen

Safe driving is mostly a matter of anticipation—seeing in time to take action to avoid danger. But winter works AGAINST good visibility. Road slush and grime, ice and snow, all make it harder to see so make sure your headlights are clean and wipers and defrosters are working.

Winter also adds the complication of early darkness. More people do more driving during the hours that visibility is reduced.

Help others see you and increase your own visibility by using your headlights (low beam) in daylight, snow storms and fog. Turn on your turn signals well in advance. Remember that snow and wet streets increase glare from the sun or headlights and can blind you momentarily. Reduced visibility also requires that you immediately adjust your speed.

The Effects of Temperature

Did you ever notice that a melting ice cube is far more slippery than a cube directly from the freezer? This fact pertains to your driving as well. Ice at 30 degrees, is twice as slippery as ice at 0 degrees. Critical speed (that speed at which you lose control of the vehicle) increases as the temperature increases until you hit 32 degrees.

Inadequate Traction When Starting

Inadequate traction means the inability to pull away from a stop, go up hills, or negotiate snow. All three situations can cause short tempers, accidents and traffic tie-ups. When starting up, depress the accelerator very slightly and evenly. If rear wheels begin the slightest spin or sideslip, release the pedal immediately. Depress the pedal again—gently—releasing immediately if wheels again spin or sideslip. Continue this way until your vehicle gets under way.

It is important to turn your wheels straight ahead to ease starting. If it is necessary to start with a cramped wheel, apply the power gently and swing the steering wheel back and forth about half a turn to iron out a path for the front wheels.

Every time you spin those wheels the snow gets smoother, and the heat generated by the spinning wheels melts the ice (remember the ice cubes?) and reduces traction drastically.

1. Street Conditions:

Don't get careless when the temperature suddenly goes above 32 degrees. While most of the road may be clear, ice lingers on bridges and overpasses where ground heat is insufficient to speed up melting. Areas shaded by buildings, trees, hills and underpasses are also danger spots.

Watch out at intersections, on curves, and on hills. The polishing action of wheels sliding to a stop, or spinning to get started on ice and snow, greatly increases the slipperiness of already hazardous road surfaces. Polishing lengthens braking distances and slows traffic.

Banked snow and ice can reduce passing clearance, so be prepared to pull over as far as possible, or stop completely, if necessary, to let oncoming vehicles pass.

2. Pedestrians and Passengers:

Pedestrians walking on slippery sidewalks and streets aren't looking out for you, so watch out for them. You must also exercise extra care in protecting your passengers.

A passenger waiting at a transit stop during a snow storm, or on a cold night with snow on the ground, is more anxious than usual to board your vehicle. This presents a potential hazard. In his haste to make sure you see him, he may slip and fall into your path, or in approaching the stop, you can lose control on the ice or snow and slide into him.

Keep bus steps clean. Make warning announcements to boarding and alighting passengers. Avoid any action to hurry passengers—such actions may cause them to slip and fall. If there are snow banks at bus stops, keep sufficient clearance from snow banks so that passengers can step into or from the street, not the snow banks. Don't pull out until the passengers are completely clear of your bus in snow and ice: it is very easy for them to slip and fall under your wheels.

You know the problems and hazards of your passengers under winter conditions. So, when you become a pedestrian yourself, make certain that you don't slip and fall. Wear non-slip shoes, boots or overshoes.

Reduced Ability to Steer and Stop

Many accidents resulting from slippery streets have occurred because operators waited too long to adjust their driving. The moment it begins to snow or rain, you must begin to drive as though the street already is treacherous. Accept the first few flakes of snow or drops of rain as your signal to exercise extreme caution. Here are some helpful hints:

—Wait for the vehicle ahead to move to a point 15 feet from you before starting up.

—When stopped beside parked vehicles, be extra careful when starting up to avoid sideslip—accelerate VERY SLOWLY.

—When starting out "get the feel" of the road by trying out your brakes lightly and at low speed . . . Then TRY YOUR BRAKES occasionally while driving slowly and away from traffic to find out if the road is slippery.

—Reduce speed so that you have better control of the vehicle. Skidding is usually a sign of operating too fast for conditions. Schedules are important, BUT SAFETY IS FIRST. Posted speed limits become meaningless in bad weather.

—Increase following distance to allow the additional distance that may be required for braking. The more slippery the street, the greater your following distance must be. START stopping sooner. Stopping may take 10 times the normal stopping distance.

—When turning, steer gently and more gradually; avoiding quick or abrupt movements. Always go slowly enough into turns that you can do this and have no need to act suddenly. No traction at the front wheels, combined with centrifical force, means a better chance of skidding.

—Steering is also extremely delicate on ice and snow. Forces that tend to throw your vehicle into a skid are introduced as you steer into a turn. Any attempt to make a sudden steering change is extremely hazardous.
—Watch for change in road surface—from dry to icy.
—increase clearance between bus or coach and parked cars and fixed objects to provide a safety factor in case sidesiipping occurs. However, do not allow so much clearance that another vehicle could get between you and the fixed object or parked vehicle.
—Further reduce speed BEFORE entering curves and downgrades.
—Anticipate stops and slow down gradually, especially approaching intersections.
—Poor traction makes stopping difficult and stretches stopping distances to 250 feet or more from just 20 m.p.h. That's almost 10 times the distance you need to stop on dry pavement.
—When approaching pedestrians, beware of slush and water or you may give someone an icy bath. Slow down—be considerate.
—Look far ahead. Appiy brakes with gentle taps on the pedal . . . once or twice a second. Tapping the brakes will slow your vehicle without breaking the traction between wheels and snow. Remember, it takes 200 ft. or more to stop at 20 m.p.h. on snow.
—When appiying brakes, begin much sooner than you would on a dry street. Depress the brake pedal lightly. If rear wheels begin the slightest slide or side-slip, release the pedal immediately to allow wheels to roll. Depress the pedal lightly again—releasing immediately if wheels again slide or sideslip. Repeat until wheels no longer slide or sideslip.
    —Take defensive action if you go into a skid.
    —Turn steering wheel in direction of skid.
    —Apply brakes lightly only after vehicle is straightened out.
    —A touch on the accelerator may help bring you out of the skid.
    —Be sure you cover your rearside also. This means watch out for vehicles coming from the rear who have not taken the proper cautions for the existing weather.

Anytime you are unable to move due to traffic or because you are stuck in snow:

—Turn off all lights, except marker lights and emergency flashers.
—Clear any external obstructions from the exhaust.
—For diesel engines engage fast idle; for gasoline engines run 15 minutes every hour.

Finally, don't forget the importance of using good sense off the job, and make safety a habit when operating your own automobile.

- Tire chains, snow tires with studs, snow tires or tires with good treads are a necessity for winter driving. Keep chains, if needed, a supply of sand, and a shovel readily available.
- Windshield wipers, defrosters, and heaters should work efficiently. Replace worn out wiper blades. Made sure your windshield and all windows are clear of snow and ice for good visibility. Always keep an ice scraper handy. Aeresol Ice melters can take a lot of the work out of windshield scraping in the most severe winter weather. Peep hole driving is an invitation to disaster.
- Batteries should be checked to make sure they are fully charged and should be replaced if in doubtful condition. Cold weather is hard on your battery, which should be in peak efficiency in winter.
- Gasoline tanks should be kept full in cold weather to prevent condensation buildup that causes freezing of the gas line. Also, if you run out of gas in a bad storm your own safety may be endangered.

- Clean your headlights and taillights. Visibility is reduced considerably with dirt and grime on lenses. Road spatter drops visibility way down too, so keep washer reservoir filled with an anti-freeze solution and use it as necessary. At night or anytime lights are in use, stop and clean head and taillights occasionally.
- Run your heater and defroster a few minutes before you start out. Otherwise, sudden fogging of the window glass could blind you and cause an accident.
- Autos should have their engines tuned up prior to the start of each winter season to be in the best operating condition during the period that is the hardest on gasoline engines.
- Jumper cables should be kept in car trunks during the winter to assist in getting you started if the cold weather gets to your battery.
- A towing cable would be nice to have handy in your trunk to assist in getting you going again should you get stuck and need assistance.

APPENDIX 11
SAMPLE ACCIDENT REPORTING PACKET

Every vehicle should have an "Operator's Accident Reporting Packet". The reporting packet serves as a guide to ensure collection of complete and accurate basic data which will later be transcribed to the much more detailed format.

Data gathered with the aid of the packet will include:

- **Police Department and Officer's badge number**
- **Hospital or medical personnel involved**
- **Owned/operated vehicle data**
- **Third party vehicle data**
- **Time, place**
- **Injured parties (Bodily Injury)**
- **Non vehicle property damage**
- **Witness information**
- **Accident description.**

The format suggested here is the system developed by INA Loss Control Services, Inc. a CIGNA company. The system includes specific instructions to the operator in the event of an accident. It is important to include specific instructions here to make sure that the vehicle operator performs all tasks in the correct order during a stressful situation.

Also included is a relatively easy to understand accident reporting format which the operator should complete immediately. This form will serve as a guideline for the more Comprehensive Accident report to be filed by a supervisor later.

Finally, the reporting packet should include Courtesy Cards for distribution to bus passengers and others who may have been witnesses to the accident. Often called "Courtesy Cards", these should be passed out immediately by the bus driver to record the names of those present in the event that their testimony of the occurence is needed.

As mentioned, every vehicle must at all times have an Accident Reporting Packet stored in a safe place. To ensure that a packet is accessible when needed, periodic inspections of each vehicle should include a check for a complete packet.

DRIVER'S ACCIDENT REPORTING PACKET

WHEN AN ACCIDENT HAPPENS, STOP:

1. Aid the injured.
2. If you have a two-way radio and it is functional call the dispatcher with your location, otherwise call the police and your dispatcher or manager, by phone.
3. Obtain name and address of investigating police officer and badge number.
4. Obtain facts about other vehicle(s).
5. Obtain facts about person(s).
6. Obtain facts about other property damaged.
7. Get witnesses. Pass out courtsey cards and collect upon completion.
8. Describe and diagram the accident.
9. If a serious accident, notify management of the seriousness and have them contact the nearest claims office or claims representative.
10. Do not discuss the accident except with the police, a representative from your claims agent, or your supervisor.
11. Do not make any statement concerning the assumption of liability. Give out only the information required by authorities. Do not sign any statement except for an authorized transit system representative.

APPENDIX 12
MATERIALS AND SUPPLIES SUGGESTED FOR ACCIDENT INVESTIGATION

Certain basic materials are needed for a thorough accident investigation. We recommend that a kit be maintained for use by the designated safety officer with the following contents.

—Valid Identification as Safety Officer of the transit system
—35mm Camera with color film and flash attachments
—Instant camera with film and flash attachments
—Two (2) 100′ Tape Measure
—One (1) 12′ Tape Measure
—Clipboard, tablet, pen, pencil, felt tip marker
—Foul weather gear, effective visability markings, safety vest
—Flashlight, batteries and spare batteries, glow stick.
—Extra accident information packets
—Road marking materials
  Railroad chalk
  Lumber crayon
  Spray paint
—Index cards
—Evidence containers
—Dictaphone and extra cassettes, spare battery
—Gloves
—Watch or stop watch to time traffic signals
—Fire extinguishier
—Sand
—Flare

APPENDIX 13
PHOTOGRAPHY TIPS

Photos, especially color photos, are an excellent way to record facts and preserve evidence for the future. They might also record things you overlooked at the accident scene.

Photos of the accident scene should be taken as soon as possible to 1) record the positions of the vehicles before they are moved; 2) record such things as broken glass, oil stains, and hubcaps and other vehicle parts before they are removed or obliterated; 3) record skid marks; and 4) show traffic control signs and devices, area speed limits and other warning signs.

Here are some suggestions for photographing the accident scene:

Take several photos of the accident scene: 1) in each direction away from the point of impact; 2) from each approach to the point of impact, showing the view each driver had of the key point of the accident, as well as road alignment; 3) a closeup of the scene, showing the point of impact, and 4) an overall view of the scene.

Take enough pictures of each vehicle to show the extent of the damage. Take additional shots to establish the angle of collision and the movement of each while in contact.

Photograph debris, skid marks, and any other physical evidence of vehicle movement both before and after impact.

Photograph any broken vehicle parts. Try to establish whether the accident casued the damage to those parts or if they were already damaged when the accident happened.

Take as many other photos as you need to preserve such data as road defects, obstructions, foliage that blocks the view, or any other physical conditions that may have been a factor in the accident.

Identify each photo by time and data taken, direction in which taken, and the point from which it was taken.

Measuring Devices:

Standard Steel Tape—Error rate in feet per 100 feet varies from −005 to + .010 feet with 5 pound pull to 15 pound pull respectively. It will easily kink or break if steped on, run over, or twisted. It may also conduct electricity. Always wipe clean after use in damp or dirty conditions. If it is not enameled, wipe with an oily rag.

Wire Fabric or Metallic Tape—Error rate in feet per 100 feet varies + .065 feet to + .165 feet with 5 pound pull to 15 pound pull respectively. It may twist if not pulled up tight. It should be wiped clean after use. Generally minimal conductor of electricity due to the type of fabric construction. It should be rewound after use by threading through two fingers to avoid and detect kinks.

Good Quality New Fabric Tape—Error rate in feet per 100 feet varies from −.23 feet to +.10 feet with 5 pound pull to 15 pound pull respectively. It may blow about if not held down or otherwise secured. Some stretch may occur. It should be wiped clean after use and threaded between two fingers while being rewound.

Cheap or Old Cloth Tape—Error rate in feet per 100 feet varies from −.31 feet to +.08 feet with 5 pound pull to 10 pound pull respectively. It should be kept taut when possible and some stretching may occur. It should be wiped clean after use and threaded between two fingers when being rewound.

Measuring Wheels—These are generally used to supplement a tape. They function best on hard, flat, smooth, and dry surfaces. They are not recommended for other surfaces, ditches, fields, etc. The two foot single wheel can vary in error rate per 100 feet from +1.3 feet at 3 feet per second on dry pavement to −4.5 feet at 3 feet per second on dry gravel. The one foot double wheel may vary from −0.1 foot to −ms4.4 under the same conditions.

Optical Range Finder—These commonly have an error rate of +5 feet per 100 feet.

Stepping Off or Pacing—This method may also vary in error rate from +5 feet per 100 feet.

Note: The stated error rates are not absolute and should not be used to adjust actual measurements taken.

COMMON MEASURING ERRORS

1. **Incorrectly adding measurements mentally.**
2. **Attempting to commmit measurements to memory.**
3. **Forgetting the number of tape lengths in long measurement.**
4. **Neglecting to reset measuring wheel before each measurement.**
5. **Not knowing or understanding where zero point begins on tape.**
6. **Reading wrong footmark.**
7. **Reading numbers upside down, i.e. a 9 for a 6.**
8. **Not writing numbers clearly.**
9. **Not listing to or from what point the measurements where made.**
10. **Not making enough measurements to accurately locate a spot.**
11. **Measuring from a point of impact when point of impact cannot be found later.**
12. **Measuring yaw marks as skid marks**
13. **Measuring skid marks that do not pertain to the accident being investigated.**
14. **Inaccurately measuring debris location, i.e. debris has been disturbed after the accident and before measurements were taken.**

APPENDIX 15
EVIDENCE AND CUSTODY OF EVIDENCE

Chain of Custody of Evidence:

1. Maintain it under your control—Sign for it. Document custody at all times.
2. In legal cases, get it into hands of your attorney. Do not distribute to other parties except through attorney.
3. Maintain condition of evidence—No Alterations. Maintain proper file with sufficient clearly identified pictures.
4. Use attorney as liason with outside parties.

Types of Evidence:

1. Transient—Marks, Debris, Fluids (Fluids show direction of travel and general area of impact). These are extremely transient and need to be documented as soon as possible either via sketch or preferably photographs.
2. Fixed Evidence—Damage to structures, vehicles.

Forms of Evidence:

1. Damage to vehicles, structures, or objects
2. Injuries to people—Try and document physical cause.
3. Debris—Document location before it is moved. Once disturbed, it is worthless.
4. Marks on the road:
   - Skids
   - Yaws
   - Gouges

APPENDIX 16
SAMPLE SKETCH PREPARATION

Name of Streets

Width of Streets
Direction of North (try to make N to top of sheet)

Reference Points Used For Measurements

Permanent—such as drains, man holes, large buildings, not: street or directional signs, trees or temporary objects.
No Vehicles.

Location Of Vehicles And Bodies

Location of Debris
Fluids
Skid Marks—from beginning to the tire which made them.
Gouges—from beginning to the tire which made them.
Use Separate 8½ x 11 sheet for sketch.
Write all measurements as follows:
60^{10} (sixty feet ten inches)
60^{0} (sixty feet)

Location of debris, fluids, skidmarks, gouges.
Location and direction of vehicle travel prior to and at impact.
Length, direction and relative position of skidmarks.
Distance from point of impact to final resting place of each vehicle.
Damage to involved vehicles resulting from impact.
Damage to signs, poles, buildings, etc.
Traffic control devices, view obstructions, embankments, roadway dividers, etc.
Width of roadway and traffic lanes. Direction of north.
General topography of land:
Grade—incline
Grade—speed control banks

Media Relations at the Scene.

1. **Be prepared.**
2. **Project a professional image.**
3. **Keep control of the situation.**
4. **Background is important (visual).**
5. **Don't be patronizing.**
6. **Stay away from hearsay.**
7. **Don't speculate.**
8. **Don't accept responsibility for the accident.**
9. **Explain "No Comment".**
10. **Don't go "Off the Record".**

1. Be Prepared.

A good motto for us as well as the Boy Scouts, if possible, have some brief information prepared before arriving at the scene.

2. Project a professional image.

Avoid chewing gum, smoking, drinking beverages, or playing with your glasses, etc. Avoid frivolous remarks.

3. Keep control of the situation.

Take charge immediately, control the questioning, and show no signs of frustration or fear.

4. Background is important (visual).

Avoid death and destruction scenes whenever possible. Wrecked vehicles can add unnecessary sensationalism to the story and affect claims.

5. Don't be patronizing.

Avoid using words that may offend the reporters like "Honey", "Darling", "Buddy", "Pal", etc. In these kinds of situations, familarity does breed contempt!

Remember, the press are professionals—they know what they are after.

6. Stay away from hearsay.

Hearsay or incomplete information can be incorrect or misconstrued. There is nothing wrong with saying "I don't know".

7. Don't speculate.

Do not allude to something that hasn't been proven. Stay away from issues concerning brakes, drinking, etc. Don't provide ammunition for creation of an issue that really isn't an issue.

8. Don't accept responsibility for the accident.

The investigator should not be led into accepting responsibility for any part of the accident. Such an admission can have a profound effect on claims or future litigation. An investigator cannot make a snap decision at the scene.

9. Explain "No Comment".

A good explanation for using "No Comment" is the fact that the investigation hasn't been completed and the investigator wants to be fair and accurate in any statement given.

10. Don't go "Off the Record".

According to the code of ethics of The Radio and Television News Directors Association, a journalist may violate a confidence if he or she feels it is in the public interest.

A basic knowledge of insurance vocabulary will be necessary for complete utilization of the data presented.

Allocated claim adjustment expenses—all expenses of an insurance company which can be separated as due to a particular claim and therefore allocated to that claim. The expenses included under this definition are:

1. **Expenses of the company employees, other than salary and traveling expenses.**
2. **Investigators, attorneys, adjusters fees and expenses (note: some definitions exclude fees paid to independent adjusters or attorneys for adjusting claims.).**
3. **Medical expense for expert testimony, examination, etc. incurred for the benefit of the company and not as treatment for the injured.**
4. **Other expert services, such as repair estimating, incurred by the company in determining its liability or effecting settlement.**
5. **Court costs, witnesses and summonses, copies of documents.**
6. **Stenographic services.**
7. **Any other expense not classified as "Loss Paid."**

Note: Some definitions exclude "overhead" expense.

Claim—a demand for something due or believed to be due, as an insurance claim.

—A demand by an individual or corporation to recover under a policy of insurance for loss which may come within that policy. A demand by an individual against an insured for damages covered by a policy held by the insured; such claims are referred to the insurance company for handling on behalf of the insured in accordance with the contract terms.

—The estimated or actual amount of a loss.

Claimant—individual asserting a right or presenting a claim for a suffered loss. One who makes or presents a claim; third party.

Claim reserve—an amount of money set aside by an insurance company to cover projected costs of a claim in, or subject to, litigation.

Cross liability—the interaction of insurance companies to determine responsibility between or among claimants in a suit.

Deductible per occurrence (same as "straight deductible")—a stated dollar amount of loss which for each occurrence will be borne by the insured.

Incurred losses—dollar amounts paid out in claims plus dollar amounts held in reserve by the insurance company on any given policy.

Liability—the state of being bound or obliged in law or equity; a responsibility. Exposure to a certain contingency of an undesired character. Further an obligation, usually financial; the probable cost of meeting an obligation.

Liability, contingent—liability for damages arising out of the acts or omissions of others, not employees nor agents.

Liability, contractual—an obligation assumed by contract pay damages for which another is legally liable. See Hold-Harmless Agreement.

Liability, legal—an obligation enforceable at law.

Liability, insurance—insurance against loss due to liability; covers both damages and expenses connected with alleged or actual liability.

Liability insurance, bodily injury—insurance against loss due to claims for damages because of bodily injury (including death) to persons not employees.

Liability insurance, property damage—insurance against loss due to claims for damages because of injury to others' property.

Loss Conversion Factor (L.C.F.)—a percentage added to incurred losses to cover general claim investigation and adjustment expenses.

Paid loss—amount of money actually paid out by insurance carrier to date—does not include Allocated Loss expense.

Pedestrian—one who walks, stands, runs, walks with a bicycle, or crosses a roadway on rollerskates, a skateboard, a toy vehicle, or in a wheelchair.

Probable maximum loss—PML—the worst loss to be expected under "average" conditions assuming that most if not all control mechanisms and procedures operate effectively.

Loss experience—dollar amounts of loss incurred during policy period.

Loss ratio—the percentage of losses to premiums. The proportion which losses incurred bear to the earned premiums; visually expressed as a percentage.

Loss reserve—that portion of the assets of an insurance company kept in a readily available form to meet probable claims provided for the payment of losses which have been incurred but not yet due.

Losses paid—the amount of loss for which money has been disbursed by the insurer.

Losses incurred—total losses, whether paid or unpaid, sustained by an insurance company under a policy or policies.

Reserve—funds of an insurance company or self insurance for the purpose of meeting obligations as they fall due. A liability set up by an insurer for a particular purpose.

Subrogation—the right of an insurance company to recover from a third party the amount paid under the policy.

Example: Builder A is constructing a portion of subway.

His insurance includes coverage for Builder's Risk. A high-rise apartment building is being constructed adjacent to the subway site. Builder B on the apartment project drives a piling through the subway tunnel wall. Builder A's insurer covers A's damages. In turn, through the subrogation process, Builder A's insurer may institute action against Builder B to recover damages to Builder A.

Third party—a person other than the principals (in this case first and second parties are the insurer and the insured).

Third party insurance—protection for the insured against liability arising out of bodily injury to others or damages to their property.

Third-party action—an action brought by a defendant in one action against another party, e.g., an injured workman, a sub-contractor. The sub-contractor may institute "third party proceedings" against the principal contractor if he feels such a principal contractor is basically liable for the loss.

Yaw Marks—the mark left on the pavement as a result of the lateral movement of a tire.

APPENDIX 19
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TECHNOLOGY SHARING

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