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Papers Delivered in the

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School & College Sessions

EDUCATION'S RESPONSIBILITY FOR A TOTAL SAFETY EDUCATION

By DR. GARLAND GODFREY
President, Central State University, Edmond, Okla.

In our democratic way of life, each individual operates upon certain basic principles. Those principles are generated from past experience in a society ever-changing and viable. They emphasize the need for self-realization and encourage a critical evaluation of living leading to a better way of life.

The following basic principles may be suggested as giving some guidance in the development of a comprehensive program in safety education as an integral part of a total education program.

1. Safety education is a responsibility of the whole society. It should be consistent with society's best understanding of human growth and development.
2. Educational institutions must provide competent leadership in promoting and providing education for safe living.
3. Instruction in safety education and safety services must become an integral part of the school program—understandings, desirable attitudes, values, skills, emotional stability, habits, and appreciations, which enable the learner to meet the responsibilities necessary for safe living.
4. The school should utilize the service of community organizations.
5. Safety education should develop a continuous awareness of the value of human life and the physical well-being of individuals, and at the same time recognize the achievements of other agencies in satisfying these needs.
6. Safety education must be continuous and contribute to the enrichment of all areas of life.
7. Continuous evaluation and research should be carried on to determine the practices which are valuable and to improve on those practices.

Now, let us look at some essentials and

procedures in developing and structuring a comprehensive education program in safety education to implement the principles just described.

First, let us discuss the needs in an educational program for safety services and, second, let us discuss the need for teacher-education programs designed to provide an adequate number of qualified staff to provide those services, for all grades—kindergarten through the twelfth grade.

Safety education services may be provided through proper administration and supervision, through instruction, and through public relations. Safety education programs, to be most effective in preparing pupils to perform daily desirable safety activities, should embrace a staff designated and given responsibility for designing, directing, assisting instructional personnel, and supervision and administering all phases of the safety education program. Those persons designated should be charged with the responsibility of developing safety policies and evaluating the program on a continuing basis. Those persons should be chosen because of interest, enthusiasm, and competency for this discipline. Since schools vary in size and available personnel, I suggest the following guidelines for assigning personnel to administer and supervise the program.

1. In small schools, a staff member might be relieved from extra-curricular activities and devote part-time to safety education.

2. In medium-sized schools, one or two persons may be designated on a part-time basis as director of safety education and given the responsibility for planning and directing the program.

3. In very large school systems, it seems appropriate to employ personnel to devote full-time to this all-important task. In order

that the safety education program be carried out by the personnel assigned, job specifications should be developed. The director, supervisor, or specialist in safety education should be the administrative head of this division. He should be directly responsible to the superintendent of schools.

The person responsible for the program should work closely with directors of elementary and secondary education, the general curriculum director, the director of instructional supervision, the engineering department, the buildings and grounds department, and the custodial department to coordinate safety activities. This will insure greater consistency with the goals and objectives of the entire instructional program.

Administrators of the safety education program, whether part-time or full-time, should develop policies, practices, and procedures concerning safety education, or they should revise or update current policies and practices as need arises within the framework of policies adopted by the board of education and the local school administration.

Policy statements should be very brief and not too extensive. For example, it may be stated as follows: "The Fire Prevention Code of — School District requires that a minimum of — exit drills be held in each school annually and a citation may be given. Fire drills should be conducted not only to secure the orderly and rapid evacuation of buildings, but also to teach self-control."

Though policies and procedures require board approval and the approval of the school administration, other school personnel should be deeply involved in developing those policies and procedures that affect them. Those who develop such policies and procedures should keep in mind that the welfare and the protection of all the students should be considered.

In large school systems, it is not possible for all staff members to participate or to become involved. Therefore, representative groups from different grade levels, subject matter areas, administrative areas, maintenance areas, cafeteria areas, and others should be considered in developing policies and procedures.

Also, in developing some policies and pro-

cedures, it may become necessary to involve certain branches of governments—city, county, and even state. For example, in Oklahoma, the local fire department and local police department share responsibility with school administrators when calls are received of a bomb plant in a building.

Among safety policies and procedures which need be developed in a school system are those of accident reporting, caring for pupils injured while under school jurisdiction, plans for emergency drills, calls concerning bombs placed in buildings, motor vehicles driven to school by students, interviews and/or removal of pupils from school by a law enforcement agency, molestation of students, school bus transportation, safeguards concerning educational excursions, use and storage of flammable materials in school buildings, sending pupils on errands, and sending ill pupils home. It may be necessary to add others or to delete some of those mentioned, depending on the particular school district.

It was reported above that one of the policies to be developed should be concerned with accident reporting. A comprehensive accident reporting system has at least four major objectives, namely: preventive, defensive, protective, and constructive.

Accident reporting is a preventive device because it alerts educators and other school personnel to hazardous conditions and provides clues to dangers which may be corrected or lessened or even avoided. The program of preventive measures should be closely correlated with a well-planned periodic inspection program. This program includes inspection of the total school plant, the grounds, and the play equipment.

Accident reporting serves as a defensive aid in judicial proceedings which come about from the result of an accident. In a lawsuit, the basic questions of negligence and liability usually revolve about facts concerning an accident. Occasionally, it takes months and sometimes years after an accident has occurred before the case is brought to trial. In this situation memories have faded and prejudices and sympathies have been built in one way or another. The accident report which includes detailed information can be helpful.

Sometimes this is the only evidence in a defense.

Accident reports serve as a protective aid in a suit brought against school personnel who have liability insurance. In such case, the defense is usually taken by the insurance company lawyers. Most insurance companies receive an immediate report of accidents from their clients. The defense may need to photograph the scene, to communicate with witnesses, to secure other information which may be essential to them relative to the accident. This requires thorough preparation and a knowledge of facts which may be obtained from an adequate reporting system.

Accident reports may serve as a constructive device in bringing about a natural and spontaneous motivation for safety education. They provide basic information for determining areas in which safety education should be stressed or in specific areas where policies and practices should be improved. If the educational program is to provide for the safety needs of pupils, some method is imperative for identifying those needs. Accident reports can assist in doing this because information obtained from them may serve as a guide in determining what procedure to follow in improving conditions.

Thus, a comprehensive reporting system serves many good purposes in the safety education program. It provides basic information that assists in determining the area of safety instruction that should be stressed at a particular time to meet the needs of the pupils in a certain geographical area.

It furnishes information which serves to help locate hazardous conditions that can be eliminated or lessened.

Summaries of the accident reports serve as one criterion for evaluating the effectiveness of the safety education instruction. Supplemental accident data can be secured from the local enforcement agency and local fire department.

An adequate instructional program must also be provided in the area of pupil services in order to make a safety education program comprehensive and serviceable. Traffic safety education should be provided for the pedestrian, the operators of two-wheel motor vehicles and bicycles, school bus operators in

proper driving practices, pupils boarding buses, unloading, crossing roads, streets, railroad crossings, and in individual driver education and passenger service. Educational instruction should be given in fire prevention, fire protection, and fire control under varying conditions.

School plant safety education should be available in the areas of school buildings and school grounds. Accurate reporting and evaluation will show that in school buildings the high accident locations are usually found in the heating plant, in the industrial education areas, in the physical education plants, in the home making departments, the science laboratories, stairways, and corridors. Knowing these facts, those charged with the responsibility of the safety education program can take preventive steps to remove any hazards which may appear and relate those facts to the instructional staff for transmission to students.

In the area of playground safety, the following considerations should be given: proper selection of equipment, proper location of equipment on the grounds, correct use of equipment, and a periodic maintenance program. Thus, a comprehensive instructional program to provide safety in school services and proper practices in safety education could be provided to all students.

One of the big problems in providing an adequate safety education program arises as to its place in the curriculum. Should it be in a separate department? Should it be an integrated part of the curriculum? Should it be correlated with other areas? This problem is one which must be met by the individual administrator in his particular situation.

Much help may be provided in carrying out policies and procedures in the safety education services by enlisting voluntary student organizations as well as student interested in safety education. A student organization, if democratically operated, will provide a great deal of leadership and, also, will produce many good ideas on how safety services can become more effective in a school system. Unless one solicits the support of the students and of the faculty, it is very difficult to provide the safety services needed. Also, organizations in the community may be enlisted to

assist, such as a local safety council, civic groups, society safety engineers, Red Cross, insurance companies, chambers of commerce, business and professional women's clubs, Boy Scouts of America, and others.

Now, let us direct our attention to the next facet of a comprehensive safety education program. The first which we have been discussing is safety services to be provided for pupils while at school, on the way to and from school, and in the home and community.

Our attention now is directed toward the preparation of professional personnel by teacher-education institutions capable of providing safety education services for pupils. The content and experiences of the professional curriculum is very important in the total teacher-education program of an institution. This curriculum should be designed to develop competencies needed by teaching personnel at any level. Included in those competencies are a thorough understanding of the body of knowledge in safety education, instructional strategy, evaluative techniques, organization and administration of safety education programs, inter-relationship of all aspects of safety education, and as it has been mentioned before, how to evaluate the effectiveness and the research problems relative to safety education.

Now briefly, let us discuss some of these facets of a comprehensive teacher-education program in safety. A thorough and meaningful understanding of the body of knowledge available is basic to the teaching of any discipline. The field of safety education is extensive and embraces such areas as the physical, biological, and behavioral sciences, to mention only a few of the contributing sources. While mastery of the content of the subject field is properly classified as professional competency, the body of knowledge itself comprises a large area of the recognized discipline of safety education. The subject-content should include subjects which stress mental, physical, and emotional characteristics of individuals.

Instructional strategy, or how to make the instructional program effective, seems to be the "guts" of a quality teacher-education program for safety personnel. Here we must

be concerned with up to date content development, methodology, current materials of instruction, evaluation, and other elements of a systematic approach to teaching. All prospective instructional personnel need experience in and should be required to write objectives relative to each area to be taught in safety education. Those objectives serve a dual purpose for the instructor in determining what is to be taught and in providing a means of evaluating the instruction to see what degree of achievement has been reached at the conclusion of the instruction.

Dr. Robert Mager suggests that the instructional objective be written in terms of performance. That is, what, to what degree, and under what conditions the learner will perform following the instruction of a particular area.

In addition to the above consideration, Dr. Ralph Tyler recommends that experiences in the development of "instructional models" should become another profitable effort toward improvement in the teacher-education program. On his instructional model, he suggests that the instructor first specify precise objectives in terms of learner behavior; that he pre-assess the learner's behavior relative to the objectives; that he devise an instructional sequence consistent with the best that is known about how pupils learn; and that he evaluate the post-instruction performance of the learners so he can make appropriate decisions regarding the instructional sequence.

Certain principles are necessary to guide the learning process and must be incorporated into the program for prospective teachers. Among those are included the following: how to determine what pupils already know in this discipline; how to motivate pupils by relating instruction to local conditions and needs; how to select teaching methods relative to course objectives and individual differences of pupils; and how to utilize opportunities outside regular class periods, such as individual counseling, student safety activities, and interpretation of content with other disciplines in the school.

Other experiences for the prospective teacher certainly should include student teaching in the classroom, as well as managing student safety services under the direction

of selected teaching personnel.

In selecting prospective teachers for the teacher education program, the administrator should consider student achievement as being directly related to teacher effectiveness and competence. Therefore, the prospective safety education teacher, supervisor, or administrator should be an individual who meets the academic, ethical, and moral standards appropriate to the teaching profession. He should be committed to a career in safety education, and he should have demonstrated the maturity and stability necessary for giving guidance and direction to the learner.

Summary

A comprehensive safety education pro-

gram will be concerned with services to the pupils—kindergarten through the twelfth grade—at school, on the way to and from school, and in the home and community. There should be a great deal of carryover from school to daily living.

A comprehensive safety education program should be concerned with the training of teachers, supervisors, and administrators who are vitally interested in safety education, who have a body of knowledge to impart about safety education, who have the techniques and ability to impart this knowledge, who can evaluate the effectiveness of the program, and who can adjust the program to the current needs of students.

ILLINOIS SCHOOL SAFETY PROGRAMS —TODAY AND TOMORROW

By EDWARD JOHNSON
Dir., Safety Education; Office of Superintendent of Public Instruction,
Springfield, Ill.

The Illinois Safety Education Section's involvement in the Annual Highway Work Program includes; development of a comprehensive Safety Education Program, K-12; Pedestrian and Bicycle Safety; Motorcycle Safety; Driver Education Curriculum Development; and Post-Driver Education Instruction Program.

The curriculum guides that are presently available to all school districts in our state are: Ped-Bike K-8; General Safety, K-3; Bus Driver Education; Driver Education—Handicapped; and Motorcycle. Each of these is presently being introduced and implemented in the local school districts of our state.

The objective of the Illinois Safety Education Section this current fiscal year is to conduct workshops in local school districts to encourage and inform teachers and administrators of the availability of the curricula materials. We have chosen to utilize manpower instead of postal power to introduce and implement these curricula materials. Why?

Being involved in education as we all are—just stop a moment and reflect on the volumes of material that you receive through the postal service everyday. How much of this is overlooked and not reviewed probably as it should be?

This year we are involved in a transition from specialists in specific areas to that of a safety generalist consultant. Each member has been assigned to a geographical region of the state and is our contact person for matters that pertain to safety education.

Each of the Section members will present a portion of the total package that is offered to our schools.

Pedestrian and Bicycle Safety Education:

NORMAN AUSTIN

A comprehensive Pedestrian and Bicycle Safety curriculum for the elementary and junior high schools of Illinois is available upon request of the local school administrator. The curriculum, entitled "Safety Education Units for Illinois Elementary Schools, K-5," was developed by teachers for students based on student needs. During the 1972-73 school year, approximately 50 per cent of all elementary schools in Illinois had access to this curriculum. Grade levels 6, 7, and 8 are available and will be distributed first to those schools who have previously implemented the curriculum in grades K-5.

Development of this curriculum has been a part of the Annual Highway Work Program and also one of the program standards of the National Highway Traffic Safety Administration. The vast majority of children of both sexes own and use bicycles by the time they are six or seven years old. The victims of bicycle accidents are predominantly children with most fatalities and most injuries occurring in the age group of five to 14 years. The great majority of bicycle fatalities occur in collisions with motor cars. The increasing use of bicycles by adults can be expected to increase the magnitude of the bicycle safety problem.

The development of this curriculum followed an extensive survey, both state and national, to determine the needs by levels in content areas. Contracts were issued to school districts for teachers to develop the material. Under these contracts, units were developed, piloted, revised, again piloted, printed, and finally implemented.

The units of instruction include areas in pedestrian, bicycle, school bus, in-car, and in-school. All units of this curriculum use the

interdisciplinary approach and include level, content area, stated objective, discipline, materials, and activities, with continuity from grade levels K through 8. The previously accepted method of teaching safety—the do's and don'ts and rule memorization—has failed to develop proper safety attitudes. Furthermore, this curriculum is one that a teacher can teach from and lends itself to team teaching, to traditional classroom, as well as individualized instruction.

Implementation of this curriculum has primarily been accomplished on a county-by-county basis and is not distributed in a general way. The Safety Education Section welcomes requests from superintendents of educational regions or local school administrators to provide workshops for teachers to introduce this material.

Safety Education, K-12:

THOMAS ALEXANDER

A Safety Education curriculum, K-3, has been developed along the same lines as that of the Pedestrian and Bicycle Safety Education curriculum. Extension of this curriculum will eventually become a comprehensive safety education curriculum for grades K-12. The first four grade levels of this curriculum is ready for implementation now. The units of instruction in the initial publication, K-3, includes areas in recreational, school, home, traffic, hazardous weather, holiday, and vocational work safety. Each lesson uses the interdisciplinary approach and includes grade level, lesson number, content, theme, stated objective, suggested application, materials to be used, and learning situation activities. The lessons are so constructed as to permit the teachers to use any lesson at any time to seems appropriate.

This curriculum, Safety Education, K-3, is available upon request of a local school administrator or superintendent of educational service region, and preferably on a county wide basis. Workshops are conducted on a county or local district or attendance center basis.

Demonstration/Satellite Project:

CHARLES ARMITAGE

The Safety Education Section has ventured into a bold, innovative curriculum re-

vision for driver education by establishing and adopting a performance oriented curriculum which eventually will serve as a valuable evaluation tool when adapted to the various programs generated throughout Illinois school districts. This plan has been developed by the Safety Education Section and has been funded as a part of the Federal Highway Traffic Safety Act of 1966. Cooperating in this activity are the Illinois Department of Transportation, which is responsible for funding, and several state university traffic safety departments who under contract have developed curriculum materials being tested in selected high schools.

The plan for implementation of the Illinois Driver Education curriculum utilizes a small core of exemplary driver education programs selected on the basis of local interests, number of students, and ability to incorporate the curriculum in a three or four phase driver education program. The purposes of this Demonstration/Satellite curriculum project are to bring about improvement in present driver education programs through a task analysis approach; encourage the exchange of ideas, information, and material; assist in standardizing such areas as student testing, curriculum conduct, program objectives and evaluation; and to provide curriculum materials with continuity throughout the state. Furthermore, the task analysis approach utilized in the development of the curriculum material lends itself to individualization of instruction.

Two exemplary programs in driver education, Glenbrook North and Reavis Township High School, have been serving as demonstration schools in their particular areas of the state. Although each program is unique in that Glenbrook North is on modular scheduling and Reavis has a traditional schedule, both school districts are examples of what can be accomplished in total driver education programming. Each has developed curricula emphasizing individualized instruction, contract teaching, and specific student learning packages to meet the needs of students in their district.

Three additional demonstration schools have been designated this year to assist in the further implementation of the state driver

education curriculum. These are: Mascoutah Community Unit High School, Joliet Twp. High School, and Irving Crown High School. Approximately 28,000 students will be enrolled in the project during the school year.

Materials developed by the Demonstration/Satellite schools and the participating universities are furnished at no cost to the participating schools and will, as they are developed and refined, be provided other schools not now a part of this implementation program.

Driver Education For the Handicapped:

WARREN STISKA

When the Federal Highway Traffic Safety Act of 1966 was enacted, funds became available for curriculum development and implementation for the physically, as well as mentally, handicapped. The handicapped person does drive, with or without proper instruction.

Surveys and visitations to schools were made to determine what was being done for the handicapped and what problems existed. Successful techniques were compiled and organized, again using the task analysis approach. It was found that some schools were making special efforts with the handicapped. In many cases it was found that the student was not being successful in the regular driver education program or not being involved in such a program at all. These students were found to be learning the task of driving on their own or with the aid of friends.

The curriculum developed for this area of instruction was tested at five schools. Revisions were made and further field testing completed. With all entries written in behavioral terms, proven classroom activities and suggested materials are included with each objective. In addition, administrative guidelines are provided.

It has been determined through follow-up studies in cooperation with local schools and the secretary of state's office that those who have had special instruction do have a better driving record than the total population of motor vehicle operators. It has further been determined that a driver's license for the handicapped is an equalizer, often showing a

definite improvement in personality and posture after earning the license.

Included in the Driver Education for the Handicapped curriculum are, among other things, proven techniques for involving parents, pattern techniques, suggestions for materials and aids which may be improvised by the teacher or secured at a minimal cost, as well as recommendations to the school of companies willing to loan hand controls for the physically handicapped.

This curriculum is to be distributed to the superintendents of educational service regions, administrators, and driver education and special education departments throughout the state. In addition, workshops are available through the Safety Education Section.

Motorcycle Education:

EARL ANDERSON

As a part of the Annual Highway Work Program, funded by the Highway Safety Act of 1966, motorcycle education has taken a prominent place. This educational program has primarily been used to evaluate the present motorcycle curriculum and to train future cyclists in existing laws and fundamentals necessary for the safe operation of cycles. During the 1972-73 school year, 19 high schools, under contract with the Office of the Superintendent of Public Instruction, offered experimental and evaluative motorcycle instruction programs. During the 1973-74 school year, an additional 15 schools will be under contract with this office to further test and evaluate the motorcycle education curriculum. These programs are conducted after school hours and on Saturdays.

Instructors in this program must be a qualified driver education teacher and must hold a valid Illinois driver's license with motorcycle endorsement. Students enrolled in the course, or volunteers, may be male or female, must never have been a licensed cyclist, and must be enrolled in the driver education course or have completed same.

The student must attend 12 hours of classroom instruction and receive six hours of on-cycle instruction, all in an off-street area. Such classes are to be completed in from three to eight weeks from the starting date.

The curriculum for motorcycle education instruction has been developed and field tested over a period of four years. Copies of the curriculum, which will become a part of *Driver Education for Illinois Youth*, will be distributed to all public secondary schools, private, parochial, and independent schools who conduct their own driver education program, as well as to governmental agency schools.

Evidence of the need for motorcycle instruction is evidenced by the report of the Illinois Department of Transportation for the year 1972, which shows that 130 cyclists lost their lives and nearly 3,700 cyclists received injuries as a result of motorcycle accidents. With the ever increasing number of motorcycles and their operators, instruction in safe operation of the two-wheel vehicle becomes a must.

Generalist Concept:

GARY ANDERSON

Effective July 1, 1973, the Safety Education Section changed its operational concept from that of specialist to generalist in Safety Education. The generalists have been assigned to eight geographic areas of the state. Involvement in Safety Education for the generalists will include Driver Education, Motorcycle Safety Education, Safety Education, K-12, and Pedestrian and Bicycle Safety.

Driver Education

The Office of the Superintendent of Public Instruction is charged by state statute to provide a quality and comprehensive Driver Education program in all public secondary schools. The statute mandating this program is found in The School Code of Illinois, Section 27-24. Currently, Illinois' eligible students between the ages of 15-18 years are completing the driver education course at a 95 per cent rate. Nearly 200,000 such students complete the course during each school

term.

Driver Education for Illinois Youth, a guide including organization, administration, and supervision of the driver education program, as well as a curriculum outline, is in the hands of all secondary schools of Illinois. In addition, copies of this guide have been distributed to private and parochial schools and governmental agencies which provide a driver education course for their students. This publication also contains rules and regulations for administration of the Driver Education Act.

The task for tomorrow is to follow up on the introduction of the curricula that will be accomplished this year.

Presenting in the FY 1975 budget, the Section has included provisions to develop additional curricula materials in the following areas:

1. Performance-based, inservice programs for elementary teachers.
 2. Implementation of a safety education course at a teacher training institution.
 3. A model curriculum guide for commercial schools involved with teenage driver education.
 4. Modification of the federal and state alcohol curriculum for classroom instruction, K-8.
 5. Emergency driving course for the 11th and 12th grades.
 6. A driver education supervisor's manual for high schools.
 7. Modification and adaptation of the K-8 Pedestrian and Bicycle Program for ethnic groups.
 8. Modification of the manual *Driver Education for Illinois Youth* into a bilingual guide.
 9. An evaluation study of the Pedestrian and Bicycle instruction.
- Should the previously mentioned activities be approved in the FY 1975 budget, the Section will be quite involved in the future.

THE ROLE OF SAFETY EDUCATION IN THE TOTAL SCHOOL PROGRAM (THE GORDON C. GRAHAM MEMORIAL LECTURE)

By JOSEPH J. DAVIES

Supt., St. Bernard Parish Schools, Chalmette, La.

A program of human conversation requires leadership and direction. Whoever is to provide that leadership must think of safety as an educational endeavor continuing throughout life.

Learning the technique of safety must begin at the earliest possible age as a part of the regular school curriculum. In an effort to develop desirable attitudes as an integral part of the individual's character, the school must provide for well-planned sequential learning experiences in safety for all pupils at all grade levels.

Safety must be a part of an in-depth interdisciplinary curriculum within the framework of existing curricular offerings. Since early childhood is the most productive and economically sound period of life in which to develop appropriate attitudes and behavior patterns, a safety education program which is meaningful and relevant to the life pattern of students should begin at this level.

For the development of a safety education program which meets the needs of all students, an accident reporting system is a necessity. This reporting system must be a valid one which provides school administrators and teachers with the kind of data that are vitally necessary for a successful program. The report must provide data which can be used in the development of viable, continuous programs based on student needs. Louisiana's student accident reporting program, which was the first state-wide program in the nation, was accomplished under the leadership and guidance of Hemby Morgan, without whose help this program could not have been developed.

In my own district, St. Bernard Parish, the first organized efforts in safety education

were in the area of driver education, which is the usual starting point. The program evolved from a one teacher operation to a team teaching approach using the three phase program-classroom, simulation, and on-street instruction. Recognizing that the program was not meeting all of the needs of the students, the administration began to look for funding through ESEA Title III, one of the few sources of money available in the mid-sixties. During the period when plans for a multi-vehicular laboratory were being developed, the government eliminated all capital improvements from project funding and, as a consequence, the local board approved a sum of \$167,000 for the construction of the laboratory on land acquired through the federal government's surplus property division. The laboratory was designed to be used to instruct all students in all phases of traffic education, as well as driver education. In the meantime, Operation Safety, a Title III ESEA Project, had been funded and we were ready to begin. A full-time director for driver and safety education was employed.

During the summer of '71, curriculum materials for driver education, as well as a curriculum guide in general safety for use at all levels of instruction, were developed. These guides were developed by teachers under the leadership of the director and two consultants, Hemby Morgan, former Supervisor of Safety for Louisiana State Department of Education, and Richard Boyer of Evanston, Illinois. At the present time, a continuous progress program in safety education is in effect in all 17 schools of my district.

In addition to the development of an elementary safety curriculum, a performance-

oriented program of study in traffic education for the secondary schools has been developed. The result—a study of student needs—was transposed into an experiential and success-oriented curriculum. The basic concepts are inter-related throughout all phases of instruction.

Although we are excited about and pleased with the progress which has been made, we realize there is still much to be done. Because our role is a leadership one in Louisiana, we were asked by the State Department of Education through a two-year project funded by the Louisiana Highway Safety Commission and the National Highway Traffic Safety Administration to produce a guide in pedestrian and cycling safety for use in Grades K-9. Following a series of workshops last summer, faculty committees are now developing a rough draft of the curriculum which will be evaluated after field testing in certain of our schools next spring. Indicated revisions will be included in a preliminary draft of the curriculum which will be tested in all of the schools in the district during the '74-75 year. By June 30, 1975, a final draft of the curriculum will be turned over to the Louisiana State Department of Education for dissemination and use in all of the schools of Louisiana.

I have attempted to portray one school district's commitment to a total safety education program for its students and for the community. It is an integral part of a district-wide individualized continuous progress pro-

gram of education which reaches beyond the walls of the school and into the community by means of an adult driver education program and through community projects conducted by our Youth Safety Council. The program is one which is practical and meaningful to each student and is fused into all areas of the curriculum, rather than an isolated program to be treated separately away from the mainstream of learning experiences. A lay advisory board serving as a liaison agency between the school and the community has gained for us public support and the financial aid required to provide the kind of program our community needs and wants.

A continuous evaluation of the role of safety education must take place to insure a flexible and adaptable program. Recently, the State of Louisiana included the whole concept of career education in its guides for every area of the curriculum, and in order to insure a valid career program in the area of safety it appears that occupational safety must now be included.

In conclusion, safety education is a continuing process which should be initiated at the earliest possible time in a child's life in order to fix behavior patterns. If we are truly concerned with the grim statistics of accidents, then the whole range of human conservation activities must be given top priority in our school programs. It requires commitments from everyone dedicated to meeting the challenge in the area of safety.

ANXIETY AS A TEACHING TOOL-GOOD OR BAD?

By HAROLD J. GRIEVE

Manager, Traffic Safety Education, Arizona Highway Department, Phoenix, Ariz.

Is anxiety as a teaching tool good or bad? Is it good for a teacher to scare his students? It depends, doesn't it? It depends on why the teacher is using this type of material. Does he simply have a sadistic streak, or is it a filler? Has he run out of ideas, or things to do?

It depends on whom it is used. Is this a selected or random audience? Is he dealing with children, young adults, or adults? Is it a captive or free moving audience?

It depends on how it is used. Does the instructor have a plan? Is there a build-up? Is there a let-down? It depends on many things.

To answer the question "Good or bad?" let's first review some of the arguments for the use of anxiety provoking presentations; secondly, consider some of the arguments against this sort of material; then let me give you some of my feelings about the subject, including a look at the system I have developed and used over the past ten years.

First, arguments for the use of an anxiety provoking presentation. Let's look at some of the advertising sent out in advance of one of these films:

This new film shows decapitations, multiple compound fractures, intestines strewn over the road, flesh burned from bones, and arms and legs torn from the human body. Not a pretty picture, but the horrible impact will bring home to the most complacent the greatest danger of modern living—death by automobile! This is such a dramatic and graphic film that seeing it will make a more careful driver out of you, or you will give up driving altogether!

I'm not sure that the function of traffic safety education is to drive people from the road, but to carry on. An argument against the use of this type of presentation is provided

by Dr. James Malfetti, of Columbia University:

The theory used in scare technique programs is avoidance behavior, but it is usually easier to induce someone to recognize the desirability of behavior change in others than to see it in himself. Driving is no exception. Surveys have established that most drivers, the majority, consider themselves superior. The wrecked cars and broken bodies incorporated into some scare programs go against this image of self-esteem, *Good Driver Me*. The statement, "Don't let this happen to you," is for someone else. In all fairness to the driver, it seems that scare techniques have overworked the image of the homicidal maniac, an image with which the average driver will not identify. We know this, but have tended to conclude that the self-image is wrong, that the driver deceives himself, and that he must be forced to admit his guilt. Even if we succeed in convincing him of this, we have not produced a satisfactory attitude. Guilt does not lead to constructive self discipline. It leads to resentment of critics, avoidance of the guilt producing situation, or submissive conformity. Perhaps it is time we worked on the assumption which the facts prove, that the accident potential is, like ourselves, a fairly responsible well-intentioned human being.

A fairly well intentioned human being, who made a mistake! And now, some of my feelings on the subject. In the film library at the Arizona Highway Department we have six films of this type: *Signal 30, Mechanized Death, Wheels of Tragedy, The Unhatched, Highways of Agony, and Red Asphalt*. Occasionally, we have teachers request several of these

films at one time. When this happens, I wonder, really, what their intentions are. Before discussing whether we should use anxiety provoking presentations though, we should have a clear idea of what anxiety is. We should try to define it. Here are a couple of definitions. The first is from Dr. Paul Hoch, who is a psychologist:

Although it is widely recognized that anxiety is the most persuasive psychological phenomenon of our time, there has been little or no agreement on its definition, and very little if any progress in its measurement.

The interesting points here are, first of all, that anxiety is a very powerful thing, and secondly, it is largely unknown. We are dealing with a powerful medicine, about which we know very little.

Dr. Sandoz Rado also is a psychologist. He puts his definition of anxiety in perhaps just a little more understandable form for us. He says:

In common English usage, anxiety means distress of the mind, caused by the apprehension of danger, but softened by the hope that the danger will pass.

The interesting point here is that hope, the effect of human nature on our subject, may aid us in the use of this very powerful medicine. But, how can, or should, it be used? Let me outline how I have evolved, through the years, a system for this.

When I first became involved in traffic safety education I was an extremist on the point of scare tactics, firmly entrenched in the "Give 'em hell school." I'd helped to pick up the pieces and I wanted everyone to know what it was like. But then I had some negative experiences, some illnesses, fainting, some minor injuries, and I reacted. I stopped in the never, never, never school. I stopped using accident materials altogether. It was more comfortable, but I got to thinking. Was I as effective this way as I could be? Could the answer to my question, "Good or bad?" lie somewhere between the extremes? I started slowly feeding a little accident material back into my programs until the following strategy evolved. Following are the basic five steps I try to use whenever I present an anxiety provoking film.

1. Screen the audience. Be sure to tell your students that this is a film of real people involved in real accidents, and that it is filmed in living color. Invite them not to stay if they know this type of program is not for them. Be sure to tell them that you can make other arrangements for them. You might also mention what to do if they remain and then decide they would rather not watch the film. They can put their head down on the desk, or look away.

2. Introduce the film. Explain what you expect from the students. In the case of one of the films, *Wheels of Tragedy*, I have had note sheets printed for classroom use. I ask the students to watch for three categories of information which they can get from the film. These three categories are: cause of the crash, warning signs that the drivers received previous to the incident, and possible preventive action they feel the drivers could have taken. They are to get this information for each driver involved. For example, in a two vehicle crash, they will need this information for each of the two drivers involved. At the end of the film, we go through the note sheet point by point, for each driver, to get an idea of the factors that caused the crashes and the actions that could have been taken to have prevented the accidents. I have found that after I started using the note sheet, I have had far less trouble with illness or emotional problems on the part of the students. They tend to take a more analytical attitude toward the film, rather than just sitting there letting it affect them emotionally.

3. Show the film. At this point, stay in the room. This is no time to run errands, or go for a cup of coffee. It is advisable to stay near the front of the room if possible. Normally there is enough light in the room so the students can take notes and you can watch the audience. Often, you can see if any of your students are being adversely affected by the film and perhaps be ready if they have some sort of negative reaction.

4. Give instructions. This is the point at which we review the note sheet and go through the three factors of cause, warning signs, and possible preventive action.

5. Lead discussion. Open the floor for re-

action from the students. Provide trigger questions such as: "Have you ever been in a situation like the young lady in the fifth accident?" Or the instructor can bring up pet points on drugs, speeding, or perhaps various local traffic problems. In any event, the whole process, including the film, should take up a full 50 or 60 minute class period.

There you have arguments for and against the use of anxiety provoking films, my feelings about them, and my system developed through the years. But how do you feel about this kind of thing? Think about it! If you

elect to use anxiety provoking presentations, if you succeed in raising the anxiety level of your audiences (and you surely will, regardless of the defense mechanism joking and requests for pop corn). But if you then fail to capitalize on these teachable moments you will miss a golden opportunity, at best, or possibly do more harm than good, at worst.

Remember what Dr. Hoch has told us about anxiety. If you use this strong medicine, do so with discretion and handle it with care!

COMPETENCY-BASED PREPARATION AND CERTIFICATION FOR DRIVER EDUCATION TEACHERS

By THOMAS A. SEALS

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Over a period of forty years, driver education has sought to become an integral part of teacher preparation programs carried on by colleges of education. In general, the pattern of driver education teacher preparation implanted within these institutions of higher education has been in conformance with time-based courses offered by other subject-matter areas. Considering the number of colleges and universities now offering undergraduate and graduate degrees in driver and safety education, measurable success has been achieved.

Beginning in the 1930's, conduct of five-day short courses by Neyhart, Stack, Key, Kramer, Danford, Strasser, and others was the springboard for current accomplishments. These early courses for both high school teachers and college professors attempted to sell students on the potential contributions of education to the solution of highway safety problems, placed appropriate stress on the need for developing as well as implementing minimum standards for time allocation, and gave students an overview of the enormous body of knowledge related to traffic safety education. Throughout these early years, leaders in the specialty field strived to establish one, two, or three time-based courses as minimum requirements for preparation and certification of driver education teachers. Aware that the relatively small number of preparation courses could not guarantee top performance among teachers, colleges and universities were encouraged to provide more extensive preparation by expanding the number of course offerings. Constant pressure was applied to certification divisions of state departments of education, asking that minimum course requirements be increased.

These efforts produced limited results. Very few states can claim that the number of course offerings or requirements is on par with other subjects. So, within a limited time frame, driver education teacher preparation personnel have encouraged future teachers to utilize self-study and progressive experience as a means of achieving acceptable performance ability. This is to say that, throughout the history of driver education, leaders have advocated expansion and improvement of time-based teacher preparation and, at the same time, urged future teachers to improve their performance through participation in workshops, inservice activities, study of current literature, and field experimentation. Endorsement of time-based teacher preparation was in conformance with tradition. Emphasis on self-improvement was on the cutting edge of progress since work by individuals to meet particular needs is an integral part of competency-based teacher preparation.

Reviewing the present status of driver education teacher preparation among the nation's colleges and universities, the struggle for an increased number of required courses is continuing. And, although progress is slow, certification requirements for driver education teachers in some states are on par with requirements for other subject areas. Increasing numbers of colleges and universities are providing undergraduate and graduate degrees in driver and safety education. Therefore one may argue, with some logic, that there is a positive correlation between the number of teacher preparation courses successfully completed by individuals and the level of their performance in the high school classroom and laboratory. To my knowledge, no formal study has demonstrated that such

a positive correlation exists. However, let us assume that a teacher who has a background of five courses in the specialty field can perform better than a teacher who has participated in one or two courses. Provided that each of the courses consisted of appropriate content and learning experiences managed by innovative professors, the observation makes sense. On the other hand, one might question the efficiency of this means of assuring competency of driver education teachers. When a series of formal and time-based courses is required, challengers interested in efficiency might ask questions such as: How much duplication of content exists among the courses? Can duplication of content be justified as reinforcement of learning? What percentage of the content has already been mastered by what percentage of the future teachers? Will repetition of content already mastered reduce the enthusiasm of learners? What are the relationships between course content and the actual functions of on-the-job driver education teachers?

You will agree that an analysis of current driver education teacher preparation courses offered by even the best colleges and universities would reveal much duplication of content, would contain a considerable amount of information already possessed by many students, and would be attended by substantial numbers of students who do not develop a sincere desire to become master teachers of driver education. The availability of a variety of courses designed to provide future teachers with opportunities to obtain competence is desirable. But, in order to reach this lofty goal, a new look should be taken at course content and how it is presented.

If you are active in driver education teacher preparation and possess a defensive attitude about time-based preparation and certification, please ask yourself the following questions:

1. During your first year of teaching high school students, did your college preparatory work make the job easy?

2. Was the content of teacher preparation courses congruent with duties assigned you by school administrators?

Chances are that you learned more about teaching during the first year of experience

than during the four or five years of formal preparation. One obvious reason for this was that, in general, teacher preparation course content is seldom based on actual, real-world functions of teachers. Therefore, revamping and improving the effectiveness of driver education teacher preparation courses should begin with an analysis of desirable functions of high school driver education teachers. These functions can well be labeled as competencies. Identification of desirable competencies should form the foundation of teacher preparation in driver education. A second step is to develop a variety of learning environments in which future teachers can acquire each of the competencies without wasting time and effort on matters which are not relevant, or toying with knowledge already acquired. A third step is to produce evaluation techniques and procedures which will enable both students and teachers to determine whether individuals or groups have attained the identified competencies. The three suggested basic components—identification of competencies, development of flexible learning environments, and evaluation—are in line with the pattern for curriculum development using the modular approach. In regard to the latter, students and teachers work with performance objectives stated in terms of measurable human behavior, students select from a variety of learning activities those which meet their individual needs, and students and teachers cooperate in evaluative processes without wasting valuable time. In other words, competency-based teacher preparation is in conformance with modern approaches to student learning.

At this point, no institution of higher education in the United States has fully developed and implemented a competency-based teacher preparation program for driver education. No state department of education placed such plan into effect for certification purposes. In many locations, however, people are active in the developmental stage. The Florida Department of Education, for example, has taken the position that teacher preparation and certification practices in all subject areas should move decisively toward a performance base. As a result, the Transportation and Safety Unit of Florida State Uni-

versity is working as rapidly as possible toward this end. Currently, through a task analysis approach, desirable functions of driver education teachers have been tentatively identified. Based on a listing of these functions or competencies, the staff is wrestling with problems related to adapting course content, structure, and student learning activities so that future teachers can efficiently acquire the competencies in order to function properly in the field. At the same time, the staff is exploring alternate methods of determining whether individuals or groups have acquired the competencies. When the job is completed several years hence, it is foreseen that:

1. Undergraduate courses will be streamlined so that the content of the series will consist solely of learnings of direct value in teaching driver education.
2. The number of undergraduate courses will be as small as possible.
3. Learning experiences within each of the courses will be progressively arranged.
4. The role of professors will be to facilitate student learning rather than to direct what students are supposed to learn.
5. With appropriate implementation of individualized learning approaches, instructional strategy will focus on meeting needs of individuals. Students will participate only in learning activities which meet their individual needs.
6. When completing the series of courses, students will have been evaluated for achievement of all essential competencies.
7. As far as is practical, self-pacing will be allowed. This means that students who meet established evaluative standards will not be required to attend all sessions of a given course or, in fact, enroll for all the available courses. It is possible, theoretically, that a student with sufficient study and experience could meet competency requirements, receive full course credit, and become certificated without enrollment in a single course.
8. When evaluative procedures reveal that a student is capable of satisfactory performance in the field, the Florida Department of Education will issue certification papers based upon written recommendation from the Florida State University College of Ed-

ucation.

In regard to the last two predictions, consider a hypothetical case in which a teacher from another state seeks a certificate to teach driver education in Florida. The Florida Department of Education would consider academic and work experience in determining the probability that the individual could execute the desirable functions. For verification, the Department's Certification Division could choose to refer the individual to a teacher preparation institution such as the FSU College of Education for competency evaluation. In a period of from three to five days, the person would undergo the evaluation process. A first stage could be a paper and pencil test to determine the level of knowledge related to highway safety, goals and objectives, teaching methods, student assessment, etc. This extensive evaluative document's content would be based on the premise that one cannot and will not perform in a desirable manner if he or she does not know what students should learn and how they can best learn under given conditions.

It may be that certain competencies may best be measured by self-evaluation with verification. This second stage could include competencies associated with certain aspects of program interpretation, community service, and self-improvement. The second stage would be applied only to those competencies which cannot be measured adequately by paper and pencil tests or are not practical for measurement by direct observation in a real or simulated environment. The latter type of measurement would constitute the third stage of evaluation. In order to be assured of total performance capability, students would be observed by a panel of persons with proven competency. For example, a conjecture is that an individual's ability to teach effectively on an off-street multiple car driving range, in a simulator or multimedia laboratory, or in a regular classroom environment can best be measured by observation of performance in working with high school student learners. The observing panel would use a carefully developed checklist to score selected facets of competencies relating to specified types of student learning environments.

From the total evaluation process, let us assume that the individual made an acceptable score in many competency areas but was too low in other areas. The person could choose to attain ability in the low areas by self-study, obtaining field experience, or enrolling in a series of teacher preparation courses, a single course, or selected portions of one or more courses. When indications exist that the individual can perform the identified functions, he or she would be allowed to be re-evaluated on those portions of the evaluation process in which he or she was deficient.

The preceding discussion should illustrate that evaluation of competencies is most difficult when a premium is placed on accuracy and practicality of measurement. From a comparison viewpoint, the tasks of identifying desirable functions or competencies and applying them to instructional strategy are easy.

In reference to identification of desirable functions of driver education teachers, the FSU Transportation and Safety staff has grouped the functions and subfunctions under four areas: planning and administration, management of student learning, school and community service, and self-improvement.

Planning and Administration

Under the area of planning and administration, the high school driver education teacher:

1. Assists in developing and/or adapting goals, general objectives, and operating policies or procedures.
2. Assists in developing and/or adapting plans for program organization and supervision.
3. Assists in developing and/or adapting plans for course structure as it relates to units of instruction.
4. Helps plan and provides specifications for classroom and laboratory environments.
5. Advises in regard to selection of personnel, facilities, equipment, media, and materials.
6. Develops and maintains a functional record and reporting system.
7. Assists in the scheduling process.

Management of Student Learning

Management of student learning is a very important functional area in that its content deals directly with the teacher's ability to bring about student learning. Thus the teacher plans for student learning by:

1. Selecting, adapting, and/or formulating behavioral objectives based on the tasks people perform as participants within the highway transportation system.
2. Making appropriate assignment of objectives to the classroom phase, the laboratory phase, or both, as well as to the several units which may be contained in each phase.
3. Organizing defensible teaching sequences and giving an acceptable rationale for the order.
4. Developing lesson strategy, with each module containing a relevant objective or series of objectives, practical and effective learning experiences derived from the objective or objectives, and meaningful evaluation procedures.

5. Developing lesson outlines which recognize varying attention spans of students, employ a variety of approaches to learning, enable students to acquire skill in problem solving, and provide opportunities and guidance for student decision-making.

6. Developing lessons which adapt materials and methods to levels of ability and experience of students, utilize appropriate media to present concepts, integrate major concepts from other disciplines as they become relevant, and supplement lessons with relevant assignments.

7. Using test results to improve instructional strategies.

The teacher implements learning activities by:

1. Using behavioral objectives effectively.
2. Allowing students to know what is expected of them.
3. Helping learners determine for themselves appropriate directions and activities for achievement of learning objectives.
4. Giving precise directions for carrying out instructional activities.
5. Explaining basic concepts clearly.
6. Using learning experiences which develop inquiry, decision-making and problem-

solving skills.

7. Directing learning processes so that students acquire information, clarify their beliefs, and develop perceptual-motor skills.

8. Exhibiting proficiency in organizing small group and individualized instruction.

9. Establishing and maintaining a learning environment which stimulates student interest.

10. Enabling students to explore personal values, attitudes and beliefs.

11. Motivating students to express their feelings perceptions, and emotions.

12. Helping students respond critically and constructively to one another.

13. Applying student ideas by using them to reach an inference or the next step in an analysis of a problem.

14. Leading discussions effectively.

15. Asking questions which require other than rote memory.

16. Redirecting appropriate questions.

17. Relating subject matter content to performance.

18. Providing relevant examples which illustrate given subject content.

19. Refraining from criticizing students openly through sarcasm.

20. Giving individual attention to students in and out of the classroom.

21. Operating audio-visual equipment.

22. Varying the pattern of lesson presentation.

23. Identifying and alleviating causes of learning difficulties.

24. Resolving discipline problems effectively.

25. Reviewing and summarizing effectively.

The teacher evaluates student achievement by:

1. Developing guidelines for program evaluation.

2. Constructing pre- and post-tests designed to improve course effectiveness and to measure student achievement.

3. Using a variety of evaluative techniques to assess all aspects of student learning.

4. Providing activities through which students can assess their own progress.

5. Evaluating student performance in accordance with criteria derived from course objectives.

6. Analyzing group and individual strengths and weaknesses.

7. Maintaining a record of class and individual records.

School and Community Service

In the area of school and community service, the teacher:

1. Contributes to activities designed to improve traffic and general safety on the school site, the surrounding area, and the community at large.

2. Assists in planning for effective safety instruction at all grade levels.

3. Interprets the driver and traffic safety education programs to the community.

Self-Improvement

In regard to self-improvement, the teacher:

1. Sets a good example as a traffic citizen and highway user.

2. Participates as a member of local, state, and national professional organizations.

3. Participates in inservice activities, workshops, and credit courses to improve teaching performance.

4. Evaluates his or her own teaching performance for the purpose of improving ability in regard to management of student learning.

While the preceding functions are by no means complete, the sampling may serve to encourage teacher preparation personnel to refine and expand the list, make use of the identified functions or competencies to rebuild and improve course content and structure, and build into driver education teacher preparation viable and efficient evaluation procedures. Competency-based teacher preparation has the potential of producing improved performance at a lower cost. The field of driver education can and should move decisively toward competency-based teacher preparation.

WISCONSIN SCHOOL SAFETY COORDINATORS ASSOCIATION—ITS ACTIVITIES

By GERALD BENKA

Director of Instruction, Cudahy, Wisconsin, Public Schools;
President, Wisconsin School Safety Coordinators Association

The Wisconsin School Safety Coordinators' Association has grown—Wisconsin has truly been on the move. In all phases—organization, membership, implementation, and promotion of safety in our schools—we have made much progress.

Several years ago we had a group of eight interested people, the nucleus that formed our association and gave it impetus. By the way, none of the eight were dues paying members! Last year, out of 444 school districts, 357 had someone appointed as safety coordinator. From our first annual conference in 1966, where only a few dozen attended, last March we had 240 in attendance.

We have been fortunate to have state superintendents and local district superintendents who are interested in our philosophy and objectives. From time to time our state superintendent will endorse a letter which goes out to all school districts urging participation in the activities of our group. Certainly the local district administrators are vital in helping our association function.

What are some things we do and have done to improve and promote all phases of school safety?

We publish a newsletter three times per year. The School Safety Signal keeps our members posted and highlights new ideas and legislation. We try to keep it brief and informative. One sheet, both sides.

An evaluative criteria was designed to assist schools in evaluating safety programs. It has been accepted for use on a voluntary basis by the North Central Association and is being used nationally. Last year, several of our members served on NCA evaluative committees in our Wisconsin secondary schools. We have been disappointed that more of our secondary schools have not re-

quested this service as part of their evaluation. However, we will keep offering this service.

An accident reporting form was developed by a committee of teachers from five school districts and piloted by eight schools. The first couple of years, few used it, but now it has caught on and we had trouble filling orders last year.

A filmstrip was developed in cooperation with our state department of instruction and Allstate Insurance Company depicting many school and community safety activities. It was filmed in one of our Wisconsin school districts. Its purpose is to show interested school personnel how to initiate similar programs.

We have put together a *Reference Guide for Safety Education* which is most helpful in organizing, administering, implementing, and evaluating a workable safety program. Members of my system have repeatedly referred to this guide for help and ideas. Every fall I duplicate certain sections of it for custodians, teachers, and principals. Some of the items in this guide are a model school safety policy, suggested projects for operating a school safety program, playground checklist, areas of concern in grades K-12, school board policy, etc. Our board of directors has as one of its projects this year the revision of this guide.

Several of our officers and members as well as some of our classroom teachers were very active in working with the department of public instruction and the Division of Highway Safety in putting together a *K-9 Traffic Safety Curriculum Guide*. Part of one of our annual conferences was devoted to explaining its contents and critiquing it. Presently, the Department of Public Instruction is exploring the use of the K-9 safety education

materials in statewide educational TV during the 1973-74 school year.

Our Annual Spring Conference is usually held the third week in March. It is an all day affair where we attempt to emphasize a couple of topical areas of safety. We have had five of these state conferences thus far. Some of the areas we have included are the role of the safety coordinator, bicycle safety, safety town, school emergency preparedness (pan-ty and negligence, video tape presentation of a 4th grade class employing a lesson in safety, and various AV materials viewed. Personnel who took part in our programs were teachers, superintendents, National Safety Council, district attorneys, P.T.A. representatives, etc. For next spring we are definitely going to update our members more on OSHA and possibly something dealing with playground safety.

We have a committee working on certification of school safety coordinators. Permis-

sive certification—the establishment of standards for certification but not required to hold or get a position.

We even have our own banner.

Who are the people who make up our Board of Directors? Over the past few years we have had elementary principals, a member of the AAA, driver education supervisor, school bus coordinators, college professors, physical education department chairmen, and teachers.

Organized school safety problems are relatively new on the education scene. A well planned safety education program affects the total school operation and curriculum. Our association's aim is to help school personnel correlate and integrate safety within courses and activities so that the boys and girls in our schools will live safely and effectively. Very, very few schools have full-time safety coordinators. Most of us have several additional assignments within the system. We are trying to help one another.

WISCONSIN ON THE MOVE—HOW TO MAKE TOTAL SCHOOL SAFETY PROGRAMMING WORK

By DON GEHRMANN

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Safety education must be seriously considered as one of the important facets of the education program requiring the full and unqualified support, as well as daily attention, of all staff members. Every school in Wisconsin is morally and legally responsible for the safety of their pupils. School administrators should be cognizant of the laws of Wisconsin relating to general school operations. In *Wisconsin Laws of 1969*, Chapter 118, curriculum requirements provide that "every public school shall provide instruction on the prevention of accidents and promotion of safety on the public highways."

Why is safety education a necessary part of a person's formal education?

Safety education contributes to the development of a person's characteristics of responsibility, respect, and cooperation which are vital for a satisfying, efficient, and productive life. Safety education offers excellent opportunities for the development of decision making, a prerequisite for good judgment. Teaching students how to live as safely as possible amid many hazards is an imperative part of their school experience.

The function of the school safety program is:

1. To avoid preventable accidents.
2. To develop an attitude of safety mindedness among students that will endure through their school experience and extend into their adult lives.
3. To protect school personnel against liability judgments.
4. To develop good citizenship qualities and healthy attitudes in regard to safe behavior at school, on the highway, at work, in the community, and in the home.
5. To provide suitable established safety procedures for all students and employees of

the local school district.

Safety education should be integrated into all grades and subject matters, from kindergarten through the 12th grade. The teacher is the key to an effective safety program. He or she must consider safety as an integral part of the teaching task and carefully plan, with fellow teachers, to teach the essential components of safety at the appropriate time during the total school experience of students.

The following steps are necessary for a school district to implement a comprehensive quality safety education program:

1. Enlist State Support. The school district should request consultative services and instructional materials developed through the state department of education or public instruction. It is important that school district personnel are cognizant that full and unqualified support is given to the safety education program by the state superintendent. It is also imperative that the liaison person be designated by the state superintendent to serve as a specialist in safety education to assist the state school districts with their program's organization, development, implementation, and evaluation.

2. Establish School Board Policy. The school board of each district needs to adopt a written policy regarding the district's responsibility to promote and develop an aggressive accident and prevention program for students and professional/non-professional personnel employed by the district. This written school board policy will also give program status and prestige to help implement a total district safety and accident prevention program. A sample model school board safety policy should be made available by the state department to be utilized by school districts.

3. District Administrator Shall Appoint Safety Coordinator. The responsibility for developing a total safety program should be delegated to a competent professional staff person who will be directly responsible to the superintendent or assistant superintendent or another administrator of capable rank. In Wisconsin, we prefer to title this responsibility school safety coordinator, commensurate with his facilitating task. The role of the safety coordinator should be a combination of administrative and coordination task concerned with the overall safety aspects of the school system. The school safety coordinator's appointment should be made known in writing and confirmed by school board action. Announcement of this appointment should be made through the school superintendent to principals, who in turn relate the information to all school personnel.

4. Establish Advisory Committee. Upon his appointment, the school safety coordinator should establish an advisory committee composed of students, teachers, administrators, and community representatives. This committee will offer direction to the school safety coordinator for the planning and implementation of the school district's safety program.

5. Conduct Curriculum Survey. A teacher program curriculum survey is a prerequisite in the establishment and development of what safety subject matter is currently being taught. The survey should point out the weak and strong areas of concentration within the curriculum at the present time and also show teachers' strengths and weaknesses in time and effort spent on safety activities. This K-12 curriculum survey is a significant and necessary step before improvement and coordination of safety activities can be established. This survey will be the foundation and basis for establishing certain safety activities at certain grade levels depending upon the strengths and weaknesses as found in the survey.

6. Develop An Accident Reporting Program. The school safety education program has the responsibility of meeting its objectives to reduce the number of accidents and injuries through implementation and evaluation of an innovative school safety program.

General Utilization: Secure data information regarding unsafe acts and conditions causing accidental injuries and deaths to students. This gathering of data is essential to curriculum planning, efficient implementation, and future evaluation of an effective school safety program.

Special Application: Assist in the protection of school personnel and school district from imprudent publicity and from liability suits developing from student injury cases; Help in evaluating the importance of the various safety concepts and the appropriate time allotment for each concept in the total school safety program; Suggest curriculum changes that reflect what has been found to cause accidents; Provide significant data for individual student guidance; Gives meaningful information to the school administrator's appeal to the community aimed at developing understanding and support of the school safety program; Accident reporting creates awareness to teachers and administrators of accident causation and produces consciousness of possible action for future accident prevention.

7. Provide Consultation Services and Create Model Programs and Activities. Through the efforts and leadership of the state consultant, effort should be made to contact prominent and concerned school safety coordinators to establish a safety coordinator organization to act as the nucleus and foundation for future safety coordinator education and orientation. The Wisconsin School Safety Coordinators Association was organized in 1968 and presently has 357 members. This organization has sponsored newsletters; developed evaluative criteria to assist schools in evaluating safety programs; developed a "Reference Guide for Safety Education" which is most helpful in organizing, administering, implementing, and evaluating a safety program; and have actively engaged in the organization of the annual spring conference for the orientation of new safety coordinators and instituting instructional ideas and safety innovative materials for the more experienced safety coordinator.

Model programs, ideas, and activities have been developed and are available to school districts for the organizing, implementing,

and evaluation of their current safety program, as well as the development and improvement of safety programs in their particular school district.

In the recent Newsletter of the School Safety Administration and Supervision Section of the National Safety Council, the following statement was made regarding the safety education program ongoing in the state of Wisconsin: "When it comes to the promotion and development of 'Total School

Safety Programming,' the nation's leader has to be the Wisconsin School Safety Coordinators Association."

This is high praise from a most respected national organization. This recognition is due to the leadership that our local school safety coordinators have contributed to our association and the many programs that have been implemented in Wisconsin schools.

SAFETY—AN IMPORTANT LEGACY

By JOHN E. CORBALLY, JR.

President, University of Illinois, Urbana, Ill.

Many of you who have had long histories of working with the School and College Section of the National Safety Council may be surprised to discover that I am not the John E. Corbally who played a key role in the establishment of this Section within the National Safety Council. I am going to take just a moment to report upon his whereabouts.

I do recall the times he used to abandon his family in Seattle to ride the train to Chicago for National Safety Council meetings and I, along with thousands of other students at the University of Washington, am a graduate of his course in safety education. I will not reveal the grade I received in that course or in two others I took under his guidance, but I can assure you that his reputation for scrupulous fairness in all things would not be damaged if you were to examine my transcript of grades from his courses. After serving 42 years on the faculty and as an administrator of the College of Education at the University of Washington, Dad retired in 1969. He and my mother live in Seattle, where he still spends a day or two a week on the campus working on his theories of probability and of vectors in the card and billiard rooms of the Faculty Club. Those of you who worked with him will be pleased to know that you can still read his mood by analyzing the amount of redness rising up from his shirt collar and that you can still count upon him as a man of integrity and of ideas. He has asked me to bring his special greetings to you and I am pleased to do so.

The basic facts concerning the needs for both safety procedures and safety education in our schools and colleges are so simple and so obvious that it is difficult to find new ways to describe them. It is clear that most of us would not be as relatively unscarred and healthy as we are if others had not been concerned about our safety. I do not believe that we live in a cruel world; indeed, I believe the

opposite—that our world is a world of beauty and of opportunity. But we do live in a world which contains risk and in which carelessness and thoughtlessness are often preludes to trouble. And we, human beings, are at the same time both strong and fragile. We are magnificently complex beings with almost innumerable interdependent parts, and it is not too difficult to get ourselves into situations in which we endanger the workings of those mechanisms.

We are also basically fearless and optimistic. As youngsters we are unaware of the need for caution and for care, and as we mature we too often recognize the dangers which others face but fail to apply that recognition to ourselves. I know that one should be concerned about seat belts and about fire safety and about many other things, but after all, one with my skills and abilities certainly does not need to concern himself with such artificial aids or distant problems.

In spite of ourselves and because of the work of many who have preceded us, we have managed to get this far safely. But it is our business to be concerned about the future, and it is our business to be concerned about ourselves and those to whom we serve as examples. We must perform the difficult task of instilling an awareness of safety problems and a commitment to do something about those problems in those with whom we work. At the same time, we must do so in ways which do not instill unnatural fear nor diminish the joy of life in those with whom we work. We must attempt to enlighten rather than to frighten; we must present the need for safety as a positive and contributing factor in life rather than as a negative list of deterrents to living. We must find ways to convince people that a concern for safety is a concern for the full life rather than a barrier to the full life.

As I walk about the campuses of the Uni-

ersity of Illinois for which I am responsible, I am often filled with wonder by the successes we have achieved in safety and in the elimination of the ravages of accidents. The fact, for example, that 35,000 students can move about the Urbana campus—almost half of them on bicycles—without daily accident tolls reminiscent of a major war seems almost a miracle. But it is not really a miracle, it is the result of hard work on the part of a number of people. One can detect many other such seeming miracles wherever he works or lives and can always count upon the fact that the miracles are, in reality, the legacies of those who work on behalf of safety and of safety education.

As is true of almost all great human undertakings, efforts on behalf of safety must be never ending efforts. What we really seek to achieve is the development of attitudes. Every kind of mechanical device which is installed on behalf of safety can be short-circuited by a creative human being with the wrong attitude. I understand, for example, that already one can find those who can and will make the necessary adjustments to permanently override the new 1974 interlocking seat belt systems in our automobiles. I often am amused, incidentally, by those who meekly and rapidly engage their seat belts in the relatively safe environment of a passenger airplane, yet undergo all kinds of adjustments to avoid doing so in the much more hazardous environment of their passenger automobile. The problem, as we all know, is not nearly so much one of mechanics and of invention; rather, it is a problem of attitude and of understanding.

Safety is, therefore, a concern which must permeate our lives and which must become a way of life. The tasks of safety educators and of all those concerned about the development of healthy attitudes about safety are tasks which require constant attention from generation to generation. We have short memories about many things, but about safe-

ty we have extremely short memories. I spend much of my time driving from one place to another. It is my observation that the shock effect of a serious accident on our highways lasts about 15 minutes. It takes about that time after drivers pass such an accident before they once again press hard upon the accelerators and resume driving as they were doing before receiving the shock of observing the results of carelessness and of unsafe behavior. If a lesson such as that leads to a sharp curve of forgetfulness, we cannot be complacent about the permanent effects of our classroom lectures, our posters, our movies, or our other teaching devices. We cannot have a sigh of relief as we watch a stunned group of people walk silently away from a movie about fire or about automobile accidents or about the results of carelessness with farm or industrial machinery. In the same way that people leave a lecture about environmental pollution and throw their programs on the lawn outside, people leave our offerings as essentially temporary and incomplete converts.

Thus, our legacy is not a finished product, but is rather a challenge. And the legacy which we shall leave will likewise be a challenge to those who will follow us. For we are dealing with human nature and with human attitudes. If our concerns were less important, it would be easy to give up, to decide that our tasks in this area are impossible of achievement. But our tasks are important, and gains have been made, and giving up is not a part of our legacy. So I salute you for caring, for working, and for not giving up. As you continue your efforts in your professions and in your lives, you do make a difference. You may not be able to take comfort from the rapidity or general acceptance of results of your work, but you can take comfort from the significance of your undertakings and from your unwillingness to let a legacy of effort die.

WHAT ARE THE IMPLICATIONS OF THE PROPOSED TRAFFIC SAFETY EDUCATION STANDARD N-4? WHAT ARE THE OPPORTUNITIES PRESENTED BY IT?

By ROBERT L. MARSHALL

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I believe the opportunities presented to education by the proposed Traffic Safety Education Standard N-4 are as great and will benefit our nations' schools and colleges as you and I and our colleagues throughout this country utilize them. I believe the proposed N-4 Standard provides us a unique opportunity to develop and implement a sound traffic safety education program, as a part of the larger comprehensive Safety Education Program, based on a solid foundation. The foundation I refer to is the base formed by the NHTSA Standards. These standards guide the nation's total traffic safety effort. The NHTSA Standards have given this country a National Highway Traffic Safety Program—a program based on the standards that should be continuously studied and strengthened if we really want to begin reducing some of the traffic deaths and injuries.

Before I tackle the task of discussing the implications of the proposed N-4 Standard and the opportunities presented by it, I would like to discuss standards generally. I believe we need a broad-based view of standards—not just the view of one federal agency (NHTSA). This is what I have tried to do. What do we really mean when we say "standards," or a single standard, or the proposed Traffic Safety Education Standard N-4?

The Random House Dictionary has 28 definitions for the word "standard." Four of them are: (1) an object considered by an authority or by general consent as a basis of comparison, an approved model; (2) anything, as a rule or principle, that is used as a basis for judgment; (3) an average or normal requirement, quality, quantity, level,

grade, etc.; (4) fulfilling specific requirements as established by an authority, law, rule, custom, etc.

I am not certain as to how NHTSA would define the word standard, but I imagine that the last one mentioned would come rather close to NHTSA's definition: "Fulfilling specific requirements (the kind spelled out in N-4) as established by an authority (NHTSA), law, rule, custom, etc."

NHTSA indicates that the purpose of N-4 is to insure development of a comprehensive system of traffic safety education programs that will improve the performance of all highway uses. This is quite a challenge for all of us.

The concept of "standards" is not new. We have had standards in a number of areas that affect schools and colleges for many years. In fact, I believe that there are more than 19,000 approved standards in the U.S. today. You are probably well aware of some of them, such as ANSI Standards (these cover paint spray equipment which affect school and colleges, plus many other areas); NFPA Codes (fire safety); National Electrical Codes (more than 500 pages); ASTM, F8 Committee, "Protective Equipment for Sports," NFPA (building construction) U.L. (electrical codes).

It has been said that Standards develop in at least the following five ways: by custom (driving on the right, 1770's); through associations (NEA—National Commission in Safety Education and its publication entitled *Policies and Practices For Driver and Traffic Safety Education*); from research, new findings; from laws, to improve performance; by individual acts (a person thinks he can drive under the

influence of alcohol—we know better—a standard follows).

In our specific field of safety education, the members of our profession and friends from other disciplines have been developing policies and guidelines for many years. For example:

1. In 1939 the first National Conference on School Transportation was held in New York. Policies and practices for school transportation was developed during that Conference. It has been revised every five years or so since then and has really provided standards for school transportation officials in this country.

2. Also in 1939, a checklist of safety and safety education was developed by NEA and has been updated regularly.

3. In 1949 the first National Conference in Driver Education was held in West Virginia. The present publication, *Policies and Practices for Driver and Traffic Safety Education*, grew with this and subsequent conferences. This publication for more than 20 years has served as more or less a standard for driver education in the nation's secondary schools.

4. Many other national conferences have been held: safety education; teacher preparation and certification; and others.

I would like to define annual and national conferences: an annual conference is a conference held annually by an organization such as the National Safety Congress or the American Driver and Traffic Safety Education Association Annual Conference. A national conference is a conference held every few years (4 or 5) to set national guidelines for the topic under consideration, such as the fourth National Conference on Driver Education.

Another national conference has recently been scheduled. One year ago at the National Safety Congress, two organizations decided to hold the National Conference on Safety Education at Central Missouri State University, Warrensburg, Missouri. The two organizations are the American Association of State Supervisors of Safety and Driver Education (50 state department of education supervisors of driver and safety education) and the American Driver and Traffic Safety Education Association. The purpose of the

national conference is to update three publications which serve as standards in a sense: (1) *Policies and Practices for Driver and Traffic Safety Education* (driver education); (2) *Policies and Guidelines for Teacher Preparation and Certification* (teacher preparation); (3) *A School Safety Program* (guidelines for schools and state departments of education).

Another Standard which was developed by educators in our field, occurred in 1960 when *Evaluative Criteria* included, for the first time, a section entitled "Driver Education." This publication is updated every 10 years and serves as a standard for the secondary schools, which are evaluated for accreditation about every seven years.

In 1970, the Occupational Safety and Health Act was passed. Standards have followed from this act which may affect all schools, colleges, and universities in this country in the near future. In fact, the schools in several states already come under this act.

What I have been trying to say is that standards are not new. We in safety education have been trying to develop policies and guidelines (standards) for more than 30 years to help us do our job better. In addition to our publications and evaluative criteria, we now have two specific laws and follow on standards which can help us develop better school safety education programs: The Highway Safety Act of 1966 (N-4 Standard); and The Occupational Safety and Health Act of 1970 (OSHA standards).

Just what is safety education? In order to answer this question I would again like to refer to a definition from a dissertation at the University of Kansas (Marshall, 1966): "Safety Education—The process of correlating through administration, instruction, and protection a program designed to achieve the following: the prevention of accidents and preservation of lives by developing attitudes necessary there to, by impacting helpful knowledge, and by developing habits and skills which help in safeguarding oneself and others. The fusion of these elements into a discipline important in itself as a means of effective citizenship."

The three major areas of a comprehensive

safety education also need classification: Administration—the assigned personnel in the field of safety, the areas of responsibility of these personnel, and the procedures to be followed in implementing this program; Instruction—those activities carried out through classroom instruction, special projects, co-curricular, a related activity in the teaching of safety education to students and staff; Protection—those provisions for safety included in environmental conditions, control of vehicular traffic around schools, school building construction and supervision, movement of school population, and the safety services provided by inspection teams, resource people, and others.

With this definition of safety education in mind, I would now like to return to my initial task: What are the implications of the proposed traffic safety education Standard N-4? What are the opportunities presented by it?

I believe the way the standard is presently written that at least three points weaken it and need to be clarified and strengthened:

1. Driver education should be included as an integral part of the school K-12 traffic safety education program.

2. There should not be a dual standard for public school and commercial school driver education teachers if they are instructing secondary school students.

3. The state department of education should be clearly spelled out in the standard as the responsible state agency for the traffic safety education program.

Several points stand out as strengths for the proposed standard:

1. The state and local school systems will be encouraged to develop and implement an integrated K-12 traffic safety program which would include pedestrian safety, bicycle safety, school transportation safety (school vehicle rider safety), motorcycle safety, vehicle passenger safety, driver education program (includes all youth of licensing age plus adults). These six elements outline a program that is closely coordinated from kindergarten through adult education.

2. State departments of education and local school systems will be encouraged to develop, distribute and utilize curriculum materials in these areas and to keep them

current to meet special needs at the state or local levels. (Update at least every five years).

3. I believe programs will be studied, adjusted as necessary, and strengthened, including provision for well qualified staff members.

4. State departments of education will be encouraged to develop research capabilities designed in the long range to improve instruction which would meet the objectives or purpose of the standard.

These examples of strong and weak implications are not intended to be all inclusive but to serve as examples.

I believe the opportunities provided by the N-4 Standard give us in education the greatest opportunity we have had to develop and implement a quality traffic safety education program at the state and local levels designed to meet the needs of the youth of this nation.

Further, if we in the business of safety education integrate the best of what we have available today—the proposed traffic safety education standard N-4, the OSHA related standards for schools and colleges, the publications which have evolved over the years such as policies and guidelines, evaluative criteria, and other available materials (National Safety Council Publications, etc.), the future of safety education has never been brighter. We not only have the background knowledge of tested publications to guide us, but we now have the strength of the federal government in the form of staff, standards, and some financial support through two departments, Transportation and Labor, to assist us with program development through the standards. If we take the best of these available items, develop programs for the youth of this nation not only in traffic safety but in all areas of the total safety education program, our only limitation is our ability as individuals. I strongly believe that we now have the tools to develop not just traffic safety but a total comprehensive safety education program.

I do not believe you can or should separate one from the other—traffic from the total safety education program—in the long run. They should be inseparable. We as educators must not develop just one part of the disci-

pline of safety I refer to, traffic safety, but the discipline itself (a comprehensive safety education program) and related disciplines if we are to do our task well.

In 1886 Justice Oliver Wendell Holmes, of the United States Supreme Court, stated in a memorable lecture that "To be master of any branch of knowledge, you must master those which lie next to it." This statement is as true today as it was in the last century. To understand, and in turn to master, any single

element of the traffic safety education program, we must first understand the total safety education program and the interrelationships between and among all elements of the system.

The opportunities provided by the N-4 Standard are unlimited and it is up to us to take advantage of these opportunities in our schools and colleges for the benefit of young people across this nation.

CAMPUS SAFETY VIA CENTRALIZED CONTROLS

By DONALD CREEDMAN

Senior Education Marketing Representative, Tallahassee, Fla.

To properly present what we feel is different about our approach, it is best to show how it evolved, the current status, and its potential.

The minimizing of avoidable risks is of great concern to most large businesses and institutions in the U.S. today. These organizations spend millions of dollars on insurance premiums, special sensors, guard patrols, fences, and enclosures. Maximum safety and security control for each dollar spent is a reasonable business objective.

Plant and facility funds are hard enough to justify today without being faced with an emergency need to replace or repair due to fire, smoke, or flooding. Construction costs and the money market make these emergencies even more costly.

Campus unrest is on the down swing, but theft and vandalism still remain. The costs of special additional guards to prevent these activities are real and should be reduced if possible. Also real is the cost to control and replace keys that compromise your safety and security by their becoming lost or stolen.

Not one area, but many areas, are involved in the cost of safety and security on a campus. All of these areas should be addressed if you are to improve the entire system within cost justifications. To provide this increased capability, dependability plus ease of operation requires some sort of centralized control. This central control is what we want to consider, and that intangible increase in protection that results.

Florida State University, like all institutions of higher education, is naturally concerned with providing maximum safety and protection to its students, staff, and buildings within the constraints of budgets and personnel. Their goal and desire has long been a complete, central control.

FSU recently completed a review of all campus buildings and submitted a request

for funds to improve their safety equipment. These funds were approved, specs released, and contractors selected to do the first phase of the upgrading. I will not go into the details of the responsibilities and interactions of consultants, prime contractors, and subcontractors. Essentially, the improvements involved adding or upgrading the necessary sensors in the buildings. These included heat and smoke detectors, water flow alarm switches, and alarm pull switches. These were identified within the buildings by zones through connection to a centrally located annunciator panel in each building.

The questions then arose: Where do we go from here? How do you grow from this system? Can fire damage be minimized by getting equipment to the exact location with no delay? The answer is, yes—but how? An alarm identifies a situation and possibly the building, but where requires a look at the annunciator panel. Does this system deter vandalism and arson? No—it merely identifies problems if in the recognized categories of heat, smoke, fire, etc. These questions and others were added to desires, trends, cost factors, and complimentary needs that kept FSU looking for yet better safety controls for its campus.

It was at this point that we presented for consideration a concept of central control. You note I said concept—the plan was to grow from the need to meet all the known unanswered requirements and then allow for the unknown. FSU safety and security personnel had looked at one or two ideas toward centralized control. They were improvements and answered a number of needs, but did not provide the flexibility needed to add the extras so necessary to justify costs, nor could the unknown growth requirements be addressed.

Again, without going through all the details of what was considered, discarded, re-

vised, and studied, I will net out the result. FSU is now in the process of obtaining a safety status monitor, under central control with a reaction capability to all current and future safety devices. In addition to the safety controls, there will be additional controls and savings provided to campus security and parking. These will be discussed later.

What is the FSU Safety Plan? Let's just start with the improved building sensors and controls. We have the sensors in zones and the zones connected to annunciator panels. To this we add a transmitter control which connects the annunciator to an external line which in turn goes into a central controller. The controller is constantly scanning the lines and can identify the building, the zone, and the device when a sensor is activated. This information is printed out to the dispatcher for action. In addition, this printout also advises the dispatcher of any unusual conditions associated with the area concerned, e.g., scaffolding in stairwell, construction, water off for repairs, etc. Visual display and audible alarms still are available at each building so local action may be taken if possible.

Because of the size of a campus, distance between buildings, and the difference in design, size, and use of these buildings, flexibility had to be added to this simple concept. The number of zones could vary as well as the number and type of sensors. Flexibility became more important when security was added.

Next we needed to optimize the cost and use of our communication. The communications were fairly simple. Since the controller required no operator attention, it was situated in the new telephone Centrex building with the typewriter/control station several blocks away in the security dispatcher office. Lines were run from the Centrex building to each building, one pair forming a loop connected to each building's transmitter. This link could have been made to a more remote distance by using a dedicated leased telephone line. For those of you with remote or scattered building complexes, this approach would be the most economical. The use of telephone lines vs. a single pair is a matter of cost and convenience, either used separately

or together.

The transmitters and annunciators in each building provide considerable flexibility in the number of zones and other connections that can be made from one or more buildings.

Before you question what there is in the way of back-up to protect against dependence on a central controlled system, let me tell you what else is being accomplished and then show the total backup.

Overlapping the FSU safety requirements were the needs and concerns of the security office. Some of these problems concerned unauthorized access to buildings; the cost of locking, unlocking and securing buildings; danger of arson and vandalism; need to protect confidential material; and, of course, the constant loss or theft of keys and the cost to control or replace locks or the keys.

These problems were addressed by adding to the safety system a capability called Door Control and Controlled Access. The door control involves the bulk of the doors on the campus. Through the controller, the doors are locked or unlocked at specified times, as a group or selectively by building, and monitored to see if they are open or closed. A log is maintained on their activity.

The controlled access portion of the system allows one or more selected doors in each building to be dynamically controlled for restricted entry. An encrypted, wallet size ID card allows controlled access by door location, time of day, day of week, and the security classification of each individual. These doors are also linked to the controller, which searches the file to determine if the data from the card holder allows access to that area. A report is prepared to the dispatcher advising who tried to gain access, who was authorized access, where and when. Since all authorizations are in the controller file and this file can be easily added or deleted by security personnel, the need to maintain building keys is eliminated. A simple instruction to the controller will add or delete an individual's accessibility to certain areas as will an instruction to identify lost or stolen cards, add new names to the file and eliminate those that leave the campus. The capability to search these files and print out reports on activity

opens up the system to almost unlimited control.

Now to backup. The key to a central control is reliability and availability. To assure FSU uninterrupted coverage and status awareness, numerous backup supports are available.

To avoid any interruption to the controller, the system senses a complete or partial loss of power and switches to auxiliary power, battery or generator. Normally, the battery would compensate for temporary power loss and the generator would take over if this time were extended. If the controller did stop, it would automatically restart after power restoration from a checkpoint in its disk storage. Mechanical interruptions are virtually eliminated by the system's reliability and preventive maintenance procedures.

Should any contact for doors or sensors be damaged or the line cut, its exact location is detected by the system. Similar detection occurs if doors are left open, latches fail to close, and power is not provided a building via failure or vandalism. A power failure in a building is corrected by a battery backup. Any failure situation is available to the dispatcher by building and device. He can alert responsible parties to the location and override the door locks from his console if needed.

Time does not permit me to go into all the capabilities the system has already offered. I will point out that we have already grown from an original 14 buildings being controlled to 32, and from under a hundred doors being monitored to over 200. In addition, consideration is under way to have the system selectively control entrance and egress

to campus parking lots.

SUMMARY OF ADVANTAGES/ BENEFITS

- Central control for greater responsiveness and control
- Alarm identifies sensor by zone, by building
- Messages regarding unusual physical site situations at alarm locations
- Flexibility as to distance from Controller and number of sensor controls to be added or deleted
- Minimum training or intervention by operation personnel
- Operator control to change or override any condition
- Logging by activity, time, and device
- Reporting by shift or day, as designated
- Inexpensive wire interface to wide selection of devices
- Reliability via hardware, maintenance and backup
- Restricted entry by door/time/day/individual
- Card entry secured by encrypted code
- Card entry control over lost/stolen cards
- Unattended operation of control access doors
- Control of lock/unlock, open/close condition of all doors
- Eliminates costly, periodic lock changes and key control
- Reduces manpower requirements
- Offers potential insurance premium savings
- Allows the intangible—peace of mind through greater protection of property and personal safety.

BICYCLE COLLISION SAFETY

By DERWYN M. SEVERY and
LAURIE A. SEVERY

During the late 1960's, general public concern centered on regional ecology. Interest continued into the 1970's with emphasis directed more toward social or self-ecology. The average man became aware that the air he breathed daily was polluting his lungs, a sedentary life style was adversely affecting his health, and often as not the traffic report he heard on the news at breakfast concerned the same traffic he'd be fighting that day to and from work.

In essence, when the problems so popularized in the 1960's affected the public-majority in the 1970's, the mandate for change crystallized. The most logical solution to this problem, sometimes characterized as "urban insanity," is represented by our brief flashbacks to the simpler way of life identified with generations of the past. The "back-to-nature" philosophy appears rather well entrenched and the bicycle comes back to stay in our hearts but, hopefully, not on the highway with motor vehicles.

In 1972, half of the 11 million bicycles sold were purchased by adults who are not satisfied with the hazards of competing with motor vehicles for space on the streets nor are they content with hopping curbs and dodging pedestrians to gain refuge on the sidewalks.

The renewed popularity of bicycles may be attributed in large measure to its unique ability to provide exercise without boredom and economical transportation without traffic congestion or pollution.

Bicycling doesn't require exceptional strength or athletic ability. It is a non-strenuous exercise that can become a part of anyone's health and physical fitness routine, regardless of age. An enjoyable recreational activity offering a variety of pedaling experiences, bicycling is not only healthy but also provides a social outlet. Cycling is also good for the soul; the sense of well being achieved

from a cycling adventure, whether only a jaunt to the store or the protracted pedaling of a tour, the bicycle will refresh anyone's sense of vitality.

Man, as one of the forms of animal, must have exercise to remain fit; what better opportunity can there be than to link this requirement with his transportation needs, wherever practical. When considered from an ecological point of view the bicycle offers an ideal substitute for other forms of transportation. If more bicycles were ridden in the cities than automobiles were driven, an amazing reduction in pollution as well as traffic congestion would occur. Simple upkeep, lack of pollution and economy of transportation are only a few of the attributes of the two-wheeler.

Improvements have evolved with its increased popularity; the improved bicycle is easier and more enjoyable to ride than it was a short five years ago; before a new bicycle even leaves most showrooms, it is custom fitted to the individual owner's size for greater comfort and maximum efficiency. Increasing popularity and the larger number of cyclists on the highways and roads, has gained for them in a few places, recognition of equal rights with motor vehicles.

Safety laws protecting cyclists have been legislated in many communities throughout the nation. Bikeways are appearing so quickly that many maps are outdated when published. Cycling is the Nation's fastest growing outdoor sport. Families are leaving the family car at home to vacation by bicycle.

As with most comparisons, man is physically more efficient than his fellow creatures, whether on the ground or in the air. The honey bee consumes 40 times the energy used by man to travel by foot, when adjusted for weight differences; even the dog uses twice man's energy. Although fully supported, simulating "zero gravity" the salmon still uses

over half the energy man requires in his full-support air-environment mode of travel.

In terms of accident prevention and injury reduction, bicycle safety has not been very impressive, partly owing to the difficulty the task imposes. Falls from bicycles occur more frequently than bicycle collisions; however, unlike bicycle collisions, falls seldom involve death or critical injuries. The bicycle and motorcycle share a common collision problem: both carry their riders outside the vehicle thereby failing to have the vehicle structure protect the human structure; additionally, both are relatively small, easily overlooked vehicles operating in a stream of larger vehicles.

Motorcycles generally weigh less than 500 pounds but some weigh as much as the smaller sub-compact automobiles. For this reason and because of their speed, motorcycles belong on the highway.

Bicyclists are little more than "fast-moving pedestrians," a 150-pound adult pedestrian only becomes a 180-pound bicyclist and a 180-pound man on the run can pack the same destructive impact with another pedestrian as the 180 pound bicyclist operating at a similar speed.

The bicyclist should be isolated from both motor vehicles and pedestrians wherever practical, but given no choice, the bicyclist unquestionably belongs with pedestrian traffic rather than with motor vehicle traffic. Momentum of urban street traffic flowing at the same speed follows a ratio of 100 to 10 to 1 for the automobile, motorcycle and bicycle; the walking pedestrian on that scale would be 0.25.

It is for this reason that a mix of bicycles and pedestrians is far more compatible than to "throw the bicyclist to the wolves" by legislating them onto the streets. Under such measures, the naive child becomes a victim of the adult world, with the adult cyclist not very much safer. It is essential that children be given bicycle driver-training courses and examinations in grade school so that they behave responsibly both as bicyclists around pedestrian traffic and as bicyclists on the street, to the extent such street travel is unavoidable.

The advantage of a bicycle is largely de-

pendent on a firm uniform surface; off road, the bicyclist must revert to walking, which emphasizes the reason the bicycle had only been conceived about 150 years ago, although the principle of the wheel had been known before recorded history. The missing link was not so much technological capacity as it was the absence of surfaces sufficiently firm and uniform to allow forms of transportation, such as the bicycle, to evolve for competition with pedestrian and equestrian travel. The awkwardness of bicycling over bladed dirt roads involves added rolling friction, handling control problems and dust.

Presently, the classification of surfaces which, in some manner, are built for bicycles or at least designated for use by bicycle traffic has not yet been uniformly designated. Looking to traffic engineering categories, there are freeways with full control access, major highways with limited access but with no local access such as driveways, and unlimited access roads. These three categories of vehicle isolation from cross traffic serve as a reference system for the degrees of isolation appropriate for bicycle traffic.

Bike Paths: An improved surface constructed for the exclusive use of bicyclists. Pedestrian and motorist cross flows are isolated by underpass or overpass structures.

Bikeways: An improved surface constructed for the exclusive use of bicyclists, with motor vehicle and pedestrian cross flows restricted to signalized intersections.

Bike Routes: A right-of-way jointly shared by vehicles and bicycles designated by words, symbols and delineators painted on the pavement as well as by signs placed on vertical posts.

Urban transportation systems, particularly in areas having year round mild climate, should include bike paths to public rapid transit stations and parking provisions for bicycles to encourage their use by commuters.

The more common "bike routes" provide no segregation of motor vehicle traffic from bicycle traffic; the bicyclist must drive as defensively as the skilled motor vehicle driver while being as cautious as a pedestrian.

Bike route signs warn motorists that the route being followed has been selected to be shared with bicyclists; this increased aware-

ness promotes more defensive driving. Bicycle Equipment Safety. Bicycle helmets have yet to be recognized as an important and effective protective device. A bicyclist travels at several times the speed of impact which produces head-concussion; his head impact exposure represents the most frequently critical and fatal injury he is likely to sustain. Public apathy toward seat belts of the fifties and toward motorcycle helmets of the sixties has largely been overcome; the seventies is the time to invoke public awareness of the importance of helmets for bicyclists.

Three accessories for the bicycle are essential to reasonably safe bicycle travel: a horn, head and taillights and adequate reflectorized surfaces.

A "walk-around" inspection of the bicycle is advisable before each ride, especially before longer trips; brakes should be briefly tried after starting up before gaining cruise speed. Possible failures and malfunctioning parts may prove dangerous, or at least inconveniencing when discovered underway. An improperly operating bicycle should not be used.

Bicycle Collision Research—Injury reduction from bicycle design changes suggested by findings from full scale bicycle crash studies will probably not be very remarkable; however, the very important public awareness

such tests provide make this effort fully warranted.

The initial impact of the bicyclist by the car is not always his most serious exposure; falls from the car and exposure to being run over by the striking or another passing car represent injuries that may be more severe.

The extreme force of a car-to-bike impact, as much as two tons at 25 mph applied in a split second renders a bicyclist incapable of influencing his subsequent motions or impacting. The time for a bicyclist to act defensively is when he prepares to enter the street and during the entire period he is in the street and not after he's struck.

Except when partly or fully run over by the striking car, the bicycle generally sustains only light damage; the bicyclist impacted by a car rarely is that fortunate.

It appears impractical to modify the passenger car so as to provide greater safety for the bicyclist inadvertently impacted by a car. Accident prevention techniques, rather than design changes to moderate collision forces, represent the most practical approach.

Peak bicyclist accelerations from car to bike impacts increase with increases in car impact speeds; bicycle and rider projected distances following impact increase exponentially as a function of speed of impact. This was also observed for auto-pedestrian impacts.

ACCIDENT REPORTING—KANSAS STYLE

By GERALD CHRISTENSEN

Dir., School Safety Service, State Dept. of Education, Topeka, Kans.

I'm confident that everyone has been bored with the showers of statistical data provided by every reliable national organization. Too much, too fast, not enough, too high, too low. There are valid data for every conceivable situation. As an educational program administrator, I'm concerned with effective domain, with somewhat the degree of anticipation as an industrial administrator; however, I believe may be the cause is equal to, if not more important than the outcome. For example, your football team goes undefeated and you get a new two year contract—that's an effect: the cause—four 250-pound linemen, a 19 year-old quarterback, and a conference that's weak. Or school district liability insurance just was raised 20 per cent over last year—that's an effect; the cause—an increased number of claims on student accidents. What's the difference between these two examples? Well, in the first, it's obvious to everyone by visual examination; however, the second goes quietly unnoticed or unchallenged unless someone, somewhere can examine the cause.

Some 40 years ago, the Kansas State Department of Health initiated a state-wide voluntary accident reporting system. Many of these statistics have been used by the National Safety Council for baseline data.

In the late fall of 1972, a special conference on accident reporting was held which included representatives from the Kansas school nurses, school district safety directors and administrators, as well as Dr. Robert Marshall of the Central Missouri State University Safety Center. As a result of this meeting, plans were formulated, guidelines drawn, and action initiated to bring a unique and comprehensive accident reporting program into being. A philosophy developed that accidents need not be just reports or statistics, but rather experiences that can be anticipated and controlled.

The State Department of Education (with invaluable assistance from its data processing section), the State Health Department's Vital Statistics Section, and the State Penitentiary were thrust together with the responsibility of developing a model. The evolution of time had produced a standardized accident report form, not unlike the form provided by National Safety Council, however, too cumbersome for the new accelerated venture. Correspondence and communication with the National Safety Council and various state departments of education and school districts throughout the United States produced sample forms.

We felt that in a voluntary program such as this, accident reporting procedures should be as uncomplicated as possible with as much data available for computer input as possible. Therefore, a single sheet, requiring very little response, a place for a brief narration, a location for the chief building administrator to sign and the reverse side for accident follow-up was developed. This form is currently under another revision, not because we are in any way dissatisfied with the format, but because we wish to improve or increase the possible response selections.

As you might imagine, a new program is inherently receptive to gremlins and other things that gum up machinery, and our program was no exception. For example, using the state penitentiary data processing program was excellent assistance; however, we often lost valuable time when inmates on the project were paroled or otherwise left the institution. State Department of Health personnel who initially coded the program had to be orientated to new coding procedures. Printing of forms required a new agency request to the state printer, as the program required an additional 150,000 forms not budgeted.

We often found districts that felt reporting

of accidents represented an admission of administrative negligence.

Our non-public schools were non-coded in the State Department of Education and had to be assigned a public school district which was somewhat different. This stemmed from the fact that the federal government required all food service programs to be attached to a unified school district, whether parochial or not. If we were to report and analyze all accidents, then our only solution was to combine the non-public and public school systems. This next year, however, that has been eliminated, as a new coding system has been developed by the state for all schools.

It was our intention, originally, to structure this program on a six month basis so that schools had a more definitive look at their accidents. The initial efforts toward this time schedule fell far short as problems arose at every turn. Primary was the time it took to code each accident report and process it through and the inconsistency in which administrators reported accidents—some came every month, some held up reports two months, and a few sent none at all.

We have, therefore, reassessed our position, adjusted our philosophy, and realized our objectives. In place of two administrative print-out runs there will be one, and only upon request will any semi-annual reporting be done. The large school district certainly might be motivated, as they have staff to follow-up. Elsewhere, it becomes the responsibility of the State Department of Education staff to provide any follow-up activities.

We have identified six high schools where industrial education accident rates are very

high. Follow-up revealed a complete lack of administrative safety planning, in several instances bordering on negligence. OSHA regulations were presented to administrators and instructors and priorities for implementation outlined. Our state has not developed a plan for implementation; however, that becomes another topic, another time!

The most important benefit we hoped to realize was the reduction in accidents. We projected the program through a three year cycle so that we might fairly evaluate our results. We anticipate that our efforts will show, after three years, a significant reduction in Kansas school accidents.

The benefits of this program are yet to be realized. Some of the programs being developed include (1) data on all industrial education accidents by machinery type and student grade, keyed to district and building; (2) athletic accidents based on nature of injury to sport; (3) food service employee accidents based on type of injury vs the causative factor. These are but a few and seem to touch only the surface. Several insurance companies have expressed interest in this program, and I am confident their experience in the area of data analysis will be helpful to the program and Kansas schools.

We have not reinvented the wheel nor have we rediscovered water but, rather, pumped new blood into an old horse. Accident reporting can be dull and meaningless—an end to itself. We see accident reporting as but one vehicle traveling toward the ultimate goal of total education of the child.

As a vehicle, no better than the fuel which makes it go, nor work it can accomplish.

OSHA—NATIONAL SCHOOL PICTURE

By DENZELL B. EKEY

President, Safety Consulting, Inc., Topeka, Kan.

In December 1970, the President signed into law the Williams-Steiger Occupational Safety and Health Act of 1970. It became effective in April 1971, and its fundamental objective is contained in the provision that "each employer has the basic duty to furnish his employees employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm." This legislation provides the framework for the most extensive effort ever undertaken to reduce the over 14,000 fatal occupational injuries, the estimated 2,000,000 disabling injuries, and the 150,000 disabling occupational diseases that have been occurring among 80,000,000 American workers annually. Among the provisions of the Act are those allowing each state to assume most of the administrative functions. Some of these functions have already come under state control; others, if they are to be assumed by the states, will require special legislative action.

The Act excluded public employees at the federal, state, and local level when enacted. An Executive Order by President Nixon gave coverage to federal agencies, but state and local public employees, which include those in public schools and colleges, are included only when individual states submit and have a state plan approved for administration of OSHA in their state.

On August 10, 1972, OSHA Program Directive 72-22, Coverage of State and Local Employees in State Plans, clarified the subject:

1. *Purpose:* to describe the conditions which a state must meet in order to satisfy the requirement of Section 18 that its plan contain a program for public employees (Section 18(c)(6)).

2. *Explanation:* Under Section 18(c) of OSHA, the assistant secretary is required to approve a state plan if in his judgment eight

separate criteria specified by Congress are met in the plan. Among these criteria is that contained in 18(c)(6), which requires that the plan "contains satisfactory assurances that such state will, to the extent permitted by its law, establish and maintain an effective and comprehensive occupational safety and health program applicable to all employees of public agencies of the state and its political subdivisions, which program is as effective as the standards contained in an approved plan."

In evaluating how a state plan meets the elements of this requirement, the assistant secretary, therefore, must prescribe requirements for "effective and comprehensive" occupational safety and health programs for state and local government employees.

There are three broad areas which the state must consider: coverage, standards, and enforcement.

Coverage. Section 18(c)(6) requires a state to cover all state and political subdivision employees "to the extent permitted by its law." On this qualification, the legislative history indicates that Congress had in mind, among other factors, state constitutional limitations on state jurisdiction over local government employees. A state is obligated, for plan approval, to provide a program for all state and local government employees to the full extent it is legally able to do so. State action to reduce or remove such legal authority in order to avoid responsibilities under Section 18(c)(6) would be a sound basis for disapproval of a plan.

It is possible that state law can permit coverage, prohibit coverage, or be silent on the subject. It is also possible to find differing combinations of legal authority for coverage, especially in the area of political subdivisions. State law may also place limitations on the type of program which a state can implement at the political subdivision level.

It is the state attorney general who must give his opinion as to the extent to which state law gives legal authority for a public employee program. In such cases, general executive authority of the governor of the state to provide for the working conditions of public employees, both state and local, might be available to implement an occupational safety and health program for such employees. States should thoroughly examine this possibility before reaching their legal conclusion with regard to the "extent permitted by its law." The assistant secretary will review state interpretations of coverage, both under Section 18(c) and for purposes of defining federal coverage (see Sec. 3(5)).

Even where a state is clearly not permitted to cover political subdivision employees, the state could negotiate an agreement with the political subdivision under which the political subdivision provides a program meeting the requirements for the state public employee program. (The situation is analogous to that described in OSHA Program Directive 72-2, State Plans as Affected by Political Subdivision Jurisdiction over Safety and Health Regulations in the Private Sector.)

Standards. The concepts embodied in the indices for effectiveness of standards contained in Part 1902 for private employee programs would be applicable to public employee programs. Procedures for variances, tolerances, and exemptions applicable to private employee standards would be part of the "effective" test, as well as provision for staged development to reach the required level of effectiveness. The scope of standards coverage for public employees must be as broad as that for private industry under the plan (the same number of issues must be covered).

However, it is possible that certain public occupations may risk hazard exposures which are unique to that occupation and thus would not be provided adequate protection by the application of existing standard. In these types of occupations, the state is encouraged to develop standards tailored to the particular hazard involved and enforced only as to that particular hazard. Where such special public employee standards are developed, they will not necessarily have any comparable measure of effectiveness other than

by analogy to the overall effectiveness of standards applicable to private industry.

Enforcement. Legislative history and background of Section 18(c)(6) indicate that Congress did not contemplate that the system of enforcement mechanisms applicable to private employers under a state plan should be applied in the same way to public employers as a requirement for an effective public employee program. Under present circumstances, it is in the discretion of an individual state, therefore, whether or not its public employee program provides, or continues to provide, for such means of enforcement of safe and healthful working conditions for public employees as are used for private industry.

Even without such provisions, however, it is the assistant secretary's position that certain minimum enforcement procedures are required to ensure an "effective and comprehensive" occupational safety and health program which is "as effective as the standards contained in an approved plan." The following concepts, derived from the indices of enforcement effectiveness of 29 CFR 1902, have been determined to be essential to the effectiveness of a state public employee program. It should be noted that, in addressing these concepts in an effective manner, the state may develop approaches which differ greatly from those which it uses in its private industry program. For instance, the designated agency might choose to develop self-inspection programs with state level agencies rather than doing the inspection itself. This is to be expected, since the nature of the situation is also quite different (i.e. public employers as opposed to private).

The items which must be addressed in a public employee program are: Inspections and complaints—Regular inspections of workplaces, including inspections in response to valid complaints; Participation by employees—A means for employees to bring possible violations to the attention of inspectors; Notice of complaints—Notification to employees when no violations are found in a complaint-response inspection; Information to employees—Information for employees about their protection and responsibilities under the program; Protection against retali-

ation—Protection for employees against employer retaliation for exercising their rights under the program; Toxic material exposure—Information for employees about their exposure to toxic materials, especially when exposures are above levels specified by standards; Imminent danger—Procedures for prompt restraint or elimination of imminent danger situations; Notice of violation—A means of notifying employers and employees when an alleged violation has been found; Correction of violation—A means of establishing timetables for correction of violations, and for notifying employers and employees about them; Voluntary Compliance—A program for encouraging voluntary compliance.

3. Action. The Regional Offices should explain these requirements to state designers.

4. Filing. This directive should be retained until further notice.

As you can see, this directive spells out in detail, yet leaves individual states considerable latitude in developing their state plan. However, Congress further required these state plans to be at least as effective as the federal program and to remain so. OSHA does not intend to see the protections of the Occupational Safety and Health Act dissipated through ineffectively operating state plans, and we believe they have adequate tools to detect this and sufficient legal authority and determination to withdraw the approval of such plans and reassume federal jurisdiction.

The chief reasons we feel that a real integrated federal and state effort is the best approach are:

1. The considerably greater level of resources, both people and dollars, that can be brought to bear on the problems of safety and health.

2. That, as the Act is now written, state plans are the only medium through which protection for state and local employers can be provided and by which employers, particularly small employers, can receive on-site consultation to help them come into compliance with the standards.

3. The belief, evident in most of the President's programs, that a state can administer programs for its own citizens more effectively than can the federal government.

We currently have 19 approved state plans: South Carolina, Oregon, Utah, Washington, North Carolina, Minnesota, Maryland, Tennessee, Iowa, Kentucky, Alaska, Montana, New Jersey, California, New York, Virgin Islands, Colorado, Michigan, and Vermont; and Illinois, to be approved November 1, 1973, will number the 20th.

Six of the 56 jurisdictions have not submitted plans (Ohio, Louisiana, Kansas, Nebraska, South Dakota, and the trust territories) and four states (Pennsylvania, Georgia, North Dakota, and New Hampshire) submitted plans but withdrew them, North Dakota after approval.

Twenty-eight plans are in various stages of review, and there is new emphasis on speeding up the review process, which has been very lengthy, but in part because OSHA has tried to assure that they were approving plans which have a good chance of operating effectively.

Of the 19 approved plans, all but six are adopting federal standards. Overall, we expect only seven or eight states to have standards substantially different from OSHA's.

The 15 operational states, i.e. with laws much like OSHA's, have more than 600 inspectors in the field now. All 19 states will have about 1,600 in the field by the end of FY 1974. If our estimate of 30 approved plans proves accurate, then by the end of FY 1974, these states will have over 2,000 inspectors in the field and will have conducted an estimated 160,000 inspections. The number of inspections should rise substantially during FY 1975, when they will all have been operating for a full year. The 19 approved plans cover approximately 44 per cent of the workforce, and Illinois will raise it to over 50 per cent.

An interesting sidelight here is that William Dwyer, OSHA special assistant for public affairs, said in response to a question as to why certain state plans were approved, when such plans will not cover public employees until 1976, that OSHA had "good and sufficient reasons" for granting the public employee coverage extension. He added that states could withhold revenue from local government agencies which fail to meet their obligations concerning job safety and health for public employees.

All this adds up to the probability that at some time in the near future our nation's schools will probably be included in coverage under OSHA. Congressman Steiger, who helped draft the original Act, is proposing two changes, one of which is coverage for state and local government employees.

I would encourage you all to carry the message to your administrators, governing boards, and state departments of education. Start now to bring your workplaces into voluntary compliance. As a former director of safety services for a state department of education, and as a safety consultant in private industry who has inspected many school and college campuses, I see that much work needs to be done.

In reviewing one OSHA inspection report of a college campus this past year, I'll share some of the findings with you.

In inspecting 20 per cent of the campus buildings on that campus, over 60 citations were issued by OSHA. Some of these 60 citations had 30, 40, and even 50 instances where the same or similar violation was repeated; items cited included housekeeping, exit signs, ladders, aisle clearance, guardrails, han-

drails, fire doors, compressed gas cylinders, flammable liquid storage, No Smoking signs, eye flushing facilities, personal protective equipment, fire extinguishers, fire sprinkler systems, material stacking, machine guarding, fans, saw guards, grinders, belts and pulleys, compressed air, and extension cords.

I am sure most of you can think right now of items in your facilities that present a hazard to employees and to students. Where students are concerned, we have a responsibility to set an example with our training and educational facilities of safe work places, safe work habits, and safety attitudes. The schools should not have to be forced to shape up in the field of safety but should voluntarily take a leadership role.

If education had been doing its job well in the past, it might not have resulted in legislation such as OSHA. We now have an opportunity to show leadership in safety education and voluntary compliance.

OSHA is here to stay and can be a tremendous help to educational institutions in support, direction, and encouragement for our combined safety efforts.

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