

The A.S.H.E. **SCANNER**

VOLUME IX, NO. II

THE AMERICAN SOCIETY OF HIGHWAY ENGINEERS

JANUARY 1973

National Society Convention Committee Develops Long Range Plans

Chairman of the National Society's Convention Committee, Robert E. Martzall, P.E., has announced plans covering the next four years. The 1973 Convention will be sponsored by the Williamsport Section under the able leadership of Atwood L. Welker, Jr. and George K. Hart.

In keeping with the practice of alternating between east, west and central loca-

tions, Pittsburgh will host the 1974 convention; Delaware Valley the 1975

convention and Al-

toona the 1976 convention. Arnold C. Wright,

co-chairman of the very successful 1972 convention sponsored by the Franklin Section, brings excellent experience to the 1973 Convention Committee. Chairman Martzall is also

R. E. MARTZALL

assisted by James M. Weaver, Joseph C. Martinelli, John H. Leapson, Jr., Robert E. Yeager, Robert M. Sherr and Millard F. L. Stewart, Jr. on the Convention Committee.

Sections Support Education

Delaware Valley Section President. Robert L. Rowland, has announced that a student award program has been adopted.

The resolution as adopted is as follows with a listing of the awards for the 1972-73 school year:

STUDENT PAPER AWARD, DELA-WARE VALLEY SECTION, AMERICAN SOCIETY OF HIGHWAY ENGINEERS.

To recognize the importance of promoting student interest in the engineering problems in the development and use of highways, the Delaware Valley Section of the American Society of Highway Engineers shall sponsor a Student Paper Award.

(a) The competition for this award is restricted to residents of the following counties in Pennsylvania and New Jersey who are enrolled in an accredited college of engineering:

Pennsylvania: Bucks, Chester, Delaware, Montgomery, Philadelphia. New Jersey: Burlington, Camden, Gloucester, Mercer.

- (b) The award is to be made to a full time undergraduate student for an original paper concerning any of the aspects of Highway Industry.
- (c) The award, in an amount to be determined by the Board of Directors, is to be awarded to the student for his use as he sees fit.
- (d) Presentation of the award each year is not mandatory.
- (e) All papers shall be typewritten and not less than 1000 words nor more than 5000 words in length. Selection of the final paper shall be made by a panel of five Members representing a cross section of the Society, as approved by the Board of Directors.
- (f) Receipt of a paper shall be acknowledgement of application for the award. All applications must be submitted prior to January 15th and awards will be made during Engineer's Week in February.
- (g) The selection of the recipient of the award is the responsibility of the Award Committee of the Section, subject to ratification by the Board of Directors.

Awards for this year will be: First Prize, \$500; Second Prize, \$100; Guaranteed Freshman Prize, \$100.

All entries to be sent to Mr. Harry D. Continued on Page 4



President's Message

DONALD C. RIMMER Dillsburg, Pa.

Now that the holiday season is over and the New Year is beginning, I send you my best wishes. I hope you all had as good a Holiday Season as I did. Mine was wonderful.

I wish you all a Very Happy and Prosperous New Year.

What are your plans for this year? If some of your short and long range goals do not start to come to mind immediately, planning for that goal is in order.

Day to day living can be what you make it. If you do not raise your sails, they cannot be filled with the forces that drive you on. It's easy to spot the person with a goal. He has a smile on his face and a gleam in his eye. Not much tends to drift him from his course. Each of you as an AMERICAN SOCIETY OF HIGHWAY ENGINEERS' member, know the significance of our organization. Please include us in your plans for the New Year.

TAKE TIME FOR TEN THINGS:

*Take Time to Work - it is the price

*Take Time to Think — it is the source of power.

*Take Time to Play - it is the secret of youth.

*Take Time to Read - it is the foundation of knowledge.

*Take Time to Worship - it is the highway of reverance and washes the dust of earth from our eyes.

*Take Time to Help and Enjoy Friends — it is the source of happiness.

*Take Time to Love - it is the one sacrament of life.

*Take Time to Dream - it hitches the soul to the stars.

*Take Time to Laugh — it is the singing that helps with life's load.

*Take Time to Plan — it is the secret Continued on Page 3

TECHNICAL CROSS SECTION

TRAFFIC NOISE ON INCREASE BUT CAN BE CONTROLLED SAY EXPERTS

One of the principal and most widespread causes of the noise environment in which the majority of Americans live today is traffic noise — the sound of the ever-increasing number of cars, trucks, motorcycles, and special purpose vehicles going about their business.

Automotive noise starts in many areas of the car. The engine casing, the engine inlet and engine exhaust, the transmission and drive train, the fans used in cooling and air-conditioning, the interaction of the tires with the pavement, and finally, wind noises caused by the car's passage through the air; all add together and blend into the amorphous sound familiar to all who live within earshot of a busy highway.

The noise level can be prevented from increasing, and can even be minimized by making certain modifications in highway design and construction, say B. Andrew Kugler and Grant S. Anderson (Bolt, Beranek and Newman, Inc.). Their paper on the subject is one of six that are included in HIGHWAY RESEARCH RECORD NO. 390, "Geometric Design Implications and Vehicle Noise," published recently by the Highway Research Board.

One solution to traffic noise is to elevate or depress the highway above or below the level of the surrounding homes or businesses. This results in a significant loss reduction, except in the case of trucks. The main source of noise from trucks is generally an elevated exhaust stack which does not conform with the ground-level automotive source.

Other approaches to noise control involve the use of earth berms or walls between the highway and the observer, or partial shielding provided by structures of vegetation (not a very effective solution).

The paper also included a description of a method available to highway designers and engineers by which the environmental impact of the proposed highway on the surrounding community can be predicted.

The authors conclude "Control of highway noise through highway design is possible by proper planning. The inclusion of the noise considerations in all future highway designs can result, therefore, in a substantial control of this form of pollution. With a new awareness by the general public of the probelms of noise pollution, the automobile manufacturer, the highway designer and engineer, and the city builder must all together meet the challenge and become seriously involved in the problem of automotive noise and its control."

In another paper, Graeme D. Weaver and John C. Glennon (Texas A & M University) challenge the adequacy of current criteria for designing and striping areas of highway on which automobiles can overtake. These criteria, they say, have been unchanged since 1941. They describe field studies conducted to examine passing behavior on rural two-lane highways and to develop passing sight distance design criteria compatible with current operating conditions. They were especially concerned with passing maneuvers on highways with operating speeds of 50 to 80 miles per hour.

Glennon and Weaver also discuss a series of tests conducted by the Texas Transportation Institute of Texas A & M University to determine how closely vehicles follow the path of a highway curve. Having found that a certain percentage of vehicles fail to follow the proper line of the curve, the authors proceeded to develop a hypothetical highway curve design equation to provide greater safety margin against lateral skidding.

William Zuk, consultant to the Virginia Highway Research Council, describes a mathematical analysis of a vehicle negotiating a curve with down-grade superelevation. The study was initiated as a result of numerous skidding accidents at locations where highway geometrics include a combination of down-grade, curve, and superelevation. The author concludes that lateral coefficient of friction and driver maneuvering are the most important factors in critical skidding.

Joseph A. Wattleworth (University of Florida) and Jerry W. Ingram (Florida Department of Transportation) present a case study to illustrate a cost-effectiveness method for analyzing and comparing alternate interchange configurations and for developing a phasing program of future improvement.

James S. Peet (Hershey, Malone and Associates) and Dennis Neuzil (Tippetts-Abbett-McCarthy-Stratton) discuss the relative merits of independent alignments versus constant median alignments for a high type of roadway design. They include economic analysis and graphs to prove that, within certain limits, independent alignment can often be built and maintained at less total annual cost than some

narrow-median designs.

Highway Research Record No. 390 is available for \$2.00 a copy from the Highway Research Board, Publications Department 805, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. †

FROST ACTION IN SOILS SUBJECT OF REPORT FROM HIGHWAY RESEARCH BOARD

Frost action in soils has probably been in progress since the formation of this planet's soil systems and most certainly predates recorded history. Geological history bears record of these ancient actions, but man's annoyance with frost boils and mud holes has probably resulted more in increased blood pressure than in economic solutions to the problem, at least until relatively recent years.

A new publication by the Highway Research Board describes part of the continuing struggle to overcome the frost problems that have been the subject of scientific attention since the middle 1800's and most recently have resulted in several substantial advancements in treatment.

Highway Research Record No. 393, "Frost Actions in Soils," contains eight papers that will undoubtedly bring about more intelligent and economically feasible solutions, through the advancement of state-of-the-art knowledge.

The papers by R. D. Miller (Cornell University); Duwayne M. Anderson and Allen R. Tice (U.S. Army Cold Regions Research and Engineering Laboratory); and P. J. Williams (Carleton University, Canada), deal mainly with the basic phenomena relating to secondary heaving, unfrozen water content in frozen soils, and the ice-water surface tension concept. All are but one step away from practical application and immediate utilization.

G. H. Brandt (Dow Chemical Company); Richard McGaw (U.S. Army Cold Regions Research and Engineering Laboratory); and Edward Penner (National Research Council of Canada) offer practical solutions to parts of the total problem. Water repellency is an avoidance solution, as is management of the water table, whereas a double testing procedure proposed by Penner provides a more rational delineation of the problem.

A paper by James R. Dunn and Peter P. Hudec (Dunn Geoscience Corporation) extends the existing knowledge in the field of rock deterioration. The final paper, by J. T. Laba and K. A. Aziz (University of Windsor, Canada), is devoted to pressure relationships in laterally stressed frozen granular soils, and is of

special significance because of the increasing problem of long time construction on frozen soils.

Highway Research Record No. 393 is available for \$2.80 a copy from the Highway Research Board, Publications Department 805, 2101 Constitution Avenue, N.W., Washington, D.C. 20418. †

BUILDING BETTER CONCRETE PAVEMENTS

The Highway Research Board has issued a compilation of six technical papers that will be of interest to engineers and designers of portland cement pavements. Highway Research Record No. 389, "Concrete Pavement Construction and Joint Sealants," covers such topics as texturing, skid resistance, precasting and prestressing, and various types of joint seals. The papers included in the Record were presented at the 51st Annual Meeting of the Highway Research Board in Washington, D.C., early in 1972.

The paper by C. F. Scholer and O. T. Olateju (Purdue University) reviews in detail the currently available methods for mechanical placement of steel for continuously reinforced concrete pavements constructed using the slip-form method. A time-lapse photography technique was used to evaluate the various placement methods.

The remaining papers deal with pavement joint seals. Frank D. Gaus (Superior Products Company) cites the need for a long-term performance type of sealant for new construction and maintenance of joints in concrete pavements. He reports on experiences beginning in 1963 with the use of PVC elastomeric hot-poured sealants.

Delmont D. Brown (D. S. Brown Co.) reports on the observations made during a survey of neoprene compression seals and other joint sealing systems in five states. The report concludes that only the neoprene seals, by keeping incompressible materials and liquids from the joints, provide satisfactory performance and extend the life of the pavement. Neoprene seals have also prevented blowups in the pavements surveyed.

Various texturing methods were explored by W. P. Chamberlin and D. E. Amsler (New York State Department of Transportation) to determine their effects on the depth, uniformity and durability of the texture in addition to the effect on skid resistance. The study indicates a definite correlation between texture depth and skid resistance. An unconventional fluted float was found to provide a deep

texture that had high skid resistance, was more uniform, and appeared to wear at a lower rate than the other textures studied.

A 900 foot section of two lane highway constructed of precast, prestressed concrete panels being tested in South Dakota is reported by Lorys J. Larson (South Dakota State University) and Wayne R. Haug (State Highway Commission of Kansas). The paper gives a brief account of the technique used in the construction of the pavement. The six-foot wide, 24-foot long and four-and-one-half-inch thick panels were overlaid with a bituminous mat and are being evaluated for structural performance. A cost summary of this unique pavement, which may have potential for future highway use, is included.

The development of a simple viscoelastic model to simulate the time-dependent behavior of elastomeric seals is reported by Ravindra K. Vyas (University of Utah). The response of the model is compared with that observed for the seal to verify the accuracy of the model. It was found that viscoelastic models can be effectively used to represent elastomeric seals.

Highway Research Record No. 389 is available for \$2.00 a copy from the Highway Research Board, Publications Department 805, 2101 Constitution Avenue, Washington, D. C. 20418.

COMPACTION OF ASPHALT PAVEMENTS STUDIED IN NEW REPORT FROM HRB

A collection of information from published research in asphalt compaction, along with informal reports of methods and procedures used in many parts of the world, has been recently published by the Highway Research Board as Special Report 131, "Compaction of Asphalt Pavements." The information in this book is intended to assist contractors, engineers, inspectors, and operators in improving the performance and riding qualities of asphalt pavements.

The introductory chapter defines hotmix asphalt pavements, compaction, and the methods of measuring theoretical mathematical density of asphalt mixes. The actual pavement is measured and defined as being compacted to a percentage of the theoretical maximum density.

Subsequent chapters cover environmental conditions (solidarity of foundation, temperature during compaction, wind velocity); thickness of placement; equipment (pavers, steel-wheel rollers, pneumatic-tired rollers, vibratory rollers); the actual rolling procedure; the consolidation of the pavement under traffic; references, bibliography, and appendices covering state compaction requirements and equipment specifications.

Special Reprot 131 may be purchased for \$2.00 a copy from the Highway Research Board, Publications Department 805, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

PRESIDENT'S MESSAGE

Continued from Page 1

of being able to have time to take time for the first nine things.

Once again the legislators are gathering in Harrisburg. Last year they did not pass a Capitol Budget; hence Highway funds' availability was greatly reduced.

The living of all of us depends to a large extent on the availability of Penn Dot funds. It behooves all of us to call or write our local Representative and Senator and tell him you are one of his constituents. You would appreciate his seeing to it that the first of the two Capitol Budgets required to be passed this year be passed without delay; namely 1972-73 Budget. He can then make any necessary changes when he considers the 1973-1974 Budget which will also have to be passed this session.

It is believed that the Governor is going to submit almost the same Capitol Budget that languished at the end of the last session. This Budget is approximately 350 million and in addition to the usual projects contains 100 million for contract structural overlays, and that all the design work on this is to be contracted.

Call or write your Congressman and Senator today!!! They will be glad to hear from you. †

HARRISBURG SECTION

Henry L. Heck, Jr., Public Relations

NEW MEMBERS

Paul M. Jordan, E.I.T., Mechanicsburg, Pa., Consultant.

J. Paul Simpson, P.E., Camp Hill, Pa., Consultant.

Richard H. Neidich, P.E., Dauphin, Pa., PennDOT.

Robert R. Mueser, P.E., Harrisburg, Pa., PennDOT.

Joseph J. Ouly, Woodlyn, Pa., Pennsylvania Turnpike Commission.

Carrol G. Bayne, P.E., Harrisburg, Pa., Consultant.

James R. Madara, P.E., Harrisburg, Pa., Consultant.

CANDIDATES NOMINATED TO LEAD SOCIETY 1972–1973

Candidates for the various national offices and the Board of Directors who will lead the American Society of Highway Engineers through the new fiscal year beginning June 1, 1973 were reported to the Board of Directors on January 12 by the Nominating Committee headed by Past National President John H. Leapson, Jr. The official slate of candidates is as follows:

- For President James M. Weaver, a Senior Member of the Pittsburgh Section, a contractor.
- For 1st Vice President Robert E. Yeager, a Senior Member of the Altoona Section, a contractor.
- For 2nd Vice President Atwood L. Welker, Jr., P.E., a Senior Member of the Williamsport Section, PennDOT.
- For Secretary Robert M. Sherr, P.E., a Senior Member of the East Penn Section, a consultant.
- For Treasurer George K. Hart, a Senior Member of the Williamsport Section, a contractor.
- For Directors, 3 Year Terms John F. DeRoss, a Senior Member of the Pittsburgh Section; William Boykos, a Senior Member of the East Penn Section; and Charles Allison, a Senior Member of the Altoona Section. These three candidates are PennDOT engineers.

President Donald C. Rimmer, of Dillsburg, Pennsylvania, will automatically become a member of the Board of Directors for a one year term, at the close of this fiscal year.

Directors who will continue in office for their respective remaining terms are:

For two years - Lawrence P. Opalisky, P.E., Clearfield Section; George J. Parrs, P.E., North East Penn Section; and John M. Townes III, Delaware Valley Section.

For one year - Joseph C. Martinelli, Southwest Penn Section; Harold C. Poulson, Harrisburg Section; and Roswell E. Brown, Franklin Section.

Constitutional provisions of the Society permit additional nominations under conditions set forth, by petition to be filed with the national secretary on or before March 20, 1973. If additional nominations are made by such petition method and all requirements are satisfied, an election for nomination to the office involved would immediately be held. Otherwise nominations will close on that date and nominees would be elected to their respective offices during the 1973 annual convention.

EDUCATION

Continued from Page 1

Talley, Jr., P.E.; Chairman, Student Awards Committee - ASHE; 279 Heather Road; King of Prussia, Pa. 19406.

A list of possible essay titles will be sent to the various colleges and universities, together with some reference sources. Information will be sent to the schools prior to September 21, 1972.

Several other sections have similar programs, with the Harrisburg Section program, the oldest. Pittsburgh Section has a student award program. The Williamsport Section has a unique program which deals with both an academic program and an Industry Technician Training program.

Any other sections with student award programs, please write to the Editor of the Scanner so that the rest of the Society can be informed.

PITTSBURGH SECTION

C. E. Slanina, Public Relations

The Pittsburgh Section has been very fortunate in having three excellent speakers for their September, October and November meetings. These were Jacob G. Kassab, P.E., Pennsylvania Secretary of Transportation, Robert Klucher, P.E., Chief Engineer Pennsylvania Turnpike Commission and A. J. Nicholson, P.E., President of Nicholson Pile Company, respectively. We have Program Chairman Sam Livingston to thank for these outstanding speakers.

The Pittsburgh Section has put in a bid to host the 1974 Convention and has high hopes of an early confirmation from National Headquarters.

We welcome aboard the following new members, bringing our total up to 237 members.

NEW MEMBERS

- Wilbur B. Wilkinson, West Mifflin, Pa., PennDOT
- Orlando Gaultieri, Jr., Pittsburgh, Pa., Contractor.
- Charles H. Wilson, Bradford Woods, Pa., PennDOT
- Anthony A. Caprino, Pittsburgh, Pa., PennDOT
- Thomas R. Parry, Trafford, Pa., Safety Education Manager
- Dudley E. Mays, Jr., Carnegie, Pa., Penn-DOT
- Elmer W. Harrah has been made a life Member of the Pittsburgh Section.

SOUTHWESTERN PENNSYLVANIA SECTION

Robert M. Sica, Public Relations

NEW MEMBERS

- Douglass K. Burnsworth, Masontown, Pa., Consultant Salesman
- Robert S. Sinclair, Pittsburgh, Pa., Contractor.
- Donald W. Bedilion, Nineveh, Pa., Penn-DOT.

FRANKLIN SECTION

Albert P. Fiscus, P.E., Public Relations

The Franklin Section of American Society of Highway Engineers held a dinner meeting at the Stable Pit and Pub in Conneaut Lake, Wednesday, September 20th. The program was presented by John Vannatta, Director of Public Relations for the Pennsylvania Highway Information Association. His program informed the members as to the purpose of P.H.I.A., the Highway Trust Fund and the anticipated legislation on increasing highway revenue.

NEW MEMBERS

- Frank J. Leonhart, Guys Mills, Pa., Contractor.
- Ronald E. Lintner, Franklin, Pa., PennDOT Carl L. Baer, Fredonia, Pa., PennDOT

ALTOONA SECTION

John A. Barone, Public Relations

NEW MEMBERS

- Walter R. Imler, Holidaysburg, Pa., Consultant.
- Kenneth L. Windows, Bedford, Pa., Penn-DOT
- Richard J. Pulcino, Altoona, Pa., PennDOT Robert L. Wright, Wells Tannery, Pa., PennDOT
- Robert D. Catherman, Duncansville, Pa., PennDOT
- John T. Martin, Jr., Hollidaysburg, Pa., Construction
- Nevin B. Wantz, Tyrone, Pa., Contractor.

DELAWARE VALLEY SECTION

A. A. Antonucci, Public Relations

NEW MEMBERS

- James W. Charles, P.E., Turnersville, New Jersey, Consultant.
- John W. Stanhope, P.E., New Hope, Pa., Consultant.
- Gerald W. Flederbach, P.E., Norristown, Pa., Highway Design









AMERICAN SOCIETY OF HIGHWAY ENGINEERS

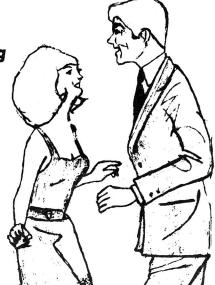
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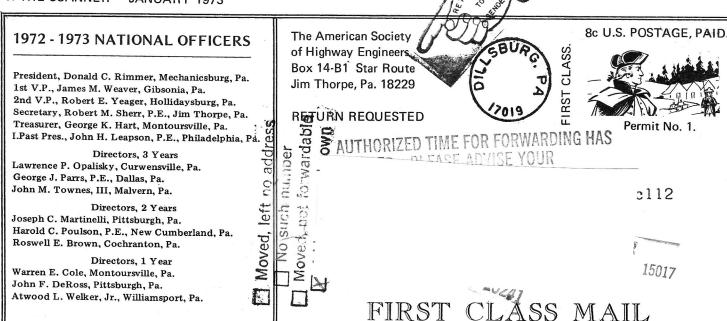
Lycoming Hotel & Motor Lodge WILLIAMSPORT, PA.

Please keep these dates open and plan to attend.

More information will be forthcoming at a later date.







MEMBERSHIP FACTS

Membership figures remain fairly static at this time, due mainly to members being dropped by the various sections, which offset the new members being admitted.

Since our last report in the Scanner we have admitted twenty-six new members but the active membership reflects a total of 1735, with Section totals as noted below:

Altoona	128
Clearfield	92
Delaware Valley	258
East Penn	138
Franklin	160
Harrisburg	339
North East Penna.	147
Pittsburgh	237
Southwestern Penna.	125
Williamsport	111
•	
Total	1735

WILLIAMSPORT SECTION

NEW MEMBERS

Robert L. Bellows, Westfield, Pa., Construction Contractor.

NORTH EAST PENNSYLVANIA SECTION

Davey Jones, Public Relations

NEW MEMBERS

Stephen J. Fox, Scranton, Pa., Consultant.

EAST PENN SECTION

D. E. Heinly, Secretary

NEW MEMBERS

John D. Werner, EIT, Allentown, Pa., PennDOT

Alexander B. Smythe, P.E., Rosemont, Pa., PennDOT

James T. Figlar, Allentown, Pa., PennDOT

GONE - 3,000 MILES OF RURAL ROADS!!!

According to the Federal Highway Administration, there are 3,759,000 miles of roads and streets in the United States. Of these, some 3,166,000 miles are classed as "rural" roads; and that's 3,000 rural miles less than we had a year ago! FHWA says extension of municipal boundaries and rural abandonments account for the shrinkage. (Anybody still contend that "We're paving over the country?" †

A LITTLE HUMOR!

A young wife, just learning to drive, had created a traffic jam in trying to make a left turn at an intersection. Excitedly she turned to her husband and asked what to do. "I don't know," he replied calmly, "but I'm sure if you climb into the back seat you can figure it out."

When I used to walk to get someplace, Drivers were a menace to the human race. But now that I, too, drive a car,

I discover what fools pedestrians are.

Secretary's Corner

At this time I wish to ask the cooperation of every Society member in keeping our mailing list current. Please advise the Secretary (Robert M. Sherr, P.E.) of any changes in your address in order to assure prompt and efficient delivery of The Scanner. We are having many returns on this publication, with no forwarding addresses noted. Will you please see that your proper address is in our files. Thank you.

We are having poor response from the Section Public Relations Representatives in supplying information of activities in the Sections for publication in the Scanner. Try to improve on this report so that the Sections know what is being done by others.

Note to Section Presidents - Please furnish to the National Secretary a list of nominees for the various National Offices by no later than January 15, 1973 so this information may be continued in the February issue of The Scanner.

Note to Section Secretaries - Please see that the "Evaluation Report" is sent to the National Secretary after each meeting. If you do not have copies of this report, please let me know.

Robert M. Sherr, P.E. Secretary

Editor: ROBERT M. SHERR, Box 14B1, Star Route, JIM THORPE, PA. 18229

Please notify us when you change address!