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Commercial Vehicle Sessions

REPORT TO THE SECTION

By JACK W. RING
Manager, Safety, Land O'Lakes, Inc., Minneapolis, Minn.

While first preparing this report, I attempted to single out one outstanding action taken by the Commercial Vehicle Section during the past year. Needless to say, so many things took place in the 1970-1971 conference year that it is impossible to determine which activity was the most earth shaking.

All efforts of the Commercial Vehicle Section have been designed to promote safety. Individual contributions have been part of a team effort. However, many of the achievements that can be attributed to this term of office should be credited to the activities of the sub-committees and their chairmen. As your outgoing chairman, it is a pleasure to report on these outstanding accomplishments. Unfortunately, time does not permit me to comment on all of the accomplishments of the section. Yet, I would like to single out Deane Fortune and his Program Sub-Committee for their work in putting together an interesting and informative program. The Section can look forward to one of the most successful programs ever presented at the annual National Safety Congress.

Al Hauck and his Sub-Committee deserves special recognition for their efforts in preparing the new *Small Fleet Guide*. After much time and effort, the *Small Fleet Guide* was published this year.

The Service Awards and Honors Sub-Committee, chaired by Tom Rust, recommended several Commercial Vehicle Members for Life Membership Awards.

Under the able leadership of Walter Weiss, Chairman of the Membership Committee, the first six months of 1971 showed a welcomed increase in the Commercial Vehicle Section membership.

William Foley and his Accident Review Committee were kept busy reviewing borderline accident cases which were submitted to the Council headquarters. The Accident Review Committee was asked to review more than 200 accident cases during the past year.

Many of the members of our Executive Committee have been active in the field of motor fleet safety training. They have served as instructors in our own Advanced Motor Fleet Safety Supervision Course and in many one-day Motor Fleet Accident Control Seminars, sponsored by the local safety councils. Many committee members have also served as instructors for the National Committee on Motor Fleet Supervisor Training. Certainly, these individuals and their companies should be singled out for their unselfish contribution to the Motor Transportation Industry.

The objectives of the Commercial Vehicle Section have been to encourage, develop, and promote methods and materials that lead to increased safety in our field. As I leave office, I am proud to report that we are achieving our goals. While the hard work and dedication of the Commercial Vehicle Section is certainly gratifying, it is only a small step in the right direction. I know that our new chairman and his executive committee will provide the leadership and the task force necessary to achieve the important work which still remains.

MOTIVATING THE PROBLEM DRIVER

By WILLIAM I. HARTMAN
Director, Safety and Supervisory Training, The University of Oklahoma, Norman, Okla.

Is he a problem driver or a driver with a problem? What to look for, what to do, before a driver's problems affect his driving.

For the purposes of this presentation I am going to ask the reader to assume that the driver is already employed in the organization. Also, that the company has utilized the proper tools and techniques of hiring practices such as physical-psychological-mental testing, patterned in-depth interviews, character reference checks, and driver skill tests. Finally, that a sound orientation program, proper initial training, and good supervisory practices have been carried out and the driver employee is found to be well qualified for his profession and performing satisfactorily.

However, at some later point in his employment, possibly within a few weeks or even after a long period of tenure as a driver, his behavior or actions deviate and he becomes identified as a "problem driver." (I wonder if *problem driver* is really a misnomer, placing the cart before the horse. In truth, what we are dealing with will generally resolve itself as a driver problem.)

"We are going to have to do something about Harry. That is the third time this year he has had a minor scrape. He's always been one of our best. But it never seems to be his fault."

"Joe is getting to be a damn' complainer. He's always griping about something anymore. We used to kid him all the time about age catching up, but now he gets sore and it's not much fun. Well, he will have to get over it, whatever it is that's bothering him."

How often has repetition of this kind of comment been heard in a transportation company? Are Harry and Joe merely exercising the human right of failing occasionally, are they victims of circumstance, or are they displaying early symptoms of a driver problem?

What constitutes the "problem driver"? Kepner-Tregoe define a problem as a deviation from the normal. The normal functional pattern and expectancy of the driver would simply be to manuever a vehicle to a destination and return with maximum efficiency and safety. This requires certain physical skills, job knowledge, and mental attitudes. If the driver deviates repeatedly in any of these three requirements from the acceptable norm with negative results, then we have a "problem driver".

Recognizing the Symptoms of the Problem Driver in Time to Take Remedial Action

Many of the symptoms pointing to a problem situation have long been recognized by fleet personnel. The tragedy lies in the fact that the supervisor doesn't know how to measure or quantify the extent or intensity of the driver problem or is so involved with his own pressures and stress that he rationalizes the situation, hoping it will resolve itself somehow. Only when the situation erupts or explodes with consequent action does he face up to the problem—often too late. Why don't we recognize the symptoms for what they are? For a number of reasons:

1. The "driver problem" often creates stress on the supervisor. By rationalizing the extent of the problem or pretending it doesn't really exist, he avoids the responsibility of making a difficult decision.

2. The supervisor doesn't want to see anyone get hurt. And if the driver problem is serious enough, it could penalize the driver's livelihood and his family. Therefore, the supervisor avoids facing reality and possible consequences.

3. If the supervisor doesn't know the driver as an individual, then he has no way of noticing gradual deviation from his normal behavior.

A symptom is defined as a happening, a slight indication or sign. What are some of the early symptoms of the problem driver? Change in attitude or behavior (deviation)—hostility, worry, fear, anxiety, aggression, boredom, apathy, forgetfulness (occurring in a progressive repeating pattern); irrational behavior, possibly due to drugs or alcohol; repeated accidents, often seemingly unaccountable; reflex and coordination deterioration; excessive absenteeism; borrowing money, exceeding credit limits; amnesia, fainting, dizziness; excessive fatigue; failure to fully meet job requirements; poor judgment.

While one incident may not necessarily indicate a problem, each should be evaluated as to its seriousness or potential consequences and the persistency or frequency of the symptom.

Evaluating the Cause and Effect

Cause of the driver problem will usually be attributed to physical or emotional components. Physical cause may be more easily measureable and symptomatic. For example, Joe, mentioned previously, may be realizing that age is bringing about changes that interfere with his normal performance of duties, causing frustration, anxiety, or emotional stress and fatigue.

Vision is typical of such deterioration. It has been estimated, for example, that at night it takes 10 times as much light to see an object in the dark for a normal 58 year old person as compared to one 21 years of age. In this case, sensory deficits may be compensated for by the provision of proper eye glasses.

The classical study of the 50's, "Human Factors in Highway Transport Safety," indicated that in research by Kerr of 2,000 bus driver applicants, 37 per cent were rejected on grounds of physical disability *after* they had been provisionally accepted for employment on preceding tests. The most important negative finding was vision. Vision continues to be a problem. While mandatory periodic testing of vision is necessary under some requirements for driver licensing, in many states it is not required unless the driver has been involved in some driving legal violation.

Organic disorders also contribute to the problems of older people, interfering with their competency on the job. Blood vessels deteriorate, causing them to get smaller and pressure to automatically increase. And, as nature no longer compensates for changes, failures in the organic system begin to take place.

Onset of diseases such as arthritis, nervous disorders, respiratory ailments, and others may also contribute to stress or pain or interference with the physical and mental prerequisites necessary to perform efficiently.

Many of these problems could be minimized by proper diagnosis and medical treatment. Some, unfortunately, may be serious enough to take the driver out of service.

Still other physical causes of driver problems include diet deficiency and lack of exercise. Again, the findings revealed in the study by Dr. McFarland and Dr. Mosley two decades ago would be just as valid now as then. Overeating, constipation, and other digestive irregularities contributing to mental and physical lethargy of the driver are common complaints today.

The nature of commercial driving consists of sedentary duties and not too much muscular activity. People in poor physical condition may well be less alert or able to perform their professional requirements.

Results or effects of physical problems may range from minor discomfort to serious effects. Gross fatigue, pain, unconsciousness, mental stress, and physical disorientation are all factors interfering with physical skill and mental attitude of the driver and his responsibility.

Emotional problems, on the other hand, are not as easily measureable or constant. Emotions can change rapidly and produce stress on the individual, also bringing about physical disorientation, character disorder, and total lack of ability to concentrate on the job. Examples of inability could include not staying on the road or driving otherwise in an

inefficient manner. Symptomatic of emotional stress are inability to sleep, sweating abnormally, hostility to others, and possible difficult relations with company officials, the law, or even the man's family. Emotional problems may lead to the use of alcohol and/or drugs.

For students of human emotions and behavior, man's wants have been a source of inquiry for a long time. If a man wants something intensely enough, he will condition his behavior to gain satisfaction in that want. Ordinarily he would like to have his fellow man's approval of his action, but if his want is strong enough, then gratification becomes so important to him that he may not be aware of or care about that approval. When we observe negative behavior in an individual and register disapproval or disgust, we may fail to recognize that he has a problem and is handling it the best way he knows how. We think and we feel, and we act on what we feel. If the driver is thinking about a domestic problem that happened before he came to work, his actions may be entirely inappropriate for driving down the road. I vividly remember calling on a good friend a few years ago who serves as safety director for a medium sized fleet. It was obviously not the time to call, as he appeared frustrated and angry, certainly not characteristic of his normal behavior. He was angry at the circumstances which had destroyed a good man's livelihood and potential. Wanting to talk, he related the following events.

One of the company's best drivers, a man with an unblemished record, had simply abandoned his rig at a point a thousand miles away. Company policy dictated immediate dismissal of the man. He turned up a few days later wanting his job back. Investigation revealed that his wife had asked for a divorce on the morning he started his run with resulting disintegration of responsibility. Is this a problem driver or a driver problem?

The normal desires of man include a need for recognition, security, achievement, family, and change or new experience. These factors may require emotional adjustment by the professional driver. The need for recognition sometimes involves a desire for power, approval, status, or a sense of belonging, any of which could bring about emotional conflict. A modern rig is a large piece of equipment; powerful, strong, and expensive. The driver often identifies with this image and enjoys the prestige of his work. As a driver, he perhaps has more capitol investment in his hands than his counterpart in most other types of industry. This necessitates independent decisions over factors beyond. his control such as weather, traffic, road, or load conditions. Anything affecting his image or status as a professional could create emotional conflict.

Space does not permit discussing each need individually; however, the importance of the family to many men warrants attention. The frequent absence from home necessitates decisions by the wife on children problems, finances, possibly affecting marital relations and creating emotional conflict in the driver affecting his efficiency and safety on the job.

Determining When and How to Become Personally Involved

The concept of accident prevention today is preventive rather than remedial. This is also true in the field of health and other related areas. Often we hear: The time to get involved is when the problem affects the man's work adversely. That is too late.

Modern psychology stresses the symptoms of people subconsciously crying for help in emotional crisis. Supervisors cannot be expected to recognize some of this subtle behavior for what it is. However, there are obvious signs of stress and/or physical deterioration which can be observed by common sense and practical observation. Again, much depends on the supervisor knowing his people and the usual consistent patterns of the individual. Some people seem to consistently worry or seem pessimistic. Others are cheerful, outgoing, optimistic most of the time. Incidents, signs, happenings (symptoms) should alert the supervisor to change and cause greater awareness and closer supervision of the individual. The availability of the supervisor and his rapport with the drivers could be a vital factor in early recognition of the problem and willingness to try to resolve it.

There are several ways in which the supervisor can become personally involved. Obviously, counseling would be a primary method. If we are dealing with a driver *problem*, then the objective is to try to find a solution for the problem. Counseling is defined by Webster as mutually advising, which implies both talking and listening. It does not suggest necessarily giving advice. Often, talking out the problem may be all that is necessary.

The techniques of counseling, such as skill in questioning, encouragement to go on, ability to separate facts and opinions, are a necessary development for any supervisor today. Counseling may also give the supervisor greater insight into the driver's personality with better understanding as to his behavior.

Riding with the individual could also reveal information that would not be obtainable just by counseling. An article by Kenneth Beadle appearing in the May, 1970 issue of *Commercial Car Journal* relates a case of an accident repeater. The records indicated a poor performer, but the author when visiting the terminal found him to be likeable and well received by his customers. His problem became quite obvious to the safety director who rode with him for half a day on pickups. Counseling with the young man resulted in his going two and a half years without any further mishaps.

Checking driver records can also be a valuable source of information as to potential problem areas. Some of this may be routine information obtained from trip logs, safety records, traffic records, or other sources. Records may provide the factual information helping to confirm an intuitive judgment.

Determining When and How to Seek Professional Help

While much good counseling can be accomplished at the immediate supervisor's level, he must be aware of his own limits and knowledge. When the problem gets beyond his capacity to handle or his scope of responsibility or when he finds himself so emotionally involved that logic is distorted, he should seek professional help. Sometimes, closeness to a problem may interfere with objectivity for all concerned.

If the driver problem is now more frequently manifested or adversely affects his performance (or that of others), it may require assistance from outside. Possibly, actions taken by the supervisor relating to the problem have not brought about desired results and change or correction is now more critical. The hard question is can someone else handle this problem better, faster, and more efficiently than he can? If the answer is yes, then there is a responsibility to get outside help.

Since staff function is service or advisory in nature, then the internal consultative talent of the organization is usually available for specialized problems and ought to be first considered.

Problems of a physical nature should obviously be referred to medical services, if available. The medical doctor may also more readily recognize an emotional problem in which he may be able to offer assistance. If the emotional problem is too complex for his professional experience, he might suggest psychiatric assistance.

If the problem relates to skill or judgment, the driver trainer may, by riding with the driver, be able to detect careless habits creeping in or devloping physical problems leading to deterioration of coordination and judgment. The safety director, by careful accident record analysis, might establish the basic cause of a poor safety record. He may also assist in establishing rapport with the driver, which is sometimes difficult to obtain.

Depending on the nature of the problem and size of the organization, there may be many other internal resources. Personnel department may offer several kinds of tests which could be useful for validating judgments. Credit unions may offer financial advice on how to consolidate and pay off debts that seem insurmountable to the driver. In the interdisciplinary approach of management today, a supervisor has the responsibility to fully utilize the resources of the organization to maximize management goals.

The fleet industry is accustomed to seeking professional outside assistance in technical and management situations. Borrowing from an editorial in *Commercial Car Journal*, March, 1964: "A consultant is a professional who

assists management in solving a particular problem in a specific situation." (Allan Harvey, President of Dasol Corporation.) "The consultant is an expert in problem solving and in getting action."

Perhaps most important and of value to the client will be the consultant's analytical ability and objectivity regarding the problem. He will also have practical experience in his specialty.

Externally, communities may provide marriage counselors or social agencies qualified to deal with domestic problems. Religious leaders are usually well trained in marital counseling and available if the parties desire help. AA is still regarded as one of the best sources of assistance for the alcoholic problem, and similar groups are attempting to assist the drug addict.

City and state law enforcement agencies conduct excellent corrective or defensive driver training schools which can be helpful in retraining or correcting slipping driving habits. Attending such a retraining course sponsored by a law enforcement group can be more meaningful to some individuals than participation in a company course.

Minimizing and/or Preventing Recurrence

Motivating the problem driver involves two basic skills of management: problem solving and motivation of people.

A problem well defined is already halfway to the solution. Therefore, the supervisor has to individually recognize and analyze the situation. He must decide whether there is a problem and to what degree. If the individual has been defined as a problem driver, there is fault or deficiency in his performance relating to skill, attitude, judgment, or knowledge. This deviation from normal performance will have a physical or emotional (or combination of both) source. In order to arrive at an acceptable and workable solution, the supervisor will need to know the source or reason for the problem.

But does the person know he has a problem? To tell a person that he has one doesn't necessarily mean that he recognizes or accepts this as fact. He may be the last one to recognize or accept the situation.

The supervisor initially determines the objectives or goals of good performance desired in the employee. The problem exists because the employee has deviated from these normal expectations. Resolution of the problem involves the following steps:

Step 1 would be to define the problem with the person so that he recognizes what it is and how it is affecting him on the job.

Step 2 would be to gather and present pertinent data to the problem. Here the supervisor should be careful to separate fact from opinion. "We act on how we feel." If a person thinks (opinion) something exists, it is just as real to him as if it actually did.

Step 3 determines and implements possible actions or solutions to the problem. The supervisor should consider as many alternatives as possible to get the best results. Decision on which action(s) to implement should be evaluated in light of objectives established, consistency with company policy, and the effects on the individual and others involved.

Step 4 is follow-up, or check results. In the final analysis is change brought about?

Problem solving today is closely related to the management by objectives philosophy. By mutually discussing the problem, helping the person to analyze it by himself, and motivating him to assist in working out the solution, there is greater acceptance and commitment by him to a plan of action. It also contributes to the person's growth and development of independent thinking.

Finally, in order to relate motivation to the problem driver it is necessary to define several terms:

Motivation is supplying the incentives which impel an individual to achieve a pre-selected goal.

Incentive is anything which an individual feels will satisfy a drive or motive.

Drive is a persistent stimulated condition usually rising from body-tissue needs and demanding immediate satisfaction.

Motive is any condition, usually emotional, that arouses, sustains, and directs an individual's activities to a pre-selected goal.

Motivation comes from within the individual. If the supervisor wants to bring about change in others then he must provide incentives. These incentives should motivate sustained persistent performance and not be of a "one shot" direction.

Dr. Earl Hannaford, who developed the definitions above, suggests that motives may be positive or negative and can be classified into four types: discipline, punishment, tension, and attitude. Each of these may be ambivalent by nature and as opposite as love and hate. Discipline and punishment, for example, solely in the interest of the motivator are negative. On the other hand, when each is viewed in the interest of the person being motivated, they are positive. When both are negative they relate to fear and anxiety which might in extremes cause panic or total disorientation in behavior.

An article appearing in the June, 1970 *ASSE Journal* presents additional theories concerning discipline and punishment as they relate to eliminating unsafe behavior. The article is based on B. F. Skinner's psychological theories of learning and suggests the rewarding of safe behavior rather than the punishing of unsafe behavior. Punishment can produce unwanted side effects which reduce its effectiveness. Quoting from the article:

1. "The employee may continue to behave the same way but try harder to avoid being observed by the supervisor.

2. "When the same behavior can lead to both reward and punishment, the employee will be in a state of conflict.

3. "Conflict leads to frustration and aggression. The employee is likely to try to take out his frustration by reduced output, substandard quality, damage, waste, or fighting with other workers."

The laws of learning relating to effect, exercise, and use are just as applicable to negative behavior as to positive. If a driver develops an unsafe practice, it has been learned; and if he receives satisfaction, then he tends to repeat it. The more he does it the more it becomes reinforced. He may feel he has the admiration of others, gets the job done quicker, or avoids extra effort. These can be strong motivators for continuing the unsafe practice.

Most authorities agree that punishment and discipline are of limited effectiveness and are seldom a solution to a motivational problem. If unsafe actions are repeated, however, the supervisor must be prepared to follow through on disciplinary action.

Norman Maier, in his book *Three Types of Appraisal Interviews*, suggests that when positive recognition is made of the strong points of a man's performance, he will improve other areas of deficiency. The authors of "Safe Behavior Reinforcement" concur. Among the suggestions as to how to reinforce safe acts are the following:

Increase the ratio of time spent on recognition of safe behavior compared with time spent in disciplining.

Increase the ratio of recorded commendations to recorded reprimands.

Give employees tangible recognition and awards for their safe behavior.

Place increased emphasis on the personal gains that employees reap whenever they work safely.

Place increased emphasis on the job gains of working safely.

Use both increased individual and work group participation in developing recommended safety procedures.

Develop operational procedures not only for identifying but also for rewarding safe practices.

Problem solving is one of the most important and challenging responsibilities of the supervisor. The driver problem demands as much intellectual and analytical ability as is required of technical difficulties. To restore a man to his full potential and capabilities must, however, be one of the most rewarding satisfactions of a supervisor. It is more than just a sound economic investment; it is the effective practice of leadership.

Leadership has been defined as the ability to cause others to want to do what you want done, resulting in satisfaction to both. When the supervisor provides the proper incentives and effects the change in behavior necessary to solve the driver problem, he contributes to positive leadership in his organization.

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School Transportation Sessions

ALCOHOL SAFETY COUNTERMEASURES PROGRAM

By STANLEY A. ABERCROMBIE
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Studies made in the United States as well as in several European countries show alcohol to be a central factor in about half of all highway deaths.* Two-thirds of these deaths involve problem drinker-drivers—people with serious alcohol problems. One-third involve heavy social drinkers who occasionally drive while intoxicated.

Applying these facts to the driving population of the United States, one might say that our highways have become a battleground in an undeclared war between an estimated seven per cent of drivers who drive too soon after drinking far too much and the remaining 93 per cent who, ordinarily, do not.

The Office of Alcohol Countermeasures (OAC), instituted by the National Highway Traffic Safety Administration (NHTSA), is charged with an all-out drive to remove the excessive drinker-driver from behind the wheel of his car. In this effort to see to it that people do not drive while intoxicated, we are not conducting either a morality or a health campaign against alcohol. Nor is the OAC intent upon changing America's attitudes and habits about ordinary social drinking. Instead, the Alcohol Safety Countermeasures Program is the spearhead of the national effort to get problem drinker-drivers off America's highways and to keep them off until their problem is alleviated.

The Problem Drinker

What do we know about the problem drinker who drives? In all probability he has a record of numerous arrests for alcohol-related offenses both on and off the highway; he is known to various health and social agencies in his community; and he often has a history of troubled relationships with his employer, family, creditors, and community agencies.

Blood Alcohol Concentration

Most important from the standpoint of highway safety is this fact: the blood alcohol concentration (BAC) of the problem drinker-driver, when checked at the time of a crash or an arrest, indicates that he has been drinking heavily. Blood alcohol concentration refers to the amount of alcohol in the blood stream. Experts agree that a BAC of .10 per cent indicates serious impairment for the safe performance of a complex task such as driving a motor vehicle. Problem drinker-drivers commonly show BAC readings in excess of .15 per cent.

Conversely, the typical or low-volume social drinker's BAC rises only to about the .05 per cent level. Studies show that at and below this level a person will experience little extra hazard in driving safely.

As part of the Federal government's highway safety effort, the standard on alcohol issued by the Department of Transportation establishes that a BAC of .10 per cent is legal evidence of intoxication. About three-fourths of the states now have adopted this .10 per cent BAC as the presumptive level for conviction on the charge of drunk driving. (Two of these states, Idaho and Utah, have adopted a .08 per cent level.) In the remaining one-fourth of the states, the presumptive level for drunk driving is a BAC of .15 per cent. (In one state, New York, it is .12 per cent.)

*Results of these and other studies were reported to Congress by the Secretary of Transportation in the *1968 Alcohol and Highway Safety Report*. Copies are available at 50 cents each from Superintendent of Documents U. S. Government Printing Office, Washington, D.C. 20402

Illegal Per Se Law

In recognition of the difficulties in apprehending drunk drivers, assembling foolproof evidence of their BAC levels, prosecuting them in court, and obtaining convictions, several states have enacted laws which make it an offense to drive with a specified BAC—.10 per cent in Delaware, Minnesota, and Nebraska; .12 per cent in New York; and a .15 per cent in Oregon. The NHTSA favors this type of law as being easier to apply and therefore more effective in removing drunk drivers from the road.

Having heard this background information, you are wondering what the NHTSA is doing about the matter. The Alcohol Safety Countermeasures Program is designed to help states and communities strike hard at the problem drinker-driver. Three lines of approach are indicated, and these must be carefully coordinated and used sequentially as parts of a unified pattern or system.

Identifying the Problem Drinker Who Drives

First, the problem drinker who drives must be identified and separated from the great majority of social drinkers. He can be singled out on the highways by video tape recorders as well as by chemical tests. Off the highways he can be identified through court records and the resources of social agencies, health agencies, and insurance companies. The program calls for procedures under which records and other relevant information on the problem drinker can be exchanged between police agencies and driver license agencies. It calls for social agencies to provide information to courts and licensing officials concerning the identity of problem drinker-drivers. At the same time, the confidentiality of the physician-patient relationship must be maintained.

With records of court convictions for alcohol-related offenses readily available, driver licensing officials can determine whether or not an applicant should be licensed. With the cooperation of social and health agencies which provide help for the problem drinker, he can be given special driver counseling and retraining.

Deciding What To Do With the Problem Driver Who Drives

Second, deciding what is the most appropriate action to remove the problem drinker from the highway and assure his rehabilitation will be done by courts and driver licensing officials. Courts will base their conclusions on the results of a pre-sentencing investigation after conviction. The pre-sentencing investigation will develop background information needed to distinguish problem drinker-drivers from those who have no history of a drinking problem.

The courts must make the decision as to what treatment regimen to prescribe for each convicted problem drinker-driver, as well as the most appropriate action for the future driving of the person with no prior alcohol-related offense.

When a problem drinker applies for a driver's license and an investigation shows that he has alcohol-related arrests and convictions or other indications of an alcohol problem, the licensing agency works through a medical review board. This board reviews the records and information the licensing agency has assembled concerning the applicant, requests a medical examination if this is deemed necessary, arranges a hearing for the applicant, and then makes recommendations to the licensing agency.

The vital decision as to what action to take regarding a problem drinker who drives, or who wants his license re-instated, will be based on a fair judgment reached after a review of the facts revealed by a thorough background check. Decision options include revoking the accused's driver license (or not re-instating it), securing his cooperation in undergoing counseling and treatment for his alcohol problem, and limiting his driving privilege during this period.

If the action decided upon is to help the problem drinker overcome his excessive drinking pattern, he must be persuaded to undergo medical treatment. In such cases the physician may prescribe a safe drug to help the problem drinker resist alcohol consumption.

If it is decided to limit or revoke the abusive drinker's license to drive, which may be the best action in certain cases, some leniency may be in order. For example, an individual whose background check shows he will in all probability accept responsibility to abstain from alcohol may be given opportunity to receive special counseling or re-education and may even be allowed to drive (but only to and from work during daylight hours). Extra surveillance would be undertaken to make sure that such a driver did in fact limit his driving to daytime trips between home and work.

Following Up With Necessary Action

Third, acting to follow through on the most appropriate procedures to reduce the drinking-driving problem is the final part of the sequential pattern. No countermeasure can be expected to be applied easily, automatically, or without objection. Effective implementation will require the use of technical knowledge, the development of adequate information through background checks on individual problem drinker-drivers, and changes not only in present administrative procedures but in certain laws as well. Assuring effective follow-through on a broad range of countermeasure actions to solve the drinking-driving problem will also require considerable expenditure of public funds.

In all cases, the interest, cooperation, and strong support of states and communities (citizens, safety organizations, and governmental agencies) are prerequisite to the initiation of sound alcohol safety countermeasures and to the saving of countless American lives in years to come.

Moving the Program Forward

The Alcohol Countermeasures Program is being advanced without delay in 35 locations which have shown that they are ready to act. These locations are typically metropolitan areas (cities and/or counties) but in four cases the location consists of an entire state (Delaware, Idaho, South Dakota, Vermont). This is how the National Highway Traffic Safety Administration is helping to initiate the needed countermeasure action:

1. Support through matching grants to help states and communities upgrade highway safety. The Highway Safety Act sets forth acceptable levels of highway safety in terms of sixteen Highway Safety Program Standards. A number of alcohol safety countermeasures (some traditional and some new) are included in eight of these standards. They deal. with vehicle registration, driver education, alcohol in relation to highway safety, traffic records, driver licensing, traffic courts, pedestrian safety, and police traffic services.

States and communities can continue to receive matching funds under Section 402 of the Highway Safety Act, applying this money to the more effective control of the drinking-driver problem.

2. Research and development efforts to generate improved alcohol safety countermeasures. The extensive research in the 1960's (which showed the direct relationship of excessive drinking to traffic deaths) needs to be augmented in the 1970's by developing and testing new methods of controlling the problem drinker-driver.

One challenge is how to increase public understanding of the facts about excessive drinking and highway deaths. Another is how to improve systems and devices for detecting the presence of alcohol in the driver's bloodstream. Still another is how to prevent operation of vehicles by intoxicated persons. Another area of need is to devise and test new techniques for enforcing drinking-driving laws and to develop new resources for use by the courts in dealing more effectively with convicted problem drinker-drivers.

The National Highway Traffic Safety Administration has contracted for a series of in-depth studies to produce, test, and evaluate better ways of getting at the problem drinker-driver, of removing him from the highway, of motivating the courts to require investigations prior to sentencing convicted offenders, of providing special counseling and other assistance to problem drinker-drivers while they are following prescribed rehabilitation procedures, and of assuring that convicted drinker-drivers are not re-licensed for driving until a medical review board has found their rehabilitation to be effective. Results of these investigations will give states and communi-

ties greater confidence in planning alcohol safety countermeasures that will pay off.

3. Public education campaign to develop broad knowledge and understanding of the alcohol-and-highway-safety problem. Before the public will support and pay for effective countermeasure activities, people in communities in every state need to be impressed—repeatedly and in varied ways—with the central fact of the problem: half of our highway deaths are caused by excessive drinker-drivers. The American public needs to understand thoroughly that, while any drinking immediately before driving is discouraged, the Alcohol Safety Countermeasures Program is directed at the group of medically sick people who are problem drinker-drivers, a small part of the nation's million-plus drivers. A special focus should be placed on the role of youth in the drinking-driving problem. Nearly half of the fatally injured drinking drivers are under 30 years old. Those not yet 20 years old reflect inexperience both in driving and in drinking, and this combination shows up starkly in the records of teenage crashes.

This intensive public education campaign is the backbone of the entire Alcohol Safety Countermeasures Program. On the success of the campaign will depend the degree of support that can be generated among both citizens and public officials for strong countermeasures.

4. Alcohol Safety Action Projects (ASAPs) to demonstrate the usefulness of alcohol safety countermeasures within states and communities. These three-year, Federally funded, model projects (operational in nine states, twenty in the initiation stage, and six more preparing proposals) will provide evidence of the effectiveness of the countermeasures concept. ASAP efforts also will reveal the relative values of different countermeasures as well as different countermeasure combinations.

Each ASAP is designed to achieve ten basic objectives:

1. Persuade public officials to develop cooperative patterns for needed action among all involved agencies and groups.

2. Create public understanding of the alcohol safety problem and public support for the official action that is needed.

3. Identify problem drinkers who are also driving by tying together the records from official agencies and other sources which can help to identify these persons.

4. Emphasize the need for enforcement personnel to apprehend more intoxicated drivers at the times and in the places of their drunk-driving offenses.

5. Stimulate the courts to initiate pre-sentencing investigations of persons convicted of driving while intoxicated, in order that the courts can reach fair judgments about license revocation, referral for treatment, and other appropriate actions.

7. Establish medical review boards and arrange for these boards to determine the eligibility for the licensing of every driver who shows evidence of a drinking problem.

8. Assist in rehabilitating problem drinker-drivers whose licenses have been suspended or revoked by arranging driver counseling and special re-training programs.

9. Utilize existing school driver instruction and adult driver improvement programs to reach thousands of people with up to date information about the role of alcohol in crashes.

10. Evaluate every major aspect of each countermeasure undertaken, to determine its relative effectiveness in controlling or reducing the presence of alcohol as a factor in highway accidents.

Following completion of the ASAP projects (Federally funded under Section 403 of the Highway Safety Act), states and communities will want to continue those countermeasure efforts which really work. Assistance in supporting these continuing efforts will be (and is now) available under Section 402 of the Highway Safety Act—fifty-fifty Federal/state matching funds. One important aspect of each ASAP project is the planning needed to assure the continuation of effective countermeasures with state and local funds, augmented where necessary by Section 402 Federal matching funds.

Innovative Efforts and Early Trends

Here are a few highlights to give you an idea of what the various Alcohol Safety Action Projects are doing and of what's happening as a result.

Lincoln, Nebraska, is making use of a police helicopter (provided by the Law Enforcement Assistance Administration) to spot dangerously drunk drivers who are then apprehended by ground patrol units called to the scene by radio from the helicopter.

In the metropolitan area of Denver, Colorado, arrests for driving while intoxicated have tripled and highway deaths are down by 25 per cent.

Drunk-driving arrests are up 250 per cent in the Seattle-King County area in Washington State. In nearby Oregon, arrests for driving while under the influence have doubled and traffic fatalities are down 40 per cent.

Similar good news for highway safety is reported from Marathon and Sheboygan Counties in Wisconsin. These two communities share a $1,950,000 contract monitored by the University of Wisconsin. Marathon County reports, for the first six-and-one-half months of 1971, a doubling of drunk-driving arrests and a conviction rate that is 95 per cent of total prosecutions. In the same period, Sheboygan County arrests have tripled. The two Wisconsin sites have developed a detailed countermeasures program organized under four broad categories: driver education, driver licensing, driver control, and community education.

The State of Vermont applied for and was given a $2,000,000-plus contract in conjunction with the state Department of Mental Health. Vermont's program includes a wide range of countermeasures among which are provisions for transportation for drivers suffering license revocations or suspensions.

In cosmopolitan Nassau County, New York, the ASAP program concentrates on two major efforts: rehabilitation and prevention. They have an interesting approach to the former objective. Convicted drunk drivers have a chance—which is what their ultimate victims *don't* get. Of those convicted of drunk driving, 50 per cent may draw unmarked envelopes for a chance to take rehabilitative steps without loss of driving privileges. Most are in favor of mandatory classroom sessions to help them mend their ways. The other 50 per cent are losers and get the full penalty prescribed.

In Albuquerque, New Mexico, the ASAP area includes Bernalillo County. Here DWI arrests have doubled in town and tripled in the surrounding countryside. In addition to the usual public education programs via radio, TV, and personal appearances, Albuquerque broadcasts radio programs in both Spanish and English.

Medically supervised disulfiram treatment (also called Antabuse) is helping to control drinking drivers in the Washtenaw County (Michigan), Denver, and Portland (Oregon) ASAP areas. The number of problem drinkers in Washtenaw County receiving this treatment increased from only 60 last February to 181 in June.

In Charlotte, North Carolina, a saturation campaign of mass media information was instituted nearly a year ago. The Charlotte-Mecklenburg County ASAP has elicited an amazing response from publishers and editors who have devoted numerous pages of public service space, news copy, and air time to the ASAP project. This ASAP also has distributed drink-drive calculators which figure, by weight, time, and alcoholic beverage, certain limits for drinking and driving. They also distribute bumper stickers, brochures, and paper bags in liquor stores on which are printed blood-alcohol charts.

Summation

We in the National Highway Traffic Safety Administration are under no illusion that the job yet to be done will be easy. But we do believe that together we will point the way to the kind of coordinated action that every community will need in order to gain control over the problem of drinking drivers who cause such horrible tragedy on our highways.

With such a massive, ongoing, state, community, and national effort, let us hope that soon our office will stop receiving letters like this one: A woman wrote, "Three days after the accident, he (the drunk driver) was out on the highway again as if nothing had happened. Yet our boy lies in the cemetery, with no second chance, and our other boy is permanently handicapped because our laws are

so lenient with these killers. I am pleading with you," the letter continued, "to do something about this by making our laws more stringent as to these drunken drivers."

ADMINISTRATION AND REFERRAL (RECOGNITION AND HANDLING OF PROBLEM DRINKERS AND ALCOHOLICS)

By JOHN B. PERKINS
President, Illinois Alcoholism and Drug Dependence Association, North Chicago, Ill.

The society in which we live attaches a great deal of importance to drinking beverage alcohol. As a social pastime, drinking approaches the status of an institution.

Men have invented a thousand alcoholic drinks from dry martinis to Harvey Wallbangers. But they didn't invent alcohol. Scientists are sure alcohol has been on the earth a lot longer than man. Alcohol came from a natural process; a process you might call a phase in the life of fruits and cereals. When the tiny yeast plants that are everywhere come in contact with the sugary juices of plants, the juices ferment. From fermentation you get ethyl alcohol. From this simple fermentation process we get such drinks as beer and wine. Man's inventiveness came into the picture through a process he discovered called distilling. From distilling we get such drinks as whiskey, brandy, and gin.

One thing we can be pretty sure of—if any of these drinks didn't contain alcohol, they wouldn't be very popular.

No one knows how primitive man first discovered alcoholic drinks. We can, however, make a pretty good guess. He pressed some fruit juices into a hollowed-out gourd. Before he could drink the juice he was interrupted, and went away for a while. By the time he got back the miscroscopic yeast plants had done their work. He tasted the juice he had left. It tasted a little different, but he drank it.

Something else was different, too. He began to feel sensations he had never felt before when he drank the juice just as it came from the fruit. To the man, the change seemed like some kind of magic—he didn't know the new sensations he felt were caused by alcohol the fermentation had made. When you drink wine today you get the same sensations.

What happened between those first early experiments with this strange fruit juice and today fills the vast literature in the field of alcoholism. We do not have space to delve deeply into it now. We will examine a few phases of drinking beverage alcohol that concern a great many people in our country.

If we start with the United States population figure of a little more than 200 million people and take the experts statements, we get a figure that shows about 95 million of our adult population drink. By the word "drink" I am taking in a great variety of drinkers; those who take an occasional glass of wine on some special occasion, those who take several drinks during the week, and those who drink everyday. But of these 95 million people only a small proportion—about nine million—should not drink alcoholic beverages. Unlike the other millions of their fellow citizens who can drink moderately, these nine million cannot. They are the people we call problem drinkers, or alcoholics. I'll have more to say about alcoholics in a little while.

Probably one of the oldest and most widely accepted beliefs about alcohol is that it is a stimulant. The curious part of this belief is that just the opposite is true; alcohol is a depressant, a narcotic. It acts in much the same way as a sedative the physician prescribes for pain or sleep.

Why then, people ask, does the mild, quiet little fellow take a few drinks and suddenly

become the life of the party, slapping others on the back, urging everybody to sing, telling risque stories? Why does the dignified and proper businessman suddenly do the twist? Why does the prim and reserved middle-aged woman turn into a gushy and loquacious female? Their actions certainly seem to indicate that alcohol has stimulated them.

What actually happens is this: our most critical and moralizing mental states are the first to be affected by alcohol. This state of our personality is referred to by Sigmund Freud as the alter ego, by Eric Berne as our internal parent, and by other behaviorists as the extero-psychic state; ministers and priests refer to this state as our conscience. In other words, the censors in our personality—the part of us that tells us not to blow our tops over some trifle that makes us angry, not to take a chance that might be dangerous, not to make a sarcastic remark that might cause trouble, the cautious guard that keeps our emotions in check so we can live comfortably with other people—this censor is decommissioned by alcohol. With this psychic state anesthetized, the internal Child, the Id, the archaic psychic state, is freed. If this state of our personality has repressed appetites, drives, anger, resentment, feels confused and unloved, this inner Child state will begin to act out accordingly. Some of our actions may be amusing, some silly, some extremely dangerous. The guest at a party wearing a lampshade for a hat may be funny, but that same person, his critical judgment dulled by alcohol, may cause a fatal automobile accident on his way home.

For a period of time, the anesthetizing effect of alcohol has released the drinker from the grip of reality. He temporarily forgets the business deal he was worrying about, the argument he had with his wife, the tailgater who burned him up on the highway. The tension is reduced. He feels temporarily relaxed and comfortable in a world where he is often anxious, keyed up and frustrated. If he is one of the 90 million people that we speak of as normal drinkers, he occasionally releases the grip of reality with this temperate use of alcohol. He may drink as a sort of social lubricant at a party where it would be difficult to meet and enjoy people without alcohol. He may have a number of drinks over a week end of leisure, he may have a cocktail or two before dinner at night. But his drinking is largely a social custom, a pleasant interlude, and so far as beverage alcohol is concerned, he can "take 'em or leave 'em alone."

The problems centering around uncontrolled drinking—the kind we are concerned with here—are those that grow out of what is called alcoholism. There are many definitions of alcoholism; a couple of the most commonly used are: "An alcoholic is a person who has a continuing problem in any department of his life because of his drinking." Alcoholics Anonymous says it is being powerless over alcohol and the alcoholic's life has become unmanageable. Mark Keller of Rutgers University says: "Alcoholism is a chronic disease or disorder of behavior, characterized by repeated drinking of alcoholic beverages to an extent that exceeds customary dietary use or compliance with social drinking customs of the community, and which interferes with the drinker's health, inter-personal relations, or economic functioning."

There are many problems that are caused by excessive drinking, or drunkenness: accidents, fights, and the like. But there is a great deal of difference between drunkenness and alcoholism. Drunkenness is usually a temporary condition. An alcoholic is often drunk. But not everyone who gets drunk is an alcoholic.

The alcoholic is the man or woman who has become dependent on alcohol to get through the process of day-to-day living. He is addicted to alcohol. He no longer "drinks" in the common use of the term. He is interested in the ingestion of alcohol just as the narcotic addict is interested in his drug.

The alcoholic progresses in his self destructive pattern until he dies a premature death, is institutionalized, or finds some way to get major intervention into his psycho-social self damaging pursuit.

There is a lack of consensus on the etiology (causes) of alcoholism. However, more and more professionals are beginning to feel the seeds of addiction are planted in the early

household drama—the formative years from birth to five years of age. It is in this period that we form our basic attitude toward ourselves and toward others. Alcoholics feel "not OK" toward themselves—that is they feel inferior, inadequate, unloved, unrecognized. They feel others are "not OK," that is, punitive, unfair, unrecognizing, unloving.

There is very strong evidence that alcoholics are driven, whether sober or drunk, by an inner drive to destroy themselves. After many years of sobriety, an alcoholic will return to his alcoholism state if he takes a drink. People in AA (Alcoholics Anonymous) believe, "once an alcoholic always an alcoholic," and recovered alcoholics in AA consider themselves alcoholics regardless of how long they have been sober.

In the past thirty six years, AA has had more success in the treatment of alcoholism than any other approach. These self help groups have considerable wisdom about alcoholism.

Right now the problem of alcoholism is a serious one. In the State of Illinois, with a population in excess of 10 million people, the alcoholic population is considered to be around 500,000, with about 280,000 in the Metropolitan Chicago area.

The Federal government considers alcoholism a problem that ranks with heart disease, cancer, and mental illness. On December 31, 1970 the President signed into law the "Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970." This legislation created the National Institute on Alcohol Abuse and Alcoholism within the National Institute of Mental Health. The NIAAA will be the primary focal point for Federal activities in the area of alcoholism. The Institute has responsibilities for formulating and recommending national policies and goals regarding the prevention, control, and treatment of alcohol abuse and alcoholism, and for developing and conducting programs and activities aimed at these goals.

NIAAA has projected two principle overall goals in its programs. The first goal is to assist communities in making the best alcoholism treatment and rehabilitation programs possible. The long range goal is to help develop effective methods of prevention of alcoholism and problem drinking. To achieve these objectives, NIAAA will support programs of research, training of personnel, development of community services, and public education.

NIAAA is about ready to launch a massive national campaign in the communications media on alcohol abuse and alcoholism. They will supply local programs with literature, radio and television spot announcements, and station break announcements. They have developed educational films and other material which will be distributed throughout the country.

Dr. Karl Menninger of the famed Menninger Clinic says "If alcoholism were a communicable disease, the government would declare a state of national emergency tomorrow."

A question that comes to mind is, Who are all these alcoholics? Are they skid row derelicts?

It comes as a surprise to many to learn that less than five per cent of the alcoholics live on skid row.

The vast majority of alcoholics are among the people around you. You'll find them among people you work with, the people you know socially; in your clubs, your churches and your civic groups; perhaps your own family. You will find alcoholics in all these places because the condition cuts vertically through all lines of social and economic status, of educational background, occupation, race, color, and creed.

The majority of alcoholics are still employed. Their alcoholism has not progressed to a point where hospitalization is indicated. They need counseling and referral to AA or other out-patient treatment, but not necessarily institutionalization.

The alcoholic must not be judged by the same standards as social drinkers. We must regard his obsessive-compulsive behavior that is complicated by uncontrolled drinking as a symptom of a condition over which he has no control.

It is hard for a non-alcoholic to grasp the depth and complexity of the behavior factors involved in compulsive drinking. It is hard

for physicians as well. It is hard to realize that the social, economic, intellectual, or professional background of the victim doesn't help him resist the progress of the condition, once the compulsive phase has begun.

Help in such cases takes patience, skill, and a depth of understanding that can be developed only by long experience with the problem. Giving such help is not a job for amateurs. That is why the alcoholic and those affected by the illness must seek outside professional assistance.

What are the sources of assistance?

There are a number of them, and the alcoholic seeking help who lives in a city can find experienced and skillful assistance of several kinds. The easiest way to find it is by checking the telephone directory. Under "A" he will find Alcoholics Anonymous, Alcohol Information and Education Centers, and other alcoholism counseling people.

In Chicago, we have the Chicago Alcohol Treatment Center, many private and tax supported hospitals and clinics, as well as individual counselors who are professionally qualified to give depth counseling for the individual alcoholic and his family.

For the purposes of this discussion we can divide problem drinkers into two rough classifications: those who are motivated to a point of admitting they can no longer control their drinking and are ready to be helped; and those who maintain they can still control their drinking, who feel they can take it or leave it alone despite evidence to the contrary.

For the smaller first group the answer has become almost automatic, "Go to AA—Alcoholics Annonymous!" And in most cases this answer is right. The remarkable fellowship of Alcoholics Anonymous, which has grown from two men in 1935 to nearly 400,000, is the most effective and successful means ever developed for arresting alcoholism and returning its members to productive and relatively happy lives. Not everyone who goes to AA "makes" its program—far from it. If everyone who tried AA were successful, the membership would probably be several times larger than it is. In many instances, psychiatric intervention is needed in addition to the fellowship of AA.

The great problem confronting us today is finding and motivating the incipient alcoholic. Getting the problem drinker to turn around and face his alcoholism is not easy. How can we get those around him—his wife and family, his employer, his friends—to understand that he is not a moral delinquent but a man (or woman) involved in a repetition compulsion; a person with an addiction who is caught in a psycho-social self damaging behavioral pattern.

Within the alcoholic population there are some very suicidal people. Like certain needle drug users, these alcoholics are compelled to lay their very body tissue on the line. They get into many messy situations, arrest, bar room brawls, black mail, divorce, dishonesty with entrusted funds, and they go from one job to another in a downward spiral to a very low bottom such as Skid Row or death.

The old stigma of immorality still clings, to some degree, to alcoholism. But in the past 35 years or so—actually, since the birth of AA—we've come a long way in the growth of understanding this human problem, alcoholism. The tremendous success of AA plus the all out cooperation of our communications media, newspapers, magazines, TV, and radio, have brought an entirely new attitude toward the condition and its victims. With this change in attitude, new counseling techniques, treatment programs, and facilities have come into being. If you don't think there is a big change in attitude, just recall the words of a newly elected governor of a neighboring state a few years ago at a press conference: "I don't drink, because I'm an alcoholic and a member of Alcoholics Anonymous—and you can put that in your newspaper." Try to imagine some newly elected government official making such a statement a generation ago.

The two men whom the early state alcoholic is most likely to consult about his drinking are his clergyman and his physician. Fortunately for the alcoholic, men of both callings have come a long way in their knowledge and understanding of the illness. The ministry, long as much baffled by alcoholism as the layman, has made notable efforts to inform itself. Since the inception of the now famed Summer School of Alcohol Studies at

Rutgers University, many hundreds of clergymen of all faiths have attended its sessions. The literature on pastoral counseling on alcoholism (again, written by clergymen of all faiths) is growing. And again, because alcoholism is no respecter of persons, many in the ministry are recovered alcoholics.

Since the 1956 announcement of the American Medical Association that it considered alcoholism a disease, its Committee on Alcoholism has produced a steady flow of informative material on the subject for both the physician and the layman.

The following is a brief listing of conditions alcoholism and other drug abuse agencies hope to bring about in this country:

1. A citizenry whose basic attitude toward alcoholics and other drug addicts is not punitive but enlightened, who support treatment programs for addicts rather than incarceration.

2. Law enforcement officers who are seen as helpers of the alcoholic and drug addict while protecting the rights of all citizens.

3. Physicians and other professional people who find treatment of alcoholics and other drug abusers can be as psychologically fulfilling as the treatment of any other disease and who will use other helping agencies and people in a team approach or multi-disciplined approach to behavior alteration and recovery.

4. All general hospitals willing to accept the alcoholic and other drug abuser for detoxification with an established continuum of non-hospital treatment programs to assure maintenance of sobriety and to effect personality change.

5. Nurses and other hospital staffs equipped with knowledge of alcoholism and drug addiction so these patients are dealt with in the same professional manner as any other patient.

6. The clergy knowledgeable about the nature of addictive personalities and concurrent behavior patterns and willing to refer to community health agencies as needed.

7. Court officials who prefer to make use of community resources for treatment, whenever feasible, rather than incarceration.

8. Employers who protect their investment by early detection and treatment, thereby maintaining higher morale and lowered accident rate and personnel turnover.

9. All community social and health agencies working together to meet the often multiple needs of the alcoholic and drug addict, as well as those of their families.

10. Educators equipped to disseminate knowledge of the nature of addiction and a consensus of what constitutes effective treatment and rehabilitation.

REGULATED AND UNREGULATED DRUG USE— EFFECT UPON SCHOOL BUS DRIVERS AND PUPIL PASSENGERS

By P. H. KURTZ, M.D.

In our casual acceptance of drugs as a relief from disease or problems, we often fail to recognize that side effects of a drug may create a new set of problems. When the user is a school bus driver the hazard is compounded by the number of pupil passengers. When the user is a pupil, the hazard may arise from an unexpected quarter.

There are many definitions for the term "drug," but in general a drug can be thought of as a chemical substance which is administered to a person or an animal to prevent or cure a disease or otherwise enhance physical and mental welfare. Drugs and the use of drugs are not new phenomena, and indeed the ancients used various potions, concoctions, and poultices to aid in the care of the sick and afflicted. Man's perpetual search for ways and means of controlling his environment for his own benefit and well-being has not been limited to his external environment but to his internal environment as well. The search for cures for all diseased states has led to the development of many new and potent chemical substances which alter biological functioning.

Not all substances which have been administered to patients have proven to be beneficial, and some have shown a greater potential for harm than for good. A poison is defined as a substance that has an inherent tendency to destroy life or impair health. Substances which have no medicinal uses and have an inherent property to impair health or destroy life are not called drugs but are limited to the classification of poison; however, substances which have potential for benefit as well as a potential of harm are still called drugs. The relative toxicity of a drug or its benefit-to-risk ratio determines its use in the medical community. A drug may be more harmful than good, and these agents are generally not used therapeutically.

In the development of drugs for medicinal use, those agents which prove to be toxic or possess poisonous properties at relatively low doses are limited to distribution only under the supervision of a physician. Drugs which are effective at relatively low doses and do not become toxic until rather large doses are taken are generally available as "over-the-counter" medications which can be purchased without a prescription. The relative toxicity of a chemical substance is one of the determining factors in deciding whether or not a drug will be restricted or unrestricted in its availability to the general public.

The expression "the cure is worse than the disease" means that the disease symptoms are less disturbing than are the side effects or adverse effects of the drug that is given to cure that disease. The reason for employing such a cure is that the disease, if left unattended, would continue indefinitely, but through the administration of a relatively toxic drug the disease can be eliminated in a finite period of time and the person will then be cured. The benefit-to-risk ratio is considered prior to administering a drug. If a drug would result in the death of the patient before a cure could be effected, the benefit-to-risk ratio would not allow its clinical use.

What does all this have to do with the effect of drug use on school bus drivers and pupil passengers? School bus drivers and pupils are no more and no less susceptible to the

effects of drug use than any other group of individuals. What can be said about drug use in school bus drivers or their pupils can also be said about any other individual who is subject to the use of drugs. The problem in school bus drivers is one of benefit-to-risk and hazard-to-risk ratios. Passengers in a public conveyance are dependent upon the operator for their safety and well-being. If the driver of a bus is moderately incapacitated, the risk of injury is not only to himself but to all those who are dependent on him. Although the increased probability of an accident occuring is the same for the bus driver as it is for any other driver on the road who is under the influence of drugs, the consequences are greater when the number of persons in a single conveyance is used as the multiplying factor in determining the total risk involved.

Although the general population has an awareness of drugs and their use and side effects, many individuals ignore the warnings placed on labels as incidental occurrences directed only toward susceptible individuals and consider that the vast majority of people will not be susceptible to side effects and do not need to heed the warnings. These same individuals believe, however, that they will be benefited from the drug just as everyone else. This is unrealistic. As previously discussed, drugs have specific properties, and if a person is susceptible to the action of a particular drug, he will acquire the non-therapeutic as well as the therapeutic results of that action. The individual who is not liable to suffer the side effects or adverse effects from a drug is also equally not liable to gain any benefit from that drug. Awareness of these facts must be given to persons in occupations where their performance or lack of it may be responsible for the outcome of events for numerous people. The message is this: Anyone who can benefit from a drug action is equally liable to the side effects or adverse reactions to that drug. No therapeutically-active drug is devoid of toxicity.

What are the hazards involved with drug use as they relate to drivers and pupils on a school bus? The individual whose health has been adversely affected by disease to the point where he must seek medical attention for his symptoms is probably incapacitated enough by those symptoms alone to prevent him from functioning in his full capacity. The same may be true for the individual who knows the cause of his symptoms and purchases an over-the-counter medication to relieve his symptoms. While drugs may reduce the symptoms the patient experiences, they do not always relieve all of the effects of the illness as they relate to the individual's functional capacity. Under the influence of a drug, the individual may not be able to recognize his reduced capabilities. This inability to recognize a remaining deficit is part of the therapeutic response but may contribute to the hazard of drug use as it relates to driving. The individual's judgment may be accurate based on what he feels; however, his lack of awareness of a reduced capacity results in a wrong conclusion. This is different than the intoxicated individual who may realize he has a deficit and then exercises poor judgment.

To review some of the seemingly innocent and non-toxic preparations available to individuals who take medications either through prescription or over-the-counter, first, the remedies for the common cold, which are numerous. Generally, these agents contain antihistamines, decongestants, analgesics, and similar therapeutically active ingredients; ingredients which also cause various degrees of drowiness, dizziness, feelings of fatigue, impairment of attention and ability to concentrate, feelings of restlessness, and occasionally an excessive feeling of well-being. They may also result in blurring of vision due to altered pupillary responses or disturbed color perception. Some agents have resulted in tremor or reduced coordination. These drug effects are present to some degree in all individuals who take these agents. Individuals who experience any of these effects must be made aware of the hazards that they cause to their driving and must refrain from driving while these effects are present. Cough suppressants frequently contain substances which result in drowsiness. Drivers and pupils who ride a bus while under the influence of these drugs may create a hazard in that lack of coordination, and inattention, may result in accident proneness. Extra care must be exercised.

Next, antibiotics are frequently used to

treat minor infections, and the individual is allowed to carry on business as usual while he is taking these drugs. Antibiotics have been known to cause acute allergic responses; however, these generally occur within a short time after receiving the drug and usually the physician is available to treat such reactions. Antibiotics, however, can cause delayed reactions or responses such as photophobia, where bright light hurts the eyes. Skin reactions may occur when the skin is exposed to the sun while a person is taking an antibiotic. Night blindness, or temporary blindness due to bright lights in a dark environment, may also exist. Depending on the infection that the individual has, antibiotics have resulted in the release of toxins from the bacterial organisms as they are destroyed, creating feelings of dizziness, fatigue, ringing in the ears, and similar symptoms which may cause a disturbance in attention and an inability to concentrate.

Eye drops taken for fatigue or burning of the eyes may result in a pupillary reaction causing a blurring of vision.

There is a large number of drugs available to treat common everyday tensions. These tranquilizers or stimulants are designed to alter mental functioning. The individual under their influence may be limited in his ability to function adequately in all situations. Side effects of these agents include: depression, personality changes, anxiety, delirium, mental confusion, tremor, excessive feelings of well-being, as well as drowiness, dizziness, or restlessness. The tensions which lead the individual to use these medications may be enough in and of themselves to create a hazard for this individual to function in his usual capacity. Taken prudently, the mood-altering drugs may result in a temporary relief of symptoms allowing the individual to function; however, if side effects are also present, these individuals should refrain from driving. Individuals who find they must continuously rely upon mood-altering drugs to function should not be entrusted with the safety of other individuals and should be encouraged to seek a less tension-producing occupation.

The therapy of specific disease states such as diabetes, high blood pressure, seizure disorders, asthma and allergic conditions, and the like have their hazards; however, these diseases themselves possess significant hazard and this must also be considered when evaluating an individual for an occupation which requires responsibility for the well-being of others. Drivers should be aware of pupils who may be riding on a school bus who may have special medical problems which may result in the display of abnormal behavior while on the bus. Drivers should be given advanced warning and advised by the parents involved of the proper action to be taken if an abnormal situation should occur. The excitement created by one of these situations occurring without warning on a bus that is in motion may create a hazard to the safe operation of that vehicle.

Drug use is not an absolute contraindication to driving, but the use of drugs can produce a relative contraindication and a physician should be consulted to provide adequate guidance for the use of drugs by persons involved in common carrier transportation. Aviation has given much attention to the hazards of drug use in fliers and flight crew members. Drug use in flight crew members is subject to approval of a specialist in flight medicine. It has, however, been estimated that the average risk in traveling over a given distance is six times greater for driving than for flying. A specialist who is aware of the occupational involvements of the individual who is driving a school bus should also be consulted in all matters concerning the health of these individuals. The patient who seeks care through his private physician should present the medications and diagnosis to the specialist, who will then offer his advice as to the relative and absolute contraindications to driving. Such a specialist should be continuously available to all occupational groups where this segment of activity may be of vital importance to the welfare and well-being of dependent individuals.

One other area of significance which deserves some special comment in view of current public awareness is that of drug abuse. Alcoholism has been dealt with on a large scale and its hazards and its significant effects have been extensively studied and discussed. The use of drugs for other than medicinal

reasons has been in existence for perhaps as long as drugs themselves. The relative hazards, however, have increased over time to the point where current usage of drugs for other than medicinal reasons may now be considered as a general hazard to the public welfare. Whether an individual actively participates or not, he may indirectly be affected.

The term "drug abuse" is a misnomer. Drugs are not abused nor do they cause abuse. The individual who uses drugs for other than medicinal reasons is participating in a form of self-abuse through the use of drugs. Some of the chemical agents taken by drug users are indeed not drugs at all but fall into the category defined earlier as poisons. Most of the hallucinogenic substances in common use have no ability to alleviate illness or to create enhanced physical or mental health; indeed, their inherent property is one that destroys life or impairs physical and/or mental functioning. Since agents which possess no true beneficial effects and produce toxicity are known as poisons, these chemicals should properly be placed into this category. A chemical substance does not need to be universally fatal before it is considered a poison.

The hazards inherent in the non-medicinal use of drugs as a form of self-abuse are quite similar to the hazards involved with the excessive intake of alcohol. Drugs, like alcohol, can be taken for their intoxicating effect rather than any ability to return a diseased individual to a state of normal function. The external signs of a person who is under the influence of drugs are more subtle and harder to detect than are the signs and symptoms of alcoholism. The person who is under the influence of alcohol has the distinct odor characteristic of alcohol ingestion. There is no such characteristic odor present when the individual is under the influence of a drug. The response to the drug may be similar to normal states that can result from fatigue or from emotional encounters in everyday life. To accuse an individual who is tired or irritable or who seems to have a temporary loss of coordination of using a drug is not a rational response, since it would be extremely difficult to absolutely substantiate this.

Just as there is no room for an alcoholic to be involved in an occupation such as driving a school bus, there is no room for the individual who is habituated to drug use to participate in this activity, either. The hazards of drugs are greater than the hazards of alcohol when certain facts are considered. There are cases on record where an individual has taken a single dose of a hallucinogenic drug, such as LSD, and as much as a year later has had a "flashback" where, without warning, the person begins to hallucinate or has an altered perception of his environment, and accidents have resulted. Any individual who has a history of having taken one of these drugs would thereby be disqualified from employment as a driver of a common carrier. These individuals still constitute a hazard to driving by their presence on the roadway, even though they are not directly driving for a group of individuals.

Individuals who are habituated to stimulants are actually in a state of intoxication while under the influence of these drugs. They also suffer the symptoms characteristic of "hangover" as the acute drug effects wear off. There may also be an effect known as "rebound" where the patient experiences an acute depression following withdrawal of medication. This depression state is what frequently is blamed for the individual then returning to the use of stimulants to overcome the accentuated feeling of depression which follows drug withdrawal.

Sedatives and hypnotics, such as sleeping medications that individuals so frequently take, produce drowiness, fatigue, jitteriness, and an inability to concentrate. Even the occasional user of sleeping medication may constitute a hazard to driving the following day inasmuch as these drugs have an effect which lasts up to 14 hours, and even after this effect has worn off the phenomenon of hangover may persist for as long as 48 hours, causing some diminution of normal capacity.

The current use of drugs for non-medicinal reasons is a major problem among the young, as evidenced by current research. The student who rides on a school bus who is suffering from the after-effects or acute effects of drug influence may have feelings of persecution or paranoia. He may have hallucinations or he may have blocks where he does not hear or see things that are present in his environment. In such a state, he constitutes a hazard to the safety of himself and others around him. Although acts of violence are not characteristic of individuals who are under the influence of drugs, these individuals may become violent if they wrongly interpret things that are said or things that are present in their environment, and their actions could create the potential for an accident. Such an individual may act irrationally in that he may try to leave a moving vehicle or he may step in front of a vehicle that is in motion. The unpredictability of behavior while a person is under the influence of drugs is the main hazard of this individual and to others around him. These individuals do not have the total control of their actions in terms of their ability to rationalize and to act according to the true signals of their environment.

The chance of coming into contact with someone who is under the influence of drugs has been greatly increased due to the common use of drugs in society and especially for the school bus driver who is in contact with young, inquisitive individuals who truly do not seek any harm but are curious and are tempted to try to experiment with their environment. The driver must be alert for the possibility of the occurrence of unusually abnormal or irrational behavior and must be prepared to handle the situation to avoid accidents.

In review, some of the things that have been covered are why drug use can be dangerous, some of the more obvious examples of drug effects, the reason why each individual who takes a drug is susceptible to side effects and adverse reactions, and the use of drugs and poisons for other than medicinal reasons. Proper education of all individuals involved in common carrier transportation must be accomplished so that each individual realizes his own susceptibilities and limitations. There will always be those who ignore or don't believe even though all evidence is in favor. Hopefully, with adequate emphasis, the problem will not be allowed to grow into one of major proportions.

Drivers should be encouraged to ask their physicians specifically of hazards of medications prescribed for them and how they may affect their driving capabilities. The busy practitioner may not always have time to discuss all aspects of therapy which he prescribes for his patient. Drivers who are taking drugs, whether by prescription or "over-the-counter" purchase, must be properly educated to be alert for the possibility of the occurrence of symptoms they may experience and should consult an occupational specialist on each occasion where health matters are involved. The physician may advise against driving when the patient feels he is able to. The physician's advice should be followed. When the physician advises of the possibility of, rather than the absolute contraindications to driving, the patient should be given an opportunity to refrain from driving when he is taking these drugs. Policies should be set that conform to these principles, and substitute drivers should be available so that no individual is pressured into performing his occupational duties when his functioning may be impaired. Additional allowances must be made for the non-availability of drivers who, although physically able to work, may represent an unnecessary risk if allowed to carry on their usual activities.

Transit Sessions

TRANSIT SECTION COMMITTEE REPORT

By FRANK A. JOHNSON
Supt., Training, Accident Studies, & Employment, Chicago Transit Authority, Chicago, Ill.

I was pleased that we had good representation at the meeting despite the fact that transit continues to be hit by financial problems and cutbacks in budgets. I think it is a tribute to the National Safety Council that transit managers are willing to invest a portion of their meager resources in the activities of the Council.

Each year the transit section sets ambitious goals for themselves. And each year some of them are met, some are approached and, for some, we are considerably wide of the mark. This year was no exception. We met some and we blew some.

Our main goal each year is to have an interesting and beneficial program for the Congress. Our program chairman has put together a program that will meet our objective.

Another major goal is increasing our membership. We can report only that we have maintained our membership level despite the fact that mergers and abandonments have reduced the numbers of transit operators across the country. Holding your own is not too bad a record in view of the circumstances.

Our nominating committee has offered a slate of officers which he feels will carry on the work of the transit section with enthusiasm and dedication. The Hospitality Committee continues to look after the well being of our members while they are at the Congress.

The chairman of the Fleet and Employee Contest has attempted to standardize reporting systems and to encourage greater participation in the National Safety Council safety contests.

The Newsletter Committee provided articles of considerable interest for the Newsletter.

The Rapid Transit Committee gathered information and distributed reports relating to public and employee accident experience for the various systems operating rapid transit systems. The Accident Review Committee had an easy year. The staff managed to resolve all problems and committee action was not required.

The Government Regulations Committee kept up to date on all pending regulations concerning transit safety. These governmental regulations can have great impact on our industry and we are joining with the American Transit Association to study them.

The Projects and Research Committee has reviewed and rewritten Fleet Safety Memo 18, "A Guide for Investigating Motor Vehicle Fleet Accidents." As written, it covered truck operation and was of limited value to bus operation. It will now be turned over to the staff for editing and implementation.

SAFETY STARTS AT THE TOP

By F. NORMAN HILL
General Manager, San Antonio Transit System, San Antonio, Texas

When the Board of Trustees of the San Antonio Transit System took over the responsibilities of providing the mass urban transit services for the City of San Antonio, the city acquired a good basic transit operation with a good safety record, but one which had never received top recognition for excellence in safety performance in the American Transit Association's annual safety award competition.

The Board of Trustees of the newly created San Antonio Transit System, consisting of four prominent businessmen and the mayor of San Antonio as an ex-officio member, immediately took a keen and active interest in every facet of the system's operations, with the goal of making it one of the most outstanding in the country.

The transit board, to the man, took a special interest in the area of safety. Their concern was not only for the safety and welfare of their employees, but was also for the safety and welfare of their bus patrons and for other users of the streets, both pedestrians and vehicles.

In the Board's emphasis on the achievement of excellence in safety performance, the director of personnel and safety was given broadened authority to proceed under the direction of the general manager to re-structure the already basically good safety program into a stronger and more effective one. The plan began to unfold with real stimulation and interest being generated right at the very top by the trustees, thence through the general manager, the assistant general manager, and the director of personnel and safety down into the operations and maintenance departments, and so on down through the ranks. Without question this exhibition of continuous interest "from the top" created an incentive and high morale, both basic to a sound safety program. The enthusiasm spread from the top down through the various levels of the management organization, ultimately reaching each and every employee of the system.

The newly structured safety program began by reviewing and re-evaluating all driving performance results of bus operators and all work performance results of maintenance personnel. The new interest in safety was made known to all employees through a series of safety posters, through the system's new house publication "The Road Runner," through a series of safety meetings with employees, and by daily stimulus from supervisory personnel.

The Transit Casualty Company of St. Louis, Missouri was selected as the insurance carrier for the system. Transit Casualty, in the system's formative years, made available on numerous occasions their field safety engineers who gave freely of their time and wealth of experience in the safety field, not only to management in helping them smooth out rough edges of its safety plan, but also making available on several occasions the Transit Casualty safety training bus. All operators, in organized groups, had the opportunity of going through the safety bus, working with the special safety equipment in the bus, testing and measuring their driving reflexes and abilities.

This special safety training bus was made available also by Transit Casualty for special safety promotions such as being parked in a prominent and busy area in the downtown business district, hosted by attractively costumed young ladies who invited the general public to pass through the vehicle taking, if they desired, the various tests of driving skills. The same display and opportunity was afforded the city's junior and senior high schools. Excellent newspaper and TV coverage made the general public cognizant of the new all-out safety effort by the system, all of which you can be sure had its good effects on our bus drivers in making them all the more conscious of trying to do a good and safe job

of driving and handling their customers.

Safety and training films were used periodically in connection with the safety program for both bus operators and maintenance employees.

Our employee recognition program for safety achievement and improvement was upgraded and expanded. The basic control of this program is in the maintenance of a grading record for each individual bus operator, broken down into five main categories. These records are reviewed yearly by the manager of operations, the superintendent of transportation, and the director of safety. Should an operator receive a rating of "Excellent" in at least two of the five categories, he is presented a letter of commendation from the superintendent of transportation, and the manager of operations, countersigned by the general manager and the assistant general manager.

These letters have proved to be very meaningful to our operators, especially to those who strive for excellence. However, should an operator's record be too far below standard, he may be subject to discharge, but is usually counseled and improvement is noted.

An attractive billfold size card or certificate of merit is also prepared annually for each operator having at least one year's safe operation without a chargeable accident. These certificates indicate also the total number of years an operator has performed without a chargeable accident. Operators were given credit for safe driving years with the old company, and we find many today with 15 or more years of safe driving. These cards are signed by the director of personnel and safety, the superintendent of transportation, and are countersigned by the assistant general manager and the general manager. A similar card for maintenance personnel is signed by the superintendent of maintenance, the assistant general manager, and the general manager. We find that our employees are proud of these cards, and that they carry them in their billfolds all the time.

In our efforts to generate maximum enthusiasm, interest, and support for the new safety program, two safety teams consisting of 10 bus operators each were selected by the director of personnel and safety and the chairman of the safety committee to meet monthly with management people for review or safety results and for discussion of ways and means of doing a better job of rendering safe transportation service in the community. The two teams created originally were of a permanent character, but in time we found that we could stimulate an even greater interest and develop more fully the very essential ingredient, "High Morale," by changing the make-up of these teams on a rotating basis so that eventually each operator would have the opportunity of being an active member of these teams. This concept has proved much more successful in maintaining interest and morale and particularly in total achievement of a good safety record.

The men are very much interested in how well they are doing toward bettering their own safety performance and how well they compare with the performance of other bus operators throughout the country. The competition as first set up between the two divisions of operators on a monthly basis recognized the winners with a donut and coffee party—subsequently this was changed to apply to the entire bus operators group as a whole—on the basis of bettering the system safety results each month over the same month a year ago. An improvement formula for such result was conceived; it is, simply: A five per cent betterment in total operating accidents reported, when compared with the same month last year.

The men thoroughly enjoy their indulgence in donuts and coffee when they succeed in beating the "magic number" for the month. They get a big kick out of this, especially when the chairman of the board arrives at 5:00 a.m. to aid with the serving of from 70 to 80 dozen donuts and many gallons of coffee. This poses somewhat of a burden, but is nevertheless a gratifying experience to management.

Even more popular than the coffee and donut treat is the safety award recognition banquet for the men and their wives upon winning national honors.

We all have been most pleased, and have continually been surprised with our overall results. Bear in mind, the system in the some

49 years of transit operations in San Antonio had never won any of the top safety awards presented by the American Transit Association.

When the system was notified that for the year 1960 it was to receive for the first time the runner-up award in the ATA safety award presentation in the 500,000 to one million population category, we believed we were on the right road. This was most encouraging, because we felt that all the efforts we had been putting forth were really starting to produce. This award was ATA's special citation in recognition of achievement and outstanding improvement during the year in traffic and passenger safety among transit companies of the United States and Canada. Then in 1962, for the first time in its history, the system was awarded ATA's top safety award, the silver plaque, for improvement and excellence in safety. This was repeated in 1963 and again in the years 1964, 1966, and 1967.

Overall, in the past eleven years of operation the system has won four citations for outstanding improvement in safety performance and five top awards for the safest performance in the industry in its population category.

It would be interesting statistically to cite ofor you the improvement in the two principal categories of measuring safety performance recognized under the ATA safety award program, namely, passenger accidents per million passengers carried and vehicle accidents per million miles operated. Statistics for the year 1959 before the system's new safety program became effective showed 12.1 passenger accidents per million passengers carried and 67.8 vehicle accidents per million miles operated. When the first citation for improvement was awarded for results achieved in the year 1960, these statistics had been improved to 10.8 and 58.4, respectively. When the system won its first industry top award in safety, ATA's silver plaque, for the year 1962, these statistics had been further improved to 5.1 and 41.4. Current results show still further betterment down to 4.5 and 39.8.

The results speak for themselves. Obviously, this safety program has been productive. We expect it to continue to be so as long as we are able to maintain the continued interest of top management, department heads, and the safety and training supervisory personnel—and as long as our employees continue to have the same strong determination to make our operation as nearly perfect accident-wise as possible.

Not only has teamwork throughout the organization been of key importance to the success of this program, but also the system has prevailed upon the City of San Antonio to improve street conditions for transit operation. The city has cooperated in eliminating, wherever possible, blind corners, overhanging canopies, and other street hazards, including the rounding off or cutting back of sharp, angular curbing. The police and traffic departments of the city have been extremely cooperative, recognizing that each 45-passenger transit vehicle with a seated load eliminates an equivalent of 36 automobiles per block from our ever-increasing traffic congestion—and that this in turn contributes materially to the general safety of other users of the streets, including pedestrians, let alone our transit patrons.

Meanwhile, the system, after careful study of possible route combinations and possible re-routing, eliminated some 225,000 bus turning movements annually at busy intersections in the central business district, thereby very materially relieving congestion and enhancing safety and speed of schedule operation. Subsequent changes have brought this figure well above the 300,000 mark annually.

Proper and carefully selected equipment and tools and their handling are important in obtaining good safety results, and so it was significant that the design and ease of maintenance from the safety standpoint of the transit vehicles purchased was given special attention. The Board of Trustees unanimously approved management's first vehicle specifications for the ultimate in bus design, not only from the standpoint of a vehicle that offered good merchandising possibilities but, very importantly, from the standpoint of a vehicle that afforded maximum comfort and safety to patrons and operators. Particular stress was placed on purchasing buses having large curved windshields, free from the clut-

ter of exposed windshield wiper mechanisms and unnecessarily wide glass divider strips and corner posts, so as to afford the operator the maximum possible visibility in all forward directions, especially the area immediately in front of the vehicle. Those of you who have been in the transit business for some time will recall that San Antonio, some years ago, was given credit by the industry for designing and developing in conjunction with a bus manufacturer, the so-called "San Antonio front end," which featured a windshield offering much greater visibility for the operator than any bus windshield then on the market. The interest of top management then provided the motivation to come up with a much advanced front end design that would permit bus operators to see children and people of small stature directly in front of the vehicle, and this same insistence of today's management demands even greater visibility. This is of special importance in San Antonio because of so many people of small stature, primarily among our Mexican-American population who, incidentally are our best patrons and who comprise a large segment of our work force. Over 50 per cent of our bus operators are of Mexican-American background, and they do a very fine job for us.

This program of striving for the continued improvement of our safety performance goes on daily, with the driver instructors and safety supervisors consistently and continually working with the men, checking their performance and encouraging them in every way to strive further to do a safe job, thus assuring the general community, the pedestrian public and the other operators of vehicles on the streets, arterials, and expressways in San Antonio that a first-class, safely operated transit vehicle, manned by a carefully selected, trained, and courteous operator, is contributing materially to the prevention of accidents and injuries in the San Antonio metropolitan area.

Top management continues its research and development efforts for even better and safer vehicle features and design. New safety requirements of the Department of Transportation, as well as any new safety requirements of the city, the county, and the state are evaluated and adapted into the safety program. Management continues its interest and participation in selected safety research projects carried on by the world famous Southwest Research Institute, located in San Antonio. Our employee recognition program, so important to good morale, is being improved once again. Just this year, we incorporated our new system logo into new tie tack and lapel pin awards for 3, 5, 10 and 20 years of safe driving.

You can readily see that in the case history of the San Antonio Transit System, safety truly starts at the top with the enthusiasm and interest generated at the top level being carried down through the entire organization to every employee. We are confident that the success of this program is clearly revealed in the outstanding safety achievements for which the system has been recognized these past eleven years—and from an economic viewpoint, this continued success made it possible for us, in 1967, to become self-insured.

The ingredients of our success might be simply stated as the preparation of a good, interesting, and workable plan, and the development of high morale and enthusiasm among employees by giving them inspiration continually from top management, counseling them concerning safety problems, and appropriately recognizing them for their outstanding achievements and a safe job well done.

SELECTING SAFE DRIVERS

By PHILIP ASH, Ph. D.
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The first and most general level at which selection of drivers can take place is at the level of state licensing of vehicle operators. Within this level are both the amateur (most of us, who cause most accidents) and the various professionals: taxi drivers, truck, bus, and related vehicle operators. Screening at the state level might, were it possible, have the greatest impact, if substantial numbers of people were denied the right to drive.

The second level is that of insurance. Several companies have attempted to restrict their losses by refusing insurance to "poor" drivers, or at least by raising the rates they charge "poor" drivers. Selection at this level, unfortunately, makes very little difference to accident rates! The uninsured still drive and their victims just suffer the more.

Third is the level of employment, by businesses and organizations that hire drivers. At this level selection *might* make a difference, particularly for operators of vehicles—such as buses or ambulances or taxis—that carry passengers.

I intend, however, to concentrate at the most general level first, and then to make a few remarks concerning application of the findings there to occupational or fleet driving.

In the almost exactly six decades since the establishment of the National Safety Council and the pioneer work of Hugo Munsterberg in traffic accident prevention, the combined results of our efforts have not reduced very much our need for divine intervention.

While my assignment is the selection of safe drivers, let me put that approach into context. There are at least three points of attack on the incidence of accidents: the man, the machine, and the environment within which the two operate. The man—that putative safe or unsafe driver—has been the most recalcitrant to modification or change. You may recall the sage observation of the comic strip character, Pogo, in a moment of crisis: "We has met the enemy, and he is us." As for the second, the machine, so long as it is under the control of a man, without fail-safe devices or automatic override of the operator's movements, there is no cause for optimism that significant reduction in accident rates can be accomplished. The injuries consequent upon accidents may be reduced in severity, but the accident rate remains unaffected. It seems to me that only when we are prepared to modify the environment, and impose constraints upon the whole man-machine-environment system, will visible progress be made.

But let us return to the driver himself: What do we know about him that could aid us in separating the accident-prone from the accident-free?

First and foremost, accident involvement is not a highly stable characteristic of individual drivers. The literature is replete with data that underscore this observation. Let us look just at one recently-completed study. An analysis of more than two million North Carolina drivers' records has led to the conclusion that, contrary to current opinion, there is little relationship between crashes and past violations history. The analysis, conducted by B. J. Campbell, Director of the Highway Safety Research Center at the University of North Carolina, found that 80.7 per cent of North Carolina drivers who had crashes in a two-year period do not have crashes in the next two-year period. In any given year in North Carolina about 200,000 drivers are involved in accidents. This is approximately seven per cent of all drivers in the North Carolina driving population. If the same per cent caused the accidents year in and year out, the state could do something about it. On the other hand, if an entirely different seven per cent of the drivers have an accident each year, then the state would be relatively helpless in identifying those who may have future accidents.

This is, in fact, not the case. Under 20 per cent of those who have accidents in the first period also have one in the second. The study of drivers in North Carolina shows approximately the same situation regarding past traffic law violations and their predictive value in determining who will have accidents. Persons with records of traffic law violations during the two-year period were involved in more accidents during the next two years than persons who had no record at all, but these violations are so few that they account for only a small part of overall accidents. Dr. Campbell concluded that if you took all drivers with three or more violations in the past two years off the highway and kept them off 100 per cent effectively for two whole years, North Carolina would still experience 96.2 per cent of the accidents it had anyway. Moreover, of the drivers removed from the highway, 71 per cent would not have been involved in an accident.

An important exception is the case of drunken drivers. Persons with a history of drunken driving during the previous two-year period were involved in more accidents than the average during the next two years. This tends to point out that the habitual drunken driver may have a propensity toward accidents.

Overall, then, accident repeaters account for only a small portion of the total traffic accident problem. The best available data indicate that less than four per cent of the accidents in a three-year period involved repeaters from the prior three-year period. These results are neither the most recent, the oldest, nor the most comprehensive. In 1939 T. W. Forbes reported 1931-1936 data from Connecticut which is quite similar to the North Carolina data. He showed that if persons with two or more accidents in three years were removed from the road for the next three years, then during those next three years 96.3 per cent of the accidents would happen anyway, simply because they would be sustained by other drivers.

The most recent and most comprehensive article on the subject is by Peck, McBride, and Coppin.* They concluded that ". . . It is unrealistic to expect that programs oriented toward reducing accidents by focusing on the accident repeater can effect a large reduction in the total accident."

Second, it follows that accident involvement of individuals is not highly predictable from measurements of stable human characteristics, regardless of the individual variables involved, whether they be physiological, or whatever, and regardless of the combination of variables used as predictors.

Furthermore, as bio-data analysis of employment applicants has indicated, even if a few stable relationships are identified, they may not be useful. In one industrial study, it was found that unmarried, inexperienced, recent high school graduates, Black or Spanish-speaking, were poor employment risks. Eliminating these applicants, however, would be illegal, and would reduce the labor supply to a ridiculously small number of eligibles.

In driving, the evidence is highly consistent with respect to age in that drivers below approximately 25 and above approximately 65, are involved in a disproportionate number of accidents, but there are severe limits to the restrictions that can be imposed on the basis of age.

Third, of the many variables studied with respect to their involvement in accidents, the psycho-physical or sensory variables, such as visual acuity, depth perception, the phorias, auditory acuity, reaction time, etc., appear to be slightly, if at all, related to accident involvement. Simulator studies, where perceptual-motor characteristics may be most closely monitored, have in particular shed light on this issue.

An American Institute for Research Study on these points is particularly enlightening. Observations were made on 304 taxi drivers, unknown to them, during a ride through traffic while their performance on specific driving behaviors was recorded. The same drivers later performed in two training simulators, the Allstate Good Driver Trainer and the Aetna Drivotron. Scores of their "driving" performance, errors, "accidents," and other indices were recorded. These subjects also took a battery of perceptual-motor ability tests. For criteria, accident and

*Accident Analysis and Prevention, 1971, Vol. 2, No. 4, p. 243-299

traffic violation history over the past five years was obtained. Seven main conclusions were supported by this research.

To begin with, none of the scores from either of the two driver trainers were correlated with any of the actual driving performance measures. Therefore, it was not possible to evaluate specific components of driving behavior as measured by the simulator. While this could reflect inadequacies in the actual driving measures, other evidence also called into question the generality of the simulator measures.

While there were a large number of negative findings, a few specific positive findings were made. The checklist methods of on-the-street driving behavior developed in previous studies, using motion picture techniques, were shown to be feasible for use in direct observation by car passengers. There is, however, a need for better determination of ride-reride reliability of specific and total errors recorded under these conditions. Among other specific data presented were comparisons of types of driving errors made by taxi and other drivers and the interrelations among different types of driving errors. For example, "changing lanes without a signal" is among the most frequent errors by both taxi drivers and other drivers. However, taxi drivers disregard signal devices much more frequently than do other drivers.

Again, from the internal relations obtained on each simulator, it was possible to show what component scores contribute to total scores on the simulator. For example, on both simulators, "brake" and "speed" are more important in determining individual differences in overall performance than are other component scores. However, a negative finding was the lack of relationships between scores designed to measure the "same" functions (e.g. "braking" errors) on each of the two simulators. This raises several questions about the generality of measures provided by each simulator. This finding is underscored by the lack of positive transfer effects demonstrated from one trainer to the other, although a few selected components showed some transfer.

Furthermore, scores on tests of coordination, reaction time, and timing tests did significantly predict selected simulator component scores Perceptual-motor ability tests, however, were not useful in predicting on-the-street driving performance.

In regard to demographic factors, performance on both simulators was positively related to age and driving experience, which were the most consistent predictors of performance on both simulators. Race and annual driving mileage were unrelated to simulator performance.

Of special interest were the relations among simulator, perceptual-motor test, and on-the-street measures with the officially recorded accident and traffic violation history of these drivers over a five year period. While this analysis pointed up some relations among different types of violations, only low correlations were found with the experimental variables. However, significant predictions of certain classes of traffic violations were achieved by the "on-the-street observation" made in the check ride during the study. Low but significant correlations were found between "collision" violations and the drivers' reaction time test scores.

Finally, the failure of the simulators to relate to driving performance does not necessarily rule out their use as training devices. The results of this study bear mostly on exposing experienced drivers in a single laboratory session to a series of simulated driving sequences. In this situation their performance in the simulator was not related to measures of on-the-street driving behavior.

The simulator results of this study, by the way, were not unusual. Approximately 35 published studies in the area of driving simulation have appeared since Munsterberg's work in the early 1900's. Of these, only two recent investigations empirically related simulated driving behavior to real world driving behavior. One investigation comparing road and simulated driving performance showed no relationship; further, as the study I cited first showed, there was a nonsignificant relationship between driver performance on various simulators supposedly measuring the same behavior. Still, investigators continue to study the effects of

alcohol and more recently of marijuana with so-called driving simulators. One wonders how much acceptance this research would obtain if more appropriately titled "The Effect of Marijuana Upon a Task Superficially Resembling Automobile Driving."

Before leaving the simulator, I would like to comment on the use of the simulator in retraining problem drivers. Dr. H. Schuster, of Iowa State University, reported on just such a study at the 1971 APA convention. The validity and reliability of a driving simulator (the Link Group Model No. SS-612) in retraining problem drivers were investigated in several experimental studies. The effects of simulator practice and a distractor stressor were used to evaluate concurrent or internal validity; predictive validity will be obtained from follow-up records of driver behavior. Reliability figures for the simulator error performance criteria were estimated from stability coefficients over successive film showings. The studies were repeated in part with young, but experienced and average, college student drivers for comparison data. No follow-up data are available yet to test the validity of the simulator in helping experienced drivers improve their actual driving performance. However, no improvement in simulator driving performance was shown for experienced drivers. Consequently, the validity of the simulator for this purpose is suspect and apparently zero. Most simulator performance criteria were at least n irginally reliable, but also need improvement.

Fourth, the evidence seems rather clear that alcohol is involved in something like 25 to 50 per cent of fatal accidents on the part of drivers and/or pedestrians. In the North Carolina Study cited above, drivers with a history of drunken driving during a two-year period were found to be involved in more accidents during the succeeding two years than were the average drivers. I do not believe, however, that alcoholism is a useful characteristic for the selection of drivers at the most general level—i.e., licensing. Except for the most far-gone derelicts, most alcoholics are in fact reasonably sober most of the time, and the driver who has an accident while drunk may get drunk only once in a while. He may not even drink at all most of the time. It is beyond my mandate to deal with the drunk driver, but I do not believe that an occasional "ender" would constitute an acceptable basis for denying licensure.

Let me bring this topic to a conclusion of sorts by first suggesting that, for the man himself, we must contend with the fact that safety itself—even self-preservation— is not a highly central need. If this thesis has merit, then we must conclude that, at some level, rather than avoiding danger, we seek it out.

How do these findings relate to insurance or occupational driver selection? In my judgment, what we face is a base-rate problem, contaminated by self-selection.

The first point to note is that a great deal of self-selection occurs in occupational driving. The older person who has worked in other jobs is not likely to apply as a bus driver when he is 55 or 60. The youngest group is not yet ready to go to work. This self-selection automatically eliminates some high-risk groups.

As for the base rate, if there is a characteristic that applies to some drivers with poor records and fewer drivers with good records, even though the overall relationship between the characteristic and safety record is low, if you can afford the luxury of hiring only the top few per cent of those scoring on the "good" direction, you can improve your experience, even if only by a little. Concretely, if you do not hire anyone with one or more accidents in the past few years, you should cut your accident rate by about four per cent. Based upon the North Carolina data, this implies a rejection rate of about 16 per cent, on accident history alone. If you add age constraints (under 25 and over 45) your rejection rate probably has to climb to 50 per cent.

In my present judgment, the best single predictor of future accident likelihood is a road test of driving habits. The United States Civil Service Commission Test 347, a driving behavior checklist, has demonstrated good capacity to reduce accident incidence by selection only of those who did well on the test.

A few studies, particularly by Professor Ghiselli of the University of California at Berkeley, have suggested that a paper and pencil battery might select relatively safer taxicab drivers, if a rather low selection rate (well under 50 per cent) is used.

An admitted history of heavy drinking (if selection were limited to teetotalers we might have no bus, truck, or taxi drivers) might also reduce accident rates among professional drivers, although I know of no good data showing much of a relationship between drink-induced accidents on the job and drink-induced accidents off the job. As a matter-of-fact, the correlation between on-the-job and off-the-job accident rates are uniformly low and usually insignificant.

A large number of attempts have been made to predict accident likelihood on the basis of personal characteristics, particularly personality and attitude factors. The results have not been too impressive. Dr. Albert Malo, of Kemper Insurance, has designed a new test which is now indergoing validation against accident criteria. It includes three main parts:

A. The Driver Background Questionnaire, a 66-item multiple-choice instrument that requests information regarding habits, attitudes, health, human relations, money, family, home, interests, activities, education, concept of self, values, and work.

B. The Musser Hazard Expectancy Scale, a measure of the driver's concept of the hazards—environmental factors and other drivers— that he must be aware of in order to avoid having an accident.

C. The Kemper Attitude Inventory, a 200-item attitude scale that measures the extent to which an individual exhibits self-interest, hostility feelings, impatience, low social responsibility, rationalization, rigidity, impulsiveness, and feelings of superiority. The data on this approach are not yet in.

Now let me return briefly to the general driver selection problem. One major alternative—the only viable long-run alternative, it seems to me—is system modification.

The system modification I want to spend a few minutes on is PRT—Personal Rapid Transit. What follows is based on a research proposal by a colleague of mine at the University of Illinois at Chicago Circle Campus, Dr. Walldridge. A PRT system is a network of exclusive guideways, plus a fleet of small (two or four passenger) automatically controlled vehicles which move on the guideways, plus an automatic control sub-system. On route, the guideway vehicles have an essentially constant speed of 60 mph. A person wanting to travel on the network enters a vehicle at a station and specifies his destination by pushing a series of buttons. Computers then select his route so that the performance of the total system is optimized, insert the vehicle into the stream of other capsules in the guideway, control vehicle velocity, control vehicle switching, and insure successful merging at each intersection. Also, the computers will dispatch empty vehicles to those stations at which they are needed. As conditions change during transit, the computers continually adjust the routings so as to attain system optimality. A dual-mode system is a PRT system with a capacity for accommodating guideway-adapted private cars. These cars come under automatic control upon entering the guideway. A dual-mode system, therefore, could retain the privilege of private ownership and the illusion of driver control, without its hazards.

In Tomorrow's Transportation: New Systems for the Urban Future, a report by the Department of Housing and Urban Development, PRT construction is recommended as part of a program of transportation systems research, development, and demonstration. This HUD report is a summary of research on new systems of urban transportation carried out by HUD and its research contractors. Seven of their 18 final contract reports had some bearing on PRT systems. After an elaborate systems analysis, the General Research Corporation concluded that a large (over 750,000 population) city will have higher levels of total transportation system performance when equipped with PRT (or dual-mode) transit than it will have when any alternative policy is employed. The alternative policies considered were: no improvement in the transportation system; expanded freeways; expanded freeways and expanded rail rapid transit; expanded free-

ways and expanded rail rapid transit plus a feeder or a circulation system (GENIE or PERC); expanded freeways and expanded rail rapid transit plus a feeder or a circulation system plus various public transit speed increases. A very readable summary of the research in the HUD report can be found in the July 1969 Scientific American.

Given that PRT-equipped cities have high transportation system performance levels, are PRT systems technologically and economically feasible? Although there remain problems of reliability and safety to be solved, engineers generally agree that PRT systems are technologically feasible. In particular, such systems have been adjudged to be technologically feasible by the General Research Corporation, by the Stanford Research Institute, by the Cornell Aeronautical Laboratory, by the General Electric Company, and by the Project METRAN group at MIT. The economic feasibility of PRT systems is indicated by several studies. The Stanford Research Institute, for example, found that, by using PRT systems wherever appropriate instead of having a totally automobile-based society, the United States as a whole would save $19 billion a year (assuming 40 per cent of trips were taken on the PRT system; i.e., 40 per cent of all trips made in those areas with access to a PRT system). This $19 billion yearly saving is much larger than the amount (less than $700 million) required, according to SRI, for development of an operational PRT system.

More recently the decision of the Ford Motor Company to start developing the dual-mode approach with private capital and the announcement by the Aerospace Corporation that a relatively inexpensive PRT system can solve transportation problems in Southern California both attest to the practicality of the PRT idea. In brief, studies indicate that PRT (and dual-mode) systems are not only technologically feasible but, in many cases, can provide more effective transportation than can alternative systems and at less cost.

As a behavioral scientist, my interest in PRT arises not from technological considerations—not even from concern with mass transit problems—but because I believe that it is the essential shape of the only transport system that is likely to reduce accidents significantly.

In short, I believe that we should spend less time on trying to answer the question, "How can we select safe drivers?" and more time on the question, "How can we take the driver out of the driver's seat?"

SAFETY IN RAPID TRANSIT OPERATIONS

By E. CLIFFORD PENNEY
Director, Safety & Fire Prevention, Toronto Transit Commission, Toronto, Ontario, Canada

Rapid transit operations commenced in Toronto in 1954 with 4½ miles of subway and has since grown to 21 miles, with further additions in the construction stage.

The Transit Commission serves a population of two million in a metropolitan area of 240 square miles. Last year, some 160 million passengers were carried on the subway and an additional 350 million on the surface system, which is comprised of bus, street car, and trolley coach operations. Of the 102 surface routes, 85 make 108 connections with the subway.

Subway operations are not divorced from those on the surface in the sense that there are no separate and distinct operating divisions or depots, and it is not uncommon for some qualified operators to spend part of their working day in the subway and on the surface.

Only qualified surface operators are eligible for subway training, which requires a minimum of 72 hours of instruction in addition to the 160 hours of initial training devoted to qualifying as a bus driver.

The crew of a subway train consists of a motorman and a guard. The motorman on the outbound trip becomes the guard on the inbound trip, and vice versa. In brief, the motorman is the captain of the ship, so to speak, and is responsible for the safe operation of the train while the guard is responsible for the safe operation of the doors at station platforms and for the general safety of the passengers.

The guard uses a shrill, Boy Scout type whistle twice to signal when he is going to close the doors after he has visually checked the loading platform both ways to see that it is safe to do so.

An automatic electro-mechanical train dispatcher regulates the departure of trains from each of the four terminal stations.

Passenger accidents of the boarding, alighting, and onboard types per million passengers carried are substantially lower than on surface operations, notwithstanding the fact that one train will carry upwards of 2,000 people in rush hours and the mass movement of passengers on and off the trains is considerable at main transfer points.

The highest incidence of personal injury accidents takes place within the stations, where falls on stairs and on escalators predominate, and strange as it may seem, the number of falls on stairs are on a par with those on escalators.

This is difficult to explain, since the stairs have nonslip treads, are well lighted, have adequate handrails, and are dry and kept clean.

In an attempt to reduce falls on escalators, experiments have been made in such things as increased comb plate lighting, lighting under the moving treads, red plastic nosing strips on the comb plates, etc., with inconclusive results. However, positive results have, in my opinion, been achieved by increasing the speed of the escalators at certain locations in rush hours and installing an alarm system in the collectors' booths which indicates when an emergency stop button has been used or when an escalator has stopped because of a malfunction.

Recently, self-locking gates with warning signs were installed at the extreme ends of station platforms to make it more difficult for confused people to stray down to track level and place themselves in a very hazardous position.

The numbers of people who attempt suicide under the wheels of an incoming train have shown a marked increase in the past year. Many have been young people of both sexes with a history of mental illness. One result has been an investigation on the part of the medical staff at a Mental Health Center to try and determine if patients with

known suicidal tendencies should be allowed such freedom and why the subway is chosen as the means of accomplishing it. This problem of suicides is one of continuing concern, especially since there does not appear to be any effective solution to it.

Other areas of concern are the possibilities of an emergency evacuation as the result of a bomb threat which might be more than a threat, or the forced evacuation of a disabled train between stations under panic conditions.

Small fires do happen from time to time, usually resulting from a flashover when a collector shoe picks up a foreign object and the 600 d.c. traction power is shorted to ground. In the event that such an incident should temporarily disable a train, emergency traction power cut-off stations are located at approximately 500 feet intervals (one train length), and each emergency station is also equipped with such things as a telephone and an evacuation ladder, and five gallon water pump fire extinguishers are strategically located throughout the system. Also, a 2.75 pound dry chemical extinguisher is carried on each car for possible use.

As water is the approved extinguishing agent, wet hydrants are provided on all station platforms with all the necessary equipment for the exclusive use of the City Fire Department. Access and vent shafts could also be used in an emergency to drop hose lines from the surface.

A close liaison exists with the Municipal Fire Department, and subway fire fighting is included in the curriculum of the Fire Department's Training School. Last year over 1,000 firemen were given an on-site refresher course in procedures to be followed in the event of a subway fire.

So far, no mention has been made of the co-ordinating and direction center which plays such an important part in the safe operation of the system. It is called "Transit Control," and it is in continuous operation year in and year out. Its three basic inter-related functions are communications, power control, and signal control.

Communications includes a two-way radio network to all trains and emergency vehicles, extensive network of private and public telephones with direct lines to the police and ephones with direct lines to the police and fire departments.

Power control permits the remote control and monitoring of the automatic electric substations and such equipment as ventilating fans, fire alarms, pumps etc.

Signal control follows the movement of each train electronically and it thus provides continuous supervision and control of the main line tracks and the signal system.

Train operation is protected and controlled by automatic wayside three-color type lighted signals. The signals along the tracks are spaced in "blocks" which vary in length in accordance with grades and train speeds. Train control is provided by an automatic train stop at each signal location to enforce obedience to a stop signal.

Signals along the route are divided into interlocking and automatic sections. In the interlocking sections, where two or more route choices are possible, track switches and signals are interconnected so that the system will refuse to signal two trains onto tracks that would bring them into conflict. In the automatic section, where there is only one track in each direction, the signals are controlled automatically by the trains in the section.

In conclusion, because of such a variety of safety features, motormen and guards are permitted to operate trains with certain health conditions which would bar them from operating surface transit vehicles. Also, the manning of station fare booths is reserved for long time employees who have been found medically unfit to continue in their regular duties. Hence, finding gainful employment for employees with certain health impairments does not present the same problems as are encountered in strictly surface operations, and those employees have built up an enviable safety record.

INCENTIVE PLANS

By JOHN J. O'REILLY
Safety Supvr., Port Authority, Trans-Hudson Corp., New York, N. Y.

An incentive is anything that an individual feels will solve a drive or motive (social approval, money, etc.). Incentives by themselves are ineffective unless they are a part of a well-rounded safety program. It is the effective safety program and not the incentive program that controls the exposures of the work environment and produces the outstanding safety record. The incentive is only a means of stimulating the employee to get involved in the safety program. These incentives can take many forms, from a direct cash payment to a memento of a safety achievement. The National Safety Council offers many of the latter types of awards. We at the Port of New York Authority use incentives as a stimulus to have our employees work safely. This is accomplished by means of our Safety Awards Program. Safety awards at the Port Authority are given to our employees in recognition of exceptional group safety achievement. The program has two classes of award. The larger award is for continued safety performance beyond the date of the first award. These awards are made in the form of a gift certificate which the employee redeems for a gift he selects from a catalog that is supplied to him.

All personnel, other than office groups, are eligible to participate in our awards program. When a participating group completes the required number of days without a disabling injury, it requests verification of its record. Following this verification, each employee in the group becomes eligible to receive a gift.

Disabling injuries are determined by the Inspection and Safety Division after consultation with the responsible group managers. At the discretion of the Chief, Inspection and Safety Division, and with the concurrence of the unit manager, certain extraordinary disabling injuries although formally charged against the unit may be waived for awards purposes.

In addition to our basic safety incentive program, we have developed other programs to fill specific needs. One of these programs was developed to stimulate a greater interest in safety among our leadmen in a particular division of our rail transit operation (a leadman is the lowest level of supervision). This program consists of a drawing for four gift certificates among the leadmen in the division as an award for a disabling injury-free month. Since this incentive program was established last year, our disabling injury frequency rate in this particular division has dropped over 60 per cent for the period immediately preceding the institution of this program.

Another form of incentive program we have developed is our Executive Director's Award. Outstanding employee safety accomplishments are also recognized by an award of commendation from our Executive Director. Commendation plaques are given to each eligible department, facility and division which has, for a full calendar year, achieved one of the following: (1) a disabling injury frequency rate better than the Port Authority average rate for the period; or (2) a rate at least 25 per cent below its own rate in the previous year.

Eligible groups include all line departments and facilities and other participating departments and divisions.

In addition to the specific programs that we have developed for our own organization, the National Safety Council has several standard nationwide programs such as the Safe Driving Award, the Key Man's Award, the Fleet Safety Contest, the Award of Honor, and the Award of Merit. The Council also has a selection of gifts that can be used in developing your own incentive program.

Over the years that we in the Port of New York Authority have been using incentive programs, we have found them to be an excellent tool in motivating our employees to work safely.

SAFETY MOTIVATION FOR MAINTENANCE EMPLOYEES

By ELMER H. GREEN
Maintenance Dept., Bi-State Transit System, St. Louis, Mo.

The dictionary defines motivation in various ways such as: "To induce; impel; incite or furnish with a motive." Preferring to use the last for our safety program, we at Bi-State Transit have for a long time motivated safety for the employee through bulletin boards in each department. Working with our training center and with Transit Casualty, who have provided safety posters, slogans and progressive safety features over the years at work and through the mail at home, we have kept safety in the eyes of the employees and their families. We have shown safety slides, movies, and have given countless safety demonstrations throughout our properties. But it is still not enough. I believe the general attitude among the workers is, "It can't happen to me." With this in mind, we have trained our foremen as "watchdogs." They police each employee every day, watching for a let down in his performance from general lack of attitude, poor health, or a just don't give a damn attitude—and believe me, the last one is becoming more and more of an every day thing.

To supplement our foremen, a safety tour is made each month using one of our union employees. The tour consists of talking to each employee looking for any items to benefit our safety program. It is amazing to me that over the years of teaching safety we still find employees who will work with safety hazards until the tour is made and then report a hazard. For what reason, I am not able to conceive. When questioned as to his thinking, the answer is, "I forgot," or, "It just wasn't bad enough to have it taken care of at the time."

When the tour is completed every effort is made to correct any items reported as soon as possible; not only to correct our hazards, but to impress upon the employees that we are with them in maintaining safe working conditions. To further our safety operations, a monthly safety meeting is held with our top superintendents along with engineers for Transit Casualty's office. All accidents for the preceding month are reviewed and discussed as to how we can eliminate them in the future.

The safety slogans over the past few years have been to report any accidents no matter how small. This, in my opinion, is making it harder every year to refrain from having lost time accidents. Basically, there are two reasons for this:

1. The doctors in this day and age are not going to be responsible for any infections incurred if employees return to work if there is any healing to be done. I would be willing to bet that if 90 per cent of the small accidents happened at home, 70 per cent would not pay the doctor $8 to $10 to put on a band aid or even look at it.

2. With the present day sick leaves coming, some employees deplore the idea of not using them up every year. They feel as though it is coming to them and plan to achieve them. I am not saying that any employee would deliberately injure himself to achieve sick leave pay, but it certainly does not help our cause if he is injured slightly and drags out the injury, such as a sprained or pulled muscle, thus dragging out lost time.

To further motivate our employees, as we pass a milestone in no lost time hours—such as 250,000—an award is given to each employee involved. Over the years it has been pens, pocketbooks, key chains, etc., as a small token of appreciation for their efforts.

Since 1961 until today our combined efforts in our main shop have produced 2,800,000 no lost time hours, which is quite an achievement when you consider 174 men in 1961 and the present 114 men working with their hands eight hours a day, five days a week, using every known tool connected with repairing of buses such as drills, grinders, saws, sewing machine, spray paints, welding of all kinds, riveting, chiseling, etc.

We are proud of every one involved in achieving this fine record. Bi-State is constantly motivating safety, not just for Bi-State, but so the families can enjoy peace of mind at home knowing that as a company we do care about each individual employee and his family.

Joint Session Of Commercial Vehicle, School Transportation And Transit Sections

Presiding: STANLEY A. OSSMAN, Vice Pres.-Safety, Greyhound Lines—West, San Francisco, Calif.; *Chairman, Motor Transportation Conference, N.S.C.*

SENATE INVESTIGATES SAFETY (MOCK SENATE HEARING)

SENATORS:

Chairman—ORVILLE G. PARRISH, Dir., School Transportation, State Dept. of Education, Trenton, N. J., *Member-at-Large, School Transportation Section, N.S.C.*

JOSEPH J. COTTRELL, Pres., Cottrell Bus Service, Inc., Buffalo, N.Y.; *Counselor, School Transportation Section, N.S.C.*

ALFRED E. KENRICK, JR., Mgr., Safety & Training, South Carolina Electric & Gas Co., Columbia, S. C.; *Immediate Past General Chairman, Transit Section, N.S.C.*

BILL G. LOSHBOUGH, Supvr., School Bus Safety & Driver Education, State Department of Education, Santa Fe, N. M.; *Vice Chairman, School Transportation Section, N.S.C.*

H. R. PLAIN, Safety Supvr., Spector Freight System, Inc., Chicago, Ill.

GORDON G. WADSWORTH, Safety Eng., Alameda-Contra Costa Transit District, Oakland, Calif.; *Member at Large, Transit Section, N.S.C.*

BERT L. WHEAT, Vice Pres., Loss Prevention, Eastern Express Inc., Terre Haute, Ind., *Vice Chairman, Motor Transportation Conference, N.S.C.*

WITNESSES:

ROBERT E. CREWS, Vice Pres.-General Mgr., Whitfield Bus Lines, Inc., Las Cruces, N. M.; *Counselor, School Transportation Section, N.S.C.*

ART E. NICHOLS, Vice Pres., Safety & Personnel, Midwest Emery Freight Systems, Chicago

C. DEANE FORTUNE, Dir., Safety & Security, Transportation Div., Burlington Industries, Inc., Burlington, N. C.; *Member At Large, Commercial Vehicle Section, N.C.S.*

GEORGE L. LEIERZAPF, Supt. of Safety, Transit Div., Port Authority, Allegheny County, Pittsburgh, Pa.; *Member At Large, Transit Section, N.S.C.*

WILLIAM J. MORGAN, Dir. of Safety, Cincinnati Transit, Inc., Cincinnati, Ohio

C. CAMERON WREN, Dir. of Transportation, Elgin Public School District U46, Elgin, Ill.; *Secy., School Transportation Section, N.S.C.*

Chairman Parrish:

In almost every issue that comes before the committees of Congress and special hearings on rules and regulations affecting transportation, you will find groups trying to sway decisions to their own advantage. Sometimes persons who should be concerned sit back and fail to aid their own cause.

Government regulations often attempt to solve problems that business itself hasn't solved.

The reason for this pseudo senate hearing is to study some of the current problems that face us in regulations and how we may cope with them. We also hope that by this means rule makers can become aware of some of our problems, fair solutions will have a chance to succeed, we may determine if any new problems might be created by change, and business will concern itself enough to understand the changes and make their thoughts known to the right people.

Keeping posted is more than a full time job. Small wonder that what we label "apathy" can be collapse of communications. Our purpose is not to make a mockery of our system but, by the mock hearing, to demonstrate how we might take a hand in the architecture of proposed rule making.

Within the framework of the motor-vehicle standards and the safety program standards you will find an ever increasing array of regulations and compliance orders that may eventually substantially change transportation. A few areas affected by rule making are: (1) the vehicle—its construction, operation, and interaction with other vehicles; (2) the driver—his qualifications, emotional ability, employability and personal habits; (3) the employer—his obligations, responsibilities, and operating policies; (4) safety programming, as it affects traffic laws and ordinances, street and highways, their construction, funding, upkeep and division of authority, driver training and retraining, and environmental safeguards, pollution, hazardous materials, and the like.

By no stretch of the imagination can this session be considered a compendium of the variety of regulations we face in transportation. It is only a sample. In transportation we are faced with regulations and standards that would tax the abilities of a super being. All the talents that are needed are rarely lumped into one person. Accident prevention now calls into play the talents of the legal profession, engineering, chemistry, personnel, training, the medical profession, and many more.

Few businesses, large or small, can escape regulation of some kind. The excuse, "I didn't know," is becoming less and less acceptable. The penalties for failure to know and failure to observe are spelled out and it will be necessary, at the risk of stiff penalties or even loss of operating rights, to learn and comply. Those who provide transportation services as regulated carriers know how demanding these can be. Yet, for the most part, rules and regulations set forth by law rarely go beyond that which a prudent and successful businessman would pursue on his own.

Just as traffic safety program standards continue to be implemented, you will be required to cope with standards under the new Occupational Safety and Health Act. It means that regulations already in place through such legislation as the Walsh-Healy Public Contracts Act, the Service Contract Act of 1965, and others referred to within the new Act will apply immediately and continue to apply until superseded by new regulations and standards that may be named in the future.

There is a need and government has already expressed an invitation for business to join in the review and establishment of standards. Business, industry, trade associations, and professional agencies such as the National Safety Council must all work together for the common goals that have been evidenced.

Our most important ingredient in transportation, and the most expensive usually, is the driver himself. So, let's start out by talking about him. Senator Wheat, what area of concern would you like to begin with?

Wheat: Mr. Fortune, you represent the for-hire carriers and you have recently added experience in the private trucking area. How can we overcome the high incidence of vehicle accidents that many carriers complain about in the use of the casual or part time, day to day driver who is employed as needed to take care of peak demands in a business

that must meet heavy demands one day and light needs the next?

Fortune: Although there are many firms that have had bad experience with casuals, it is not always the case. In checking this problem with other carriers I found a West Coast operation that claims its experience with casuals is good. This operator indicated that there are many reasons why such short term employment is likely to have poor results.

For example, such a driver usually does not have an opportunity to get acquainted with the type of vehicle he will operate. Often, he meets up with a strange piece of equipment and has to break in or get used to it very fast. Few employers take the time to explain the vehicle, demonstrate it, or even check out the man before he leaves for the day's run. Not to mention that the equipment might be a temporary rental, like the driver, and in questionable condition. Or, if it is a company owned vehicle it, too, could be of questionable condition since our temporary man is low man and could get the vehicle that nobody else wants. Because many employers are rushed for time on that particular day, moving freight gets top priority and there's little or no time to spend on orientation.

The casual may not know the route, not be familiar with the stops or how to reach them, may be totally unaware of conditions at the destination and the peculiarities of pickup or delivery points. He shares none of the reasons that a full-time company employee has for doing a good job, nor does he have the benefit of learning procedures used or knowing exactly what is expected of him. Rarely is a casual told exactly what to do in the event of an accident and how to protect the company from false claims through adequate procedures if an accident does occur. Provide him with a simple accident report form that has printed instructions. It is better to have a simplified report filled out correctly than to have him louse up a complicated report where the chance of error is greater.

In overcoming some of these problems this successful safety director gave the following examples of ways an employer can overcome some of the problems of the casual:

First of all, the temporary man should not be given complicated assignments even if it requires some switching around of in-service or regular drivers. In other words, reduce to a minimum the opportunities for error by keeping assignments simple. This simplicity also carries over to the type of equipment you ask the casual to operate. If at all possible, keep him on straight one-stop vehicle deliveries. Planning how you will use casuals is extremely important. Work out a system before you have to do it under the stress of a busy day.

Try to develop a group of better qualified casual drivers who have had previous experience in your operation. Ask for them by name when your dispatcher calls the hall. Be explicit as to the qualifications you seek in temporary employment when placing your order to the hiring hall. Each time a man works for you he develops more experience and gains more knowledge as to how you want the job done. Even though you are busy take a few moments of your time to instruct a new man, even though he may have worked for you before, so that he is sure of his instructions before he leaves your premises. Never trust important things to memory. Prepare a procedure manual even if it is a one or two sheet document of all the important things he must do right. If necessary go over the procedures with your dispatchers and iron out any bugs that you may discover in the program. You may find a complete job analysis and breakdown necessary for the use of casuals that you would not need for your regular employees.

Insist that the casual check in at regular intervals during his duty tour. Emphasize that when he is in doubt, he is to call in and ask questions rather than bull his way through without clear instructions or if some change has occurred that was not anticipated.

Another way to reduce the possibility of losses through the use of casual help is to provide these people with loads of lesser value. This particular employer does not trust a casual with high value loads. By all means do not give him any "specials," avoid his handling of hazardous materials, delicate commodities, or those covered under special rules and regulations. If it can be avoided, do not send him to problem shippers or consignees.

Take the time to road test the driver even if it is to have him just drive around the block. Not to do so can be fatal.

If you are having trouble getting qualified help from the hall you might even have to train dock workers as casual drivers to take care of your peak load requirements and hire dock casuals where you can keep them under your eye.

Another correspondent had this advice to give about the use of casuals. Avoid them at all costs and if you cannot, at least check up on them before you use them. A telephone call to another employer you can trust who has used the casual could tip you off to possible trouble. The first-time casual is a big question mark, since you cannot put him through screening, testing, and training you would afford your regular employees.

Above all, keep records of the good guys and the bad guys.

Plain: Under the Bureau of Motor Carrier Safety Regulations, Section 391.63, intermittent, casual, or occasional drivers do not have to comply with Section 391.23 "Investigation and Inquiries," Section 391.25 "Annual Review of Driving Record," and Section 391.27 "Record of Violations." All the employer must obtain is the driver's name, social security number, and the identification number, type, and issuing state of his motor vehicle operator's license. This information must be kept in the carrier's files for three years after the person's employment, even if it consists of one day's employment. Since this is so little to go on and rules out obtaining a record of accidents or violations, would you support the use of a permanent work history document endorseable by each employer that would record accident and violation records for the previous 12 months?

Nichols: Although I would find the use of an endorsement type work, accident, and driver violation record very useful, I wonder how we could accomplish this under present day practices. I am sure the Bureau of Motor Carrier Safety could require this of regulated carriers. Compliance of course, could be good or questionable. Then, too, maintaining the record might pose some problems. We, can on occasion, hire a casual who has an accident which he fails to report. He's long gone and perhaps hard to trace when we learn of the incident through litigation. How would we make this type of endorsement?

The trouble is, too many casuals work for local cartage companies or nonregulated carriers in between calls to regulated carriers. To cover these employment times a record would almost have to be required by state regulation or be made a part of a commercial operator's motor vehicle license that could be endorsed for convictions of violations by the traffic courts, or by a law enforcement officer if called to the scene of an accident.

This leaves work history, endorseable by the day to day employer, and, again, misdirected deliveries, O.S.&D. claims, and other errors might not show up for some time. Then there is the matter of theft of cargo. To be valuable, such a work record would have to be complete and kept up-to-date by a reliable agency.

The hiring hall seems to be the central spot and the logical one to Zero In for better drivers, better records, and better performance. We can refuse to accept the driver the hall sends us if we place a record of accident or other infractions in their hands. We cannot always pick and choose the good ones.

Sometimes, even though it is probably more expensive, you can solve the Monday morning freight movement buildup by using local cartage service. It could be less expensive in the end if you happen to get a bad driver who wrecks your equipment or freight or makes you liable for a husky law suit.

Cottrell: Do present day regulations—federal, county, state, or local—covering the hiring of school bus drivers pose problems, and what are some of these problems?

Wren: In the field of school transportation many employers, both contract carriers and public school systems operating their own transportation program, have often felt the pinch of employing drivers. Our type of operation, with peak demands early in the morning and late in the afternoon, appeals to a restricted type of driver candidate. Many school transportation systems have experimented with senior citizens, housewives, teen-agers, and others to whom such a schedule is acceptable.

Some time back, the Department of Labor appeared about to eliminate the school bus driver under 21 years of age, but apparently the records from the states using teen-age school bus drivers convinced them that they were employable, provided the system carefully trained and supervised such individuals.

Recent events in the Bureau of Motor Carrier Safety in terms of encouraging 18 year old apprentice driver trainees I believe are an encouraging development. Unfortunately, many good teen-age drivers with adult attitudes are categorically removed as driver candidates at the time they leave high school and eventually, when they reach the age that many carriers would employ them, have become entrenched in other types of occupations.

I believe the insurance industry has done much to discourage the use of such individuals as drivers by applying a universal yardstick rather than controlled studies and investigation to determine their worth.

Loshbough: We know that many fleets employ drivers that moonlight. Unfortunately many of these operations involve passenger-carrying vehicles such as taxicabs, school buses, transit vehicles, and the like. My question is, should any commercial-vehicle driver, especially those operating passenger-carrying vehicles, be permitted to hold two jobs? Would it make a difference if the second job did not require driving?

Nichols: I think the intent implicit in this question has much merit. However, when it came to enforcing a requirement that no commercial vehicle driver be permitted to hold more than one job, implementation and administration would run into trouble. Certainly it should make no difference whether the second job requires driving or not. Any job requires an expenditure of a person's energy, and if this person over extended himself both jobs would suffer, especially the job of driving, which requires alertness, perception, and a high degree of decision making.

My advice to any employer who uses moonlighters (and I understand that many policemen drive taxicabs and school buses) would be to screen such candidates very carefully and to make sure when these persons arrive for their run that they at least look bright eyed and bushy tailed.

Many driving jobs, such as those in the private or for-hire carrier industries, are so demanding of a man's energies and the pay is usually such that few would have the energy or the desire to moonlight.

Perhaps of even more concern to our operation in trucking is how a driver's off duty hours are spent. Although regulated carriers and their drivers must adhere to hours of service and rest, no regulation in the world can control how a man spends his personal time. You can be sure that many drivers expend considerable energy in their off duty hours in the name of recreation, fun, or extra curricular activities.

Morgan: Speaking for the bus industry, both transit and over the road operations, I might point out that there are some similarities and some differences. Over the road bus operation is demanding and pays well, and I believe you would find few instances where safety regulations are broken or moonlighting is accepted.

We have used school teachers for charter operations and peak traffic. However, at such times such drivers are on their off season or are operating on their day off, and I would not consider this moonlighting.

The transit industry has some problems peculiar to itself and similar to school transportation systems. There are heavy demands for service during morning and evening rush hours which makes it necessary to hire persons for split shifts with considerable off duty time in between. Quite frequently these transit bus operators hold two jobs, but their total employed time in any day would probably equal or not too greatly exceed that of any regular worker. I agree that the condition in which a driver reports for duty is most important. When we reach the point of telling any person what he can do in his personal time, we have reached the ultimate in control that would be more harmful than productive. The employer must police the condition of drivers reporting for duty to protect his own interest. This you cannot regulate into being.

Wren: Speaking for the school transportation fleet operator, I would say that banning any citizen from two jobs or extra employment so that he might solve his family financial problems or educate his children would seem unreasonable. We know that fatigue plays a role in many accidents, and carriers regulated by the Bureau of Motor Carrier Safety must comply with hours of service and nonduty rest periods as the government has attempted to deal with this problem. In fact, the Department of Transportation is presently conducting a study of fatigue as it affects the driving task, and the results of that study should reveal some facets of fatigue that may have been unreported or overlooked in our present record keeping systems or in our communications with each other.

Over 200,000 individuals make up better than half of the driving force in the school bus industry, and that profession has almost the best safety record in our society. The difference, I believe, would be the fact that school bus operations are normally less than two hours at any one stretch, and the industry has always recognized the moral responsibility inherent on both the driver as well as transportation management—living proof, I believe, that the human being can surmount all types of physical and mental strain if his sense of personal contribution and value is reinforced by training and community appreciation of his role.

I do believe, however, that all driving activity, even the school bus variety, should be within the hours of service concept of the Bureau of Motor Carrier Safety, and that in addition to all the above every school bus garage ought to furnish a coffee break on a no-charge basis to every driver who reports to duty.

Wheat: Within the regulations of the Bureau of Motor Carrier Safety and the newly enacted Occupational Safety and Health Act, there are provisions spelled out for penalties to employers. Penalties to the employees are practically nonexistent. I refer to negligence in work oriented behavior rather than to such things as mentioned in the Bureau of Motor Carrier Safety Regulations, Part 391.15 which disqualifies driver for felonies, crimes, operating a vehicle under the influence of alcohol or drugs, or leaving the scene of an accident resulting in personal injury or death. There are some items, such as falsification of prior work in accident experience, a conviction of driving violations without suspension or revocation of license, operating under a second state's driver's license while an original state may have lifted or revoked his license and the like. Oftentimes, falsification and negligence can be more deadly than some of the items included in the provisions for disqualification of a driver. What recourse do you have? For example, if a driver falsifies pre-employment information?

Morgan: In many companies, falsification of any pre-employment information is in and of itself grounds for dismissal. If this is not in labor contracts, it should be. It is my judgment that every company should have recourse for this action for falsification of pre-employment records, regardless of whether a fleet is covered by federal regulations.

Nichols: With the exception of that required by Section 391.15 of the Bureau of Motor Carrier Safety Regulations, "Disqualification of Drivers," which clearly and justifiably sets the criteria for separation from driving status for certain drivers, a provision in Section 391.25 places the burden on the carrier to review at least once every 12 months the driving record of each driver it employs to determine whether that driver meets minimum requirements for safe driving or is disqualified to drive a motor vehicle pursuant to Section 391.15. Compliance is subject to individual opinion of what constitutes a safe driver and what might be a violation of the motor carrier safety regulations and the hazardous materials provisions.

It would appear that an approach such as the states that have such laws use in applying a point system might be considered for future help in disqualifying drivers of questionable performance. However, I believe that the feeling within the Bureau is that such a provision might be too severe in terms of moving violations when state to state comparisons show a wide variation of requirements in this respect.

Under conditions that prevail in the selection of new employees, the need for "instant" discovery should not penalize an employer and there should be a remedy of disqualification. In fact, I would share the feeling that a

penalty for purposely misrepresenting the facts might be a welcome addition to aid companies in better information on which to judge candidates.

Plain: Do you use written tests and road tests similar to those required by the Bureau of Motor Carrier Safety to help determine driver candidates, and do you find such testing helpful?

Crews: I represent the school transportation fleets as president of the National Association of School Bus Contract Operators, but I queried both transit and the regulated carrier industry for help in answering this particular question.

First, let me speak for the school transportation fleets both from the standpoint of contractors and for the public school operators. Until such time as Standard 17 proposed by the Department of Transportation becomes law, pre-employment testing and requirements for pre-service and in-service training are pretty much a matter of control by each state department of transportation or state regulations. Even these do not spell out in great detail what constitutes a standard program. Yet, in our business of transporting pupil passengers and oftentimes using drivers who might be considered anything but professional drivers in the same context as we might find in trucking, there is a degree of pre-service training that must be accomplished both in terms of knowledge of the rules of the road and in terms of driving skills and the development of driving performance habits.

At the New Mexico Drivers Institute held at Silver City, New Mexico each year, Bill Loshbough had this to say about the New Mexico Motor Carrier Act:

"It has no specific requirements by law for the pre-service or in-service training of a commercial vehicle operator. In checking with the Motor Carriers Association, I find that they feel that the entire pre-service and in-service instruction requirements are very weak and that some basic requirement program should be required. It is regrettable that new drivers taking the examination are not required to achieve a passing grade. The certificate of written examination must not contain the word 'successfully.' New drivers are allowed access to reference material before and during a written examination. The value of the examination and determining the applicant's ability to safely operate a commercial vehicle is greatly reduced."

Section 391.61(g) exempts all drivers regularly employed prior to January 1, 1971 from road tests, written examination, investigations, and inquiries. These items should be a standard procedure for all drivers. Regular drivers need to be updated on changes and regulations and new regulations promulgated. Their ability to continue to drive safely cannot be assured unless a continuous program of in-service training, retraining, and refresher courses is an integral part of the requirements to operate a commercial vehicle.

Pre-employment training or retraining after employment or retraining because of accidents must be a continuous process. Such training must be done by instructors who are well qualified to teach safe driving to new drivers, rather than having an old time experienced driver teaching the new drivers or those having accidents. This whole area of training needs to be studied in greater depth by regulating agencies so that definite guidelines can be established and training methods developed.

Kendrick: Do you believe fair employment practices rules have any effect on success in employing good drivers?

Nichols: As far as I'm concerned, this should not pose a problem if candidates for employment can meet the qualifications of the operation. The transportation industry has an excellent record in terms of the variety of employment opportunities it provides and the high per cent of minority groups that are employed.

As is true in almost every endeavor today, women are making a place for themselves. This has been true in school transportation for many years, it is becoming more prominent in taxi cab operations, and there are even instances where women have been hired as line haul drivers and have proven to be equal to the task.

Wheat: Do you believe more readily accessible driver accident and violation records would help in selecting better drivers?

Morgan: A reply representing transit operations indicated that the person's training, work experience, and current off-the-job life should be investigated as part of the process in selecting applicants to undergo training as bus operators. An applicant's accident record as a driver and his record of violations are part of his past which must be included in any evaluation of his probable ability to meet the standards of the bus operator's job.

Details of both accidents and violations should be available to the individual charged with the duty to select applicants for training. Numbers of accidents or violations are not enough to permit fair evaluation to the individual seeking employment and to the company who will provide an opportunity for qualifying for a bus operator's job. To deny an employment manager access to driver accident violation records would seriously handicap his ability to select better drivers. To my knowledge, we have not run into major problems in obtaining such records.

A regulated carrier replied, "If we had a central or federal agency to readily secure from all states the accident and violation records of drivers, it would give us a more thorough knowledge of his background as a driver and definitely would allow us to select better men. This would also enable us to meet the Department of Transportation Motor Carrier Safety Regulations requirements within a shorter period of time."

Cottrell: If a former employee was separated under unfavorable conditions, would you be inclined to protect him or would you be candid with his prospective employer?

Leierzapf: A consensus review of the question reveals a unanimous "Tell it like it is." There were reservations in some instances of putting information in writing where it might be a serious condition, such as theft or indiscretions involving moral character. These would best be answered orally. It was emphasized that a reason for separation in one instance from one organization might not necessarily mean that the condition would interfere with subsequent employment or in a position of a different nature.

Often no response will indicate that there is a question in the applicant's background, especially if several responders act in the same manner. We feel that each case must be judged on its own merit, and if the man has applied for a job as an over-the-road truck driver or a bus driver and was dismissed for drunkenness, we would probably be inclined to telephone the new employer and tell him so. If he has applied for a job in a factory or in a construction crew and we had dismissed him because he refused to wear a dress shirt, necktie, or jacket on the job, we would perhaps pass over this situation and simply fail to respond to the questionnaire.

For any allegation there must be evidence in the company files. There is always a possibility that an employer can be sued by a former employee.

When employment in transportation affects safety and human lives are involved, it is a mistake to protect any employee who gives evidence that his performance is not of the caliber that justifies his continuation as a professional driver.

Wadsworth: Do you require a minimum of two year refresher training programs for commercial drivers? Should such training be required?

Morgan: I believe the transportation industry would support such training requirements. Under the Occupational Safety and Health Act there is mention of training requirements in the provisions of compliance, and most transportation companies hold refresher training as a matter of good business.

The Greyhound Corporation has held refresher courses for all in-service drivers approximately every two years. They are presently developing a new program to begin in January of 1972. Their experience has indicated improved results in accident frequency. They feel that refresher training is more productive than ordinary safety meetings since they usually reach a larger percentage of drivers in the refresher training program because some drivers will not attend safety meetings on their own time. Greyhound pays drivers for a full day and devotes eight hours to the refresher course. Through this program they can devote a full day to retraining versus an hour or so that is generally allotted at safety meetings. Attendance is voluntary at these retraining sessions and it is rare that a driver refuses to attend. They find that safe-

ty meetings are like going to church: only the good guys attend and we fail to reach those who really need the program.

Loshbough: Should the Department of Transportation establish standards through the Bureau of Motor Carrier Safety to license and certify any school that is set up to teach commercial vehicle operation?

Crews: I understand that, based on the recent Bureau of Motor Carrier safety regulations concerning road testing and knowledge testing of driving, many schools sprang up around the country. Unfortunately, their history reveals that without regulation there can be questionable operations and these often spoil it for the schools who would operate in a businesslike manner.

There are a variety of job opportunities in commercial driving and the school, the lessons, and the training should be geared to provide the best possible candidates for employment in freight operations. This is one area we should keep our eyes open to and do all we can to assist in the establishment of effective training programs.

Kendrick: Do you require as part of bus driver training that each driver maintain an active American Red Cross certification?

Wren: It would appear that few operators require such certification. We feel that treatment for the injured should be left to authorized first aid or hospital units. Our instruction is limited, therefore, primarily to more "don'ts" than "dos," and usually this session of the training is conducted by a representative of the Red Cross or local rescue squad. Each operator is, however, furnished a copy of the National Safety Council booklet, "Pocket Guide to First Aid."

Wadsworth: Would you endorse the use of driving simulators, photography, closed circuit television, and other driver performance tests to train and evaluate problem drivers?

Leierzapf: They say one picture is worth a thousand words, and the more evidence you can produce to convince a driver that his performance is below standard will certainly help in changing driving habits and improving performance. Unfortunately, driving simulators and special purpose vehicles involve some expense and the hiring of persons qualified to operate the equipment.

Whatever system is used there is a plus factor, but the greatest benefit comes from actual operations under actual operating conditions. Evidence to prove that the driver failed to respond in a defensive manner or does not use his perceptive abilities to the best advantage would be a preferable system of improving the performance of problem drivers.

Plain: Although the regulations are quite specific that no driver shall operate a motor vehicle under the influence of narcotics or intoxicating liquor, nor should he be required or permitted to operate under certain conditions of physical fitness, determining whether or not the driver was under the influence would be difficult, especially the provision of the four hour predriving abstinence clause. Just how do you determine that a driver in your employ should not operate a vehicle under these conditions?

Fortune: Determining daily driver physical fitness is a most difficult problem to solve. We must depend on our dispatchers to visually recognize symptoms of possible concern. Sometimes drivers can be observed for periods of thirty minutes or more before they depart. The time a driver uses when he reports to the dispatcher to have his logs checked, determine prior hours worked, time off, etc. can be used to observe his apparent physical condition. At locations where drivers rest in company dormitories the driver's whereabouts can be. . checked. It would be a good policy to have supervision occasionally or even regularly check bars in the area adjacent to company terminals. Even so the question of illness or physical fitness while enroute or the use of drugs is difficult to place. This is an area in which education can play a very important part.

Loshbough: Do you have any trouble in defining what is meant by "current clinical diagnosis" as mentioned in Part 391.41 with reference to heart trouble, high blood pressure, or alcoholism?

Leierzapf: Although we went to the medical people, in fact, to a man who has worked many years in the area of physical fitness of professional drivers, we found we could not pin this answer down to a definite period of time. In interpretations appearing in the *Federal Register* reference is made to the word "recent," but like the word current it is not measurable.

I would imagine that use of such terms do not rule out as a driver or a driver candidate a person who has a history of heart trouble that has undergone repair. There are cases of active sports professionals in basketball, baseball, and football who have recovered from heart problems. The term "current clinical diagnosis of high blood pressure" likely to interfere with ability to operate a motor vehicle safely can best be determined by the opinion of a doctor who understands the individual case circumstances and the workload of the individual.

Similarly, "has no current clinical diagnosis of alcoholism" would be a subject for debate. In each of these situations we are talking about degrees of effect of the driving task, and it would help the fleet industry if guidelines could be established:

Cottrell: How would you handle a case in which medical examination of a driver disclosed a coronary condition that would prevent him from continuing to operate a commercial vehicle?

Crews: Although this is an unfortunate situation, we must understand one thing right at the beginning: if tests prove that the condition exists, the person must not be allowed to drive. There are protections within the regulations and appeal rights to which the driver has an alternative.

The man or woman should be closely examined in terms of other abilities for employment within the operation that does not require driving. If in the particular fleet there is not a spot that he might handle without fear of doing further damage to his condition, then the most practical solution would be to have the compassionate employer assist the person in finding employment possibilities for which he has capabilities and which would allow him to continue earning a living.

Some pension plans leave much to be desired in terms of benefits available to the person who must take an early retirement for reasons such as we're discussing here. Under some plans a driver who is forced by such a disability to go into a position where he was no longer a member of the same local would lose all his retirement benefits. This is a situation which should be corrected.

Wadsworth: Do your records indicate that driver fatigue is an important element in your accidents?

Morgan: There are not enough definite facts to go on to give a complete answer to this question. Driver fatigue is an element in accidents. In some cases five, ten, or even more per cent of the accidents are of this nature. They are generally one-vehicle accidents, such as running off the roadway, and usually occur during night driving.

Leierzapf: Although there is little data to support this conclusion, it is considered that fatigue is not an important element in accidents involving urban transit operations. This may be due in part to the demands for the operator's attention from several sources such as: in and out of service stops every block; traffic congestion (stop and go traffic); pedestrians darting across streets; turning left or right numerous times enroute; and requests from passengers for assistance or advice.

Kendrick: With the increased use of drugs far beyond the stimulants known to exist in some parts of transportation such as pep pills and bennies, does the use of depressants such as tranquilizers, the use of narcotics such as heroin, and the use of hallucinatory drugs such as marijuana or LSD pose a problem of detection?

Leierzapf: Undoubtedly a person under the influence of one of these types of drugs would probably be in no condition to drive or perhaps even report for duty. However, the subject is new and could pose a real problem in fleet operations if we don't carefully examine all the problem and take steps to cope with it. Dr. Brandaleone, medical consultant to the Motor Transportation Conference, indicates that there has not been any controlled study, but there is no question that drugs could be an important factor in the etiology of accidents.

Some of the drugs may be detected by laboratory examinations of the urine and/or blood. Depressants such as tranquilizers result in a lackadaisical attitude, very relaxed and unconcerned. When there appears to be

such a change in behavior you can suspect use of tranquilizers. With narcotics such as heroin the user's symptoms are lethargy, drowsiness, confusion, flushing of the skin, nausea, constricted pupils, respiratory depression, injection scars, or abscesses. LSD users often appear to be in a trance, suffer from anxiety, confusion, tremors, hallucinations, dilated pupils, psychosis, and increased pulse rate and blood pressure. If you suspect a user, investigate at once and get the help of a medical examiner. If an employee has odor of burnt rope on his breath, a dryness of mouth, increased appetite, or changing moods, he should be a marijuana suspect.

There are many sources of information, such as the Bureau of Narcotics and Dangerous Drugs flier describing hard drugs, soft drugs, including the medical terms as well as the vernacular of the day, how the users act, and what effect a drug has on work ability.

An addict may be required to steal as much as $100 a day to support his habit. With the low percentage he usually gets from stolen goods, he would have to steal in the thousands of dollars worth of goods to keep going each week.

Plain: What means can be taken to improve performance of non-regulated carriers and those local operations that give regulated transportation or transportation in the public's eye a bad image?

Nichols: A considerable number of fleets that operate intrastate are beyond the jurisdiction of the Bureau of Motor Carrier Safety and its regulations. Yet with the state law enforcement agencies and the public service commissions, there is usually some type of regulation in effect. Unfortunately, tax supported police departments seldom have enough trained officers to keep up with the so called "bad actors." Also, the public is quick to condemn but slow to offer their support to control such conditions. With more than 110 million persons licensed to operate a motorvehicle in this country, at least 90 million drivers have a personal stake in accident prevention if for no other reason than to protect themselves from the problems of the other driver.

Wheat: Since accident reports to the Bureau of Motor Carrier Safety are "open for inspection," do you believe this adversely affects the quantity and quality of information reported by carriers?

Nichols: I do believe that part of the Motor Carrier Safety Regulations has caused some concern on the part of motor carriers and has limited omewhat the report that goes to the Bureau. If there is a mechanical defect or other action on the part of the carrier's driver that would cause 100 per cent liability on the part of the driver in case of a law suit, I would imagine all information in the carrier's files will probably not be entered on the BMC accident report.

Cottrell: Would a set of federal traffic laws be preferable to the variety of state regulations we now have and our inability to get every state to go along 100 per cent with a uniform traffic code?

Crews: One of the most difficult driving problems is the jungle of traffic laws, regulations, signs, signals, and markings in cities, counties, states and throughout the nation. We have created an attitude of disregard.

Also, we have too many state legislators, city and county officials inaugurating laws and regulations without first evaluating the results of these well intentioned and often misguided efforts and often without the necessary knowledge that research could provide. Too many qualified and non-qualified traffic and safety engineers are promoting their own ideas of color, design, signals, and markings, which leads to confusion. If we are to secure life-saving results we must strive for a uniform traffic code for traffic laws and regulations even if this means uniformity brought about by more federal involvement in the control of what laws can and cannot be established to bring about some standardization.

Fortune: I believe almost everyone would support the doctrine of states' rights and the sovereignty of the state. But when such conditions exist as we face in this country in the interstate movement of commerce and the mobility of the American public to drive on business or for pleasure from coast to coast, the blame or penalty must be shared by those who seek to be different. I'm sure Mr. Crews would be the first to admit that one of the problems that face other drivers is the lack of

uniformity concerning the behavior of other vehicles when approaching a stopped school bus. What is required in one state could be a violation in another. Certainly if the governors cannot see eye to eye during their get-togethers in the name of traffic safety it would seem feasible that career traffic people among the various states would be able to settle their differences and come to agreement on what is best for all.

Plain: Do you believe the Bureau of Motor Carrier Safety tends to concentrate on large carriers? If so do you feel that this tends to encourage smaller carriers to disregard regulations?

Morgan: Bus operators believe that the attitude of the inspectors is that large carriers have qualified personnel to monitor their ability to comply, and they strive to be in compliance due to a greater loss potential. They do not believe that this leads to encouraging smaller carriers to disregard the regulations as much as does the smaller carriers tendency to feel that they are so small as to go unnoticed and a general "I don't care" attitude in so far as the general safety regulations are concerned. The small carrier does on occasion, however, often accuse the Bureau of devoting proportionately more time to them and ignoring the larger carriers.

Crews: The answer I'm about to give is a consensus answer representing the regulated motor carriers of freight, which takes an opposing point of view. It is believed that the Bureau of Motor Carrier Safety may tend to concentrate on medium and large sized carriers, rather than just on large carriers, for many reasons. One is that the larger carriers, running more miles in more vehicles, have a greater number of accidents even though they have a better accident frequency. Thus, it is to the advantage of the Bureau of Motor Carrier Safety to concentrate its efforts where the maximum benefit can be obtained for a small sized force of investigators.

I do not feel this would tend to encourage smaller carriers to disregard regulations any more than it tends to foster such disregard among carriers of any size. The truth of the matter is that the Department does not have enough investigators to adequately cover the trucking industry and the Bureau of Motor Carrier Safety must rely upon a voluntary program of compliance.

Generally speaking, if a carrier has a high operating principle and is aware of the regulations it will make every effort to comply regardless of its size. If it is a fly-by-night operation which tends to disregard rules, regulations and sound safety principles it will do so regardless of DOT efforts unless there is an almost total crackdown on such a fleet. Some of the best fleet operations in the country are small fleets which have little or no enforcement pressure from the Department, and others of the best are large fleets which have a minimum of enforcement pressure. On the other hand, I can think of large and small fleets which have had tremendous amounts of pressure placed on them to comply with the regulations, and they are still operating in violation.

Wadsworth: How would you justify any increase in vehicle length, width, and axle loading from a safety point of view?

Fortune: It has been clearly established through testing by the American Association of State Highway Officials, the National Safety Council's Winter Driving Hazards Committee, and from practical experience in fleets through surveys and tabulations and accident records that double bottom equipment is much safer than even the conventional single trailer articulated truck semi-trailer. From my experience, four to five times less per mile operated in terms of involvement in any type accident. Double bottoms of the 65 to 70 foot overall length category not only are capable of stopping better but can be negotiated through turns and clearances much easier.

Additional payload weight is not only necessary but feasible. AASHO testing has proven conclusively that modern roads are fully capable of withstanding these increases.

I would not recommend at this time any increase in height or length of the single semi-trailer operation in the 40 to 42 foot length category because of the multitude of low clearances of overhead structures and antiquated narrow streets and roads which make safe clearance difficult for even an expert.

Loshbough: What type of regulations should

be enacted to cover the operation of "mini type" buses to transport people, passengers, and preschool aged children, since they are exempt from the proposed school bus standards? Also, many of these units are painted the same school bus chrome color and have lighting systems comparable to standards for conventional school buses. What to do about this?

Wren: In the question, you talk about operation and you talk about standards. Since most of these pieces of equipment are produced on the assembly line of the various automobile manufacturers, it is rather difficult to come up with a separate set of specifications for each piece of equipment. However, there is a need for specific specifications to assure the safety of students being provided transportation in this kind of vehicle, such as seating that is comfortable for the passengers, as well as appropriate padding to give adequate protection for the passengers and appropriate door control for emergency exit and routine exit. Fire extinguishers and certain first aid supplies should be made available also.

Some units painted as school buses are station wagons or step vans, or even conversions of panel trucks. Therefore, there is no need to have these vehicles painted the specific color or have lighting installed comparable to school buses.

If it is a feeling of the legislators regulations should be enacted to refuse to license any vehicle as a school bus that was not primarily constructed for that purpose and meets the standards both of size and operation. There is sufficient research which gives indication that this is the appropriate direction for the transportation of pupils in this type of vehicle. There are also indications from such research that vehicles built primarily to transport children to and from school should keep the interruption to the normal flow of traffic to a bare minimum. Many of these mini-buses are used to transport preschool children to "romper rooms," and their operation pattern differs considerably from that of the conventional school bus.

Cottrell: With considerable dialogue in safety circles, in print, in government, and among the motor-vehicle manufacturers concerning passenger restraints, are there problems of enforcement such as the Bureau of Motor Carrier Safety Regulations, Part 392 covering the use of seat belts by drivers? And do you believe that the states should follow up with similar requirements for all commercial drivers such as taxi cab, school bus, salesmen, etc.?

Leierzapf: If seat belts are to be required for transit bus operators (and I believe the inference was for this since taxi cabs and salesmen were also mentioned), there will be some problems but I don't believe that they are insurmountable. I believe that the benefits will outweigh the problems.

Because of the nature of the task, the transit bus presents problems not inherent in other types of vehicles. Other drivers usually sit in bench type seats and remain in a relatively constant position except when they themselves leave the vehicle. Transit bus drivers, however, sit on a pedestal seat and are constantly changing positions to open and close doors, to check boarding and alighting passengers, accept, punch, and return transfers, change destination signs, turn to answer questions, etc. This may demand an entirely new design for a safety seat belt. Mounting a belt on a pedestal seat arrangement can create tripping hazards whether mounted on the floor or on seat itself. The belt would have to restrain without restricting movement of the driver. Any restrictive properties would probably defeat the purpose and cause them not to be used.

City transit vehicles tend to travel at low speeds, so the incidence of serious injury to the driver is relatively low. The provision of seat belts, however, would prevent most of the "second situations" which could occur when a driver is thrown from the seat and the vehicle goes out of control.

Crews: If Part 392.16 which covers the use of safety seat belts by regulated carriers is to be effective it will be through company policy and a program of education. It would be extremely difficult to enforce safety seat belt requirement for use through police action. Everyone queried is in agreement that states should follow up with identical legislation covering all motor-vehicles. The school transportation industry has gone on record

supporting the use of seat belts by drivers for some time. Many state school transportation programs have enacted such requirements in their rules, some as far back as the middle 60's.

The Greyhound Corporation has instituted a program of seat belts for their drivers and are pursuing this through the means of education.

One responder said all motor vehicles should be required to be equipped with seat belts and the occupants should be required to utilize them.

Laws in and of themselves will not bring persons to use safety belts. There is also a danger of requiring systems of restraint for which there has not been adequate research of design and feasibility. In the area of school transportation safety a flood of action at the state houses that could have resulted in millions of dollars worth of installations which could have aggravated rather than protected the occupant was postponed by research and study of the feasibility. It was found that structural changes, design, and many other engineering factors entered into the picture.

Plain: In an attempt to solve the problems of accident prevention, many well intentioned solutions are either difficult to comply with or are subject to a variety of interpretations. As an example, the Bureau of Motor Carrier Safety Regulations, Part 393.95 A which reads in part: "The fire extinguisher must be designed, constructed, and maintained to permit visual determination of whether it is fully charged." How can you comply with this requirement of visual inspection on equipment for fire fighting that does not supply a gauge?

Nichols: The common CO_2 fire extinguisher must be sealed since there are no gauges. The dry chemical has a gauge on top but it also should be sealed. The soda acid extinguisher must be charged and sealed annually and the date afixed. None of these systems are foolproof, and you only run into the problem of "Was the extinguisher properly checked before sealing?"

In an operation in which the transporting of petroleum products or other hazardous material is the case, fire protection is a most important subject. Regulations in and of themselves will not replace the efficient care that should be standard operating procedure.

Cottrell: Do you believe there is an overemphasis on crash worthiness and occupant protection and not enough on vehicle maintenance and driver performance as a means of improving highway safety?

Wren: It would seem through the printed word and funds earmarked for study that crash worthiness and occupant protection receive the lion's share of attention and funding.

Like many things, you cannot regulate to the degree that you can catch every operator who puts an unworthy piece of equipment on the street. However, the area of driver performance is one to which I don't believe we've given enough attention. Certainly, not enough money has been provided to help such programming nor have regulations been strong enough at the federal, state, or local level to require refresher training such as the Council's Defensive Driving course or adequate evaluation of a driver's ability to use good perception habits and judgment.

Loshbough: Do you believe brake systems or driver control contributes to accidents under adverse weather conditions?

Fortune: It is my belief the drivers contribute more to accidents during adverse weather conditions than do the brake systems. Properly maintained brakes do not constitute the hazard that driver error does. If it were brakes, couldn't we assume that all drivers would have accidents in bad weather?

When the facts are known they would show that in most instances the driver failed to adjust to conditions and is usually caught in a last minute panic attempt to avoid collision.

Plain: Would you support the enactment of tough motor-vehicle inspection laws by states that do not have them?

Leierzapf: Compulsory vehicle inspection not only of regulated carriers but of all motor-vehicles is an expensive and hard to come by condition. I'm not so sure that the monies that would be spent to force compliance would do as much good as stepped up educational programs for the motoring public and officials operating motor fleets. I would rather that monies spent for elaborate testing

lanes run by questionable attendants and subject to the political problems that have been inherent in such programs in the past be spent for stepped up driver testing that might prove more profitable in the end in reducing accidents. I don't mean to infer by this that the cost of maintaining a vehicle in proper working condition should be overlooked. There should be strong enough penalties for any type of condition that is discovered or which causes accidents to be an incentive to maintain vehicles properly.

Wadsworth: There is currently much dialogue concerning impact worthiness of automobiles, together with the strengthening of impact design of bumpers and common bumper heights. Do you think these and similar changes are feasible or do you feel that some of these will not come about when comparisons are made on a cost benefit analysis basis?

Crews: There is no doubt that there could be a tremendous improvement in the crash worthiness of vehicles. Perhaps such strengthening will ultimately cost considerable money, as forecast by the manufacturers. I'm sure not the least of their concerns is sacrificing design programs for crash worthiness. Since design is a part of the great American dream, the manufacturers embellish that dream and cater to the whims of the buying public. Much of the things we look for in accident prevention could come about by a strengthening of public support through education of buyers, and I'm afraid this includes some of the areas of fleet operations just as well. You're going to get what you pay for, and if you're buying looks and economy versus protection and utilization, there could be a vast difference in dollars.

Kendrick: The Secretary of Transportation is required by the Federal Aid Highway Act of 1970 to submit recommendations for a future federal highway program to Congress early in 1972. If your voice could be heard, what do you believe should be some of the most important features of these recommendations?

Leierzapf: We sought a response to this question from some of the experts and one reply said: to make absolutely sure that the highway trust fund remains intact so new work can be adequately financed and completed; recommend needed new highway construction programs to fully serve the current and projective needs of the highway transportation system of the United States; avoid costly frills such as beautification, etc., until the actual highways are constructed and completed; require meaningful driver licensing and vehicle safety inspection standards by individual states and, where states will not adopt such requirements, withhold highway construction and maintenance

Nichols: For those who are interested in studying the suggestions concerning a continuing federal aid highway program we would suggest that the American Association of State Highway Officials' testimony to Congress be referred to. The April 1971 issue of *American Highways* lists 22 items for which there was an overwhelming majority vote to promote or continue. A few of the topic headings are: for a continuing program; for continuation of highway trust funds; for maintenance obligations; for maintaining the interstate system schedule; for matching ratios; for simplifying federal aid procedures; for advanced plans; for highway oriented urban mass transit; for bridge replacement programs and major bridge programs.

The biggest problem that faces the transportation industry is to prevent the diversion of funds to other than highway uses.

Wadsworth: Do you think drunk driver laws are strict enough and how would you suggest they be beefed up?

Wren: The overwhelming evidence that alcohol played a part in more than 50 per cent of traffic accidents leaves little doubt that something must be done. Unfortunately, this is an area in which dollars and political expediency are involved. The dollars not only reflect monies spent for the alcohol, but revenues and even the monies involved in conviction of driving under the influence. When persons reach the level of influence by alcohol used by most states to determine "under the influence," the person has exceeded the point at which he should be allowed to drive by quite a margin. It is also known that many people have driven while under the influence of alcohol, perhaps to a lesser degree than that used to determine alcohol blood ratios, and gotten away with it. If a drinking driver is a poor driver to begin with, chances for his involvement in accidents is much greater. I don't think you're going to change America's drinking habits, but certainly a way to cope with them if they are going to drink is to make sure, and darn sure, that they know how to drive in the first place if they are going to drink.

Kendrick: Should the transportation fleets make a greater effort to report unsafe conditions such as poor signing, bad lighting, bad road surfaces, and the like to proper officials?

Leierzapf: We have followed such a procedure for many years. The information comes in from many sources, such as our chauffeurs, patroling supervisors, road inspectors, and other personnel assigned to study special high accident routing. We've had a great many traffic control signs and utility poles relocated in order to provide greater clearance between the side of a bus, for example, and the curb. In addition, the overhanging boughs of trees have been trimmed, awnings raised or shortened, etc. Information received is channeled through our office to the Traffic Planning Department and the appropriate authority is notified. We also follow the same procedure when we believe physical changes or improvements should be made to traffic facilities such as curb cutbacks, greater radius corners, the improvement of street lighting, the revision of traffic signal installations, and so forth. We have received good cooperation in this regard over the years.

Wheat: Do you believe that "no fault" insurance plans will affect safety programs and insurance rates?

Fortune: First, I believe we should note that "no fault" is a very general term which has been rather carelessly applied to a large number of plans, most of which bear a certain amount of similarity to each other but which are not by any means identical. Most of these plans guarantee the payment of certain amounts of money to anyone who is injured in a motor-vehicle accident. To the extent that these payments do away with the employment of attorneys to prosecute these cases, and therefore do away with the attorneys' fees, the plan should definitely reduce the amount of money paid out and, therefore, reduce total losses, resulting in lower premiums. This subject is being debated and there appears to be a growing swell of opposition to the idea from some insurance quarters and from attorneys. Naturally, they will attempt to protect their interests.

As to the effect of these plans on safety programs, this is something that no one can predict at this time. Since some of the plans tend to do away with the principle of fault, that is to say, to do away with any accountability for causing the accident, some individuals feel that they will reduce the incentive for safety programming. On the other hand, many of the plans do provide for a "charge back" of the cost or a portion of the cost of the accident to the responsible party. This is usually accomplished through an arbitration agreement between the involved insurance companies. Under this type of arrangement the occurrence of the accident will have a very definite effect on the rates of the driver judged to be responsible, and we would have exactly the same incentives operating that we do have right now.

It should also be pointed out that under some of these plans, there is very special treatment provided for the fleet insured. Any fleet operating in a state where these plans are being considered would be well advised to very carefully examine the plan being proposed for its state.

Kendrick: Just as "no fault" insurance programming is a relatively new subject of concern in the area of accident prevention, all of us face another topic of major importance that is assuming and will continue to be a factor in discussions in accident prevention work for many years to come: the Williams-Steiger Occupational Safety and Health Act of 1970. Not only did the act change some of the ground rules for record keeping but it required changes to be made in programs, defining where the records are to be maintained, how they are to be maintained, and what they should include.

Nichols: Naturally, with operations scattered throughout many locations in the United States some of the provisions of record keeping in the new OSHA regulations require a revamping of former systems, some

new concepts of record keeping, and some questions as to what is acceptable and what is not acceptable to the inspectors who will ask to see these records when they visit properties.

First of all, the Occupational Safety and Health Act requires a decentralization of record keeping so that records are maintained at "the place of employment" regardless of where this may be. Many fleets have dissimilar operations or divisions within a single location, such as maintenance, sales, office, etc. The requirements for separate logs, separate supplementary records, and summaries can be complied with even though a single person is assigned at the location to take care of several sets of records.

One of the most drastic changes in the new Act is the departure from old Z16 record keeping standards to those now required by the Department of Labor. It will mean that if you are to compare present accident experience on the same basis as you kept records under Z16 in the past, you may have to, at least for awhile, keep dual sets of systems: one under the old Z16 provisions of the American National Standards Institute, and one for the required recording of accidents under the OSHA regulations. There is no doubt that this will require additional work on the part of many operators, especially those who have not provided in-depth accounting even for their own programs in the past. It has been reported that the new system presents some clerical increase work loads.

As time goes on and experience is gained with the new system, some of the bumps will be ironed out and such things as providing forms and systems that make the record keeping compatible to computer programming will be worked out if for no other reason than to provide us with the stepped up in-depth study of occupational injuries so necessary in the establishment of remedies and the prevention activities.

Kendrick: For those of you who have been under the regulations of the Bureau of Motor Carrier Safety or must comply with other agencies of the federal government, you have seen that changes in regulations also frequently bring with them corrections, interpretations, and new provisions. These are, of course, placed in the *Federal Register* by the departments involved. For example, under the OSHA Regulations Section 1904.3 on May 10 the *Federal Register* indicated that logs would be established on a fiscal year basis, and on July 2, 1971 the Section was changed to reflect a calendar year basis. How do you plan to keep posted on the frequent changes that will take place from time to time and will require the scrutiny of interested parties to make sure that information reaches everyone?

Fortune: Most persons indicated that they keep up with the changes by subscribing to services such as those provided by the American Trucking Association which publishes a weekly resume from the *Federal Register* of all safety items. These items appear as they are printed in the *Register* except in those instances where the information is extremely detailed and lengthy. Even so, these can be obtained by writing for them. Furthermore, it would pay to keep on top of these new regulations by getting acquainted with regional OSHA offices and submitting questions to the people in these offices whenever there is a doubt.

Loshbough: Should the National Safety Council and other organizations step up the review of new and proposed safety regulations to provide information and training?

Fortune: Yes, I believe the National Safety Council and other organizations such as the American Society of Safety Engineers, The American Trucking Association, and various other trade associations should step up the review of new and proposed safety regulations to provide both information and training. With the proliferation of new and proposed statutes affecting health and safety, the average safety director is hard pressed to make practical decisions when confronted with a maze of legal implications and ramifications of innumerable federal and state laws which often appear to be in direct conflict.

These organizations should be making reports on new and proposed safety regulations in a clear, concise, and complete manner. For example, the National Safety Council has recently published a continuing Newsletter on OSHA doings and has instituted discussions of the OSHA regulations in all of its

training programs. In fact, it has provided training for some of the OSHA people at Council headquarters.

Naturally, legal aspects of these regulations should be closely watched by the attorneys of the various trade associations and notice provided to memberships. All of these additional services will cost money. I don't think any of us expect this kind of additional programming without some reflection on the cost of staying informed. Training programs, of course, should be selfsupporting and should be as widespread as possible to reach as many of the fleets in this country that need this service.

Plain: Do you anticipate any problems of official inspections and the right of employees to request an inspection of your premises under the new OSHA regulations?

Nichols: No, I don't anticipate any problems as long as the inspectors will follow the guidelines and rules that have been set forth. Conversations with OSHA people indicate that they are obligated by departmental rules to honor and investigate only written complaints submitted by employees. They are obligated to communicate with the individual making the complaint either personally or by mail to get enough information to make certain the complaint isn't based on personal bias rather than factual information. They will not honor or investigate anonymous complaints from persons who refuse to identify themselves.

They are obligated to provide the employer with a copy of the written complaint and may withhold the name of the complainant if he so desires. We welcome OSHA people conducting inspections of our terminals. We feel that our facilities, housekeeping practices, and equipment maintenance can withstand any inspection they care to give. I would say that some of the standards need careful scrutiny by the trucking industry, and perhaps variances will be applied for where there is a direct conflict with practices that have been effect in the industry for years and which have proven themselves to be safe.

Wheat: Under the OSHA requirements are such that adequate records must be kept of employees exposed to potentially toxic materials or other harmful agents. Also, monitoring and measuring of exposure is required. Does the motor transportation fleet area have any particular problems in this connection?

Fortune: The fleet operator has two possible areas of concern.

First, and this would be particularly true of the maintenance facilities, they must make sure that the solvents, degreasers, and any other materials of a toxic nature are fully covered in procedures and that adequate ventilation and personal protective clothing is provided. Also, exhaust could be a problem in confined areas unless exhaust withdrawal systems are in operation.

Second, insure that the vehicle exhaust system is functioning properly to guard against fumes entering the vehicle. This is especially true in the variety of vehicles carrying passengers.

Wadsworth: What areas of concern do you think your employees or employee candidates will find most critical, such as noise, working conditions, etc.?

Wren: Persons queried on this question did not seem to believe that there were any special problems confronting the servicing of motor-vehicles since they have tried to keep on top of these items to avoid complaints from employees or their representatives over the years. For example, in shops where heavy repair work is done which would create an extra amount of noise, steps are taken to hold the noise level to a reasonable and tolerable condition. In shop areas where it is necessary to operate engines while making regular inspections and tests there have been exhaust systems installed to keep fumes out of the work area.

Prior to a mechanic being assigned to make repairs to the engine it is steam cleaned, and all engine parts are cleaned in the standard 330 cleaning solvent which has an extremely low flash point and no fumes or toxicity. Another responder said the largest area of concern of our non-driving employees is exhaust fumes from idling engines. Although sample checks have been made at various locations where there seems to be the greatest concern, tests have found that the exhaust fumes are far below the dangerous level and it is the odor rather than any dis-

comfort from the fumes that could be an objectionable factor.

Kendrick: Within the structure of OSHA regulations there is a provision to request variances (Section 1905) in effect. This allows for delays and temporary noncompliance if hardship or valid technical problems can be substantiated. Can you think of any such factors in fleet operations that might require such action?

Crews: We haven't been able to come up with a great deal of concern along these lines that would require a request for delay and temporary noncompliance. This does not mean, however, that as the National Institute for Occupational Safety and Health is implemented under the Department of Health, Education, and Welfare and additional research is undertaken and more experience with the present standards adopted by reference that there may not be some chance for concern. Perhaps the small fleet operator may find he will have to invest in equipment or systems that may not have been required heretofore. The Act also tries to soften this blow by providing loan help through the small business administration when the applicant qualifies for such help.

Cottrell: Do you feel the conviction of continuation of a known unsafe condition of plant or vehicle should result in the charge of criminal negligence in addition to the penalties imposed by the law?

Wren: I believe that an unsafe condition of a plant or vehicle is similar to pointing a loaded gun at a group of people and pulling the trigger. We have a responsibility to our employees to maintain facilities and vehicles so that injuries do not occur. Every effort must be made to live with the regulations. If we fail, a charge should be levied. There may be some hardships because of construction and finance costs, but every endeavor should be made to protect employees, since they are a valuable asset. If there are boobytraps contained in the regulation my investigations have not brought them to light as yet.

Perhaps one of the most notable changes would be a penalty clause on unsafe acts by the employee. As it stands he will go scot free and the company incurs the penalties. If the penalty clause has merit it is only to speed up the corrective action necessary to remove the unsafe condition in the plant or vehicle.

Wheat: Do you believe in making company inspectors and others such as supervisors personally liable for accidents through failure to discover, report, or correct unsafe conditions to officials? If so, should any penalties be imposed?

Fortune: Personal responsibility implies being totally or primarily responsible. This is certainly a condition of owners and management and usually is identified with the executive group of any organization. I don't believe that personal responsibility can be implied. It must be established through job description regulation or law. Often, unsafe conditions are not the responsibility of any one person, particularly in motor transportation. The complexities involved may result in a supervisor being unable to discover a condition that can trigger an accident. I would not suggest this as a means of stepping up the pace of detection. Rather, I would suggest that where there is need supervisory training be undertaken so supervisors fully understand their responsibilities to cooperate with management in the reduction of unsafe conditions.

Plain: Would you support the idea that a reduction in workmen's compensation should be established when it can be proved that an employee contributed to his injury by his own negligence?

Wren: My feelings would point in the direction of doing something about employee negligence. However, negligence can be determined only at the time of adjudication by an industrial board or at the time of an actual hearing before the board. Thus, any reduction of indemnity or medicals would have to wait upon the results of the hearing.

As the law now stands, the employer is automatically negligent. Determination of negligence is a whole separate segment of the law and any change would require extensive lobbying at the legislative level of each state to amend existing compensation law. Under the new Occupational Health and Safety Act the burden of supplying a hazard free work area is clearly that of the employer and very little appears in the Act that would help us in changing present conpensation laws as to

employee negligence. However, the *Federal Register* of September 15 announced a public hearing by the National Commission on State Workmen's Compensation Laws for the purpose of hearing "arguments relating to the general question of whether state Compensation laws provide an adequate, prompt, and equitable system of compensation."

Wadsworth: The Occupational Safety and Health Act has a policy of "worst first" on which to zero in on high frequency industries. Motor transportation has been ranked among the top dozen high frequency operations. What steps should transportation take to put their house in order before they are required to do so by inspectors?

Fortune: The first things we have to do is to comply with the record keeping requirements and maintain accurately the log of occupational injuries and illnesses on form OSHA No. 100. Furthermore if our industrial injury report form does not comply with OSHA No. 101 we have no other choice than to make this 101 out in addition to our industrial injury form, or make our report form to contain all the information noted in 101. Of course, our premises must be obtained in a neat and orderly manner as much as possible by good common business practices until such time as we can observe all the requirements that are contained in the standards. While it is impossible to comply with the exact wording of the standards in every case, fleets can be in general compliance by determining what OSHA considers to be a safe working condition and eliminating hazards in various phases of its operations. This will entail attendance at meetings conducted by the industry and by OSHA to gain an understanding of the regulations and what OSHA will require. It also entails establishing an organizational procedure within the fleet for removal of hazardous conditions and to assure that hazardous conditions do not arise. Some of the basic steps that can be taken involve good housekeeping, proper maintenance of equipment and facilities, and enforcement of basic safety rules. Very little of OSHA requirements relating to truck fleets are of such a sophisticated degree that they will require large outlays of money to purchase specialized protective equipment.

Loshbough: The OSHA accident reporting and record keeping system will differ from ANSI Z16 Standards. Will you continue to evaluate your safety program in terms of Z16 so you can compare on a like basis your program of the current reporting periods to previous years?

Nichols: Actually, in previous years our record keeping system on employee injuries which we have on computer was far more extensive than that required under Z16 reporting standards. I think we will be able to make definite year to year comparisons with what we previously recorded without too much trouble. On the other hand, Governor Pyle, President of the National Safety Council, made a plea to keep Z16 going and alive for a while anyway so that it can be compared with the OSHA Standard system and previous years to determine some representative type of information for comparative purposes.

Loshbough: Provisions in the OSHA regulations make it possible for a state meeting the requirements to establish jurisdiction. Do you favor state or federal jurisdiction?

Leierzapf: Many states already have the law, the offices and trained personnel, and the field programs for carrying out various aspects of the Occupational Safety and Health Act of 1970. The cost of training new federal personnel as well as the establishment of field offices and programs by the federal government when most states already have these things seems to be an unnecessary expense. Furthermore, most state programs are really years ahead of what would be new federal programs and would seem for this reason to be in the best position to adopt and expedite the federal program. Also, the procedures found in federal programs are so inflexible that they cannot be properly adopted to individual state or local stations where a state jurisdiction and its flexibility would overcome federal inflexibility. For these reasons, it would seem that the various states that can qualify should do so.

Wheat: Are you having any problems determining whether it is the Bureau of Motor Carrier Safety Regulations that apply or the new Occupational Safety and Health Act?

Fortune: I suppose the person who could

answer that question right now with any degree of authority would be able to name his own price. I can only suggest this: You are going to have to record the accident in your own records anyway. Why not follow OSHA's plan and put it in your records? At the same time, if it is an accident that must be reported to the BMCS, do it and don't quibble. The BMCS wants reports, the OSHA wants records. You need records so where's the problem? (One area that seems to be a stumbling block is the details within the hazardous materials section 170 to 179 of title 49 of Federal Regulations. About 800 of the more than 900 pages is devoted to the transportation of hazardous materials and dangerous articles. I'm sure there's going to be some overlap between this and the hundreds of standards that have been incorporated in OSHA.)

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National Safety Council

A Membership Organization Dedicated to Protecting Life and Promoting Health

March 21, 2001

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