



IEEE

# VEHICULAR TECHNOLOGY SOCIETY

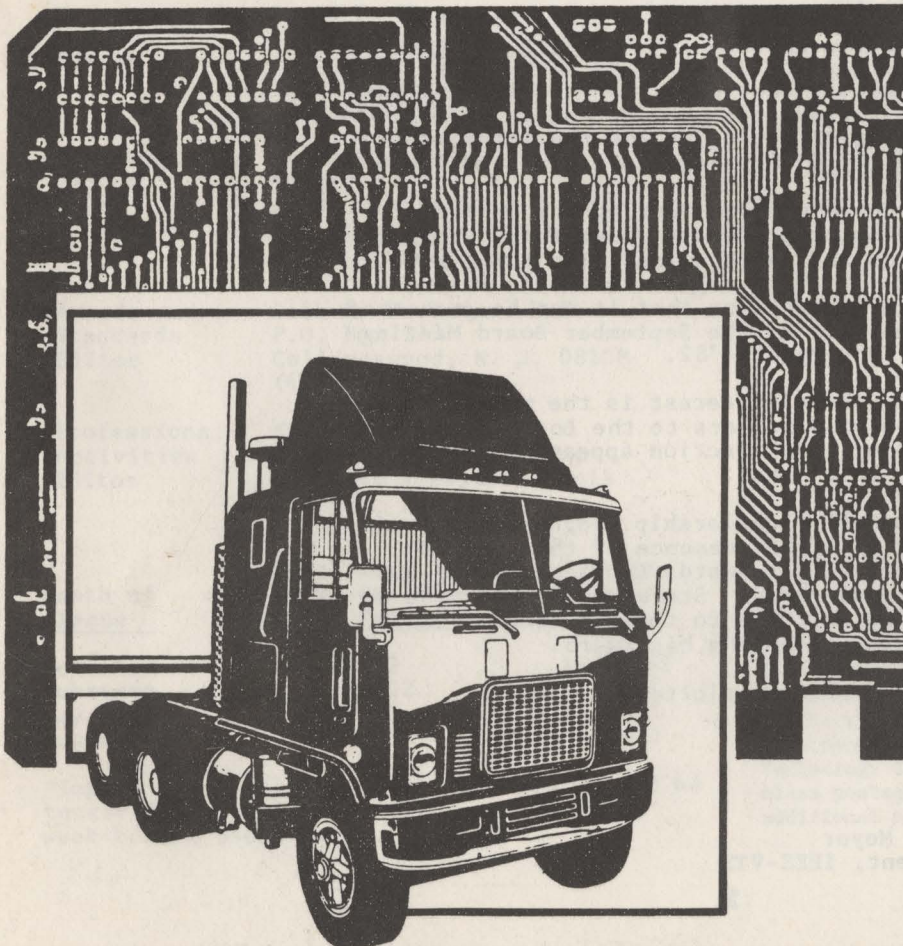
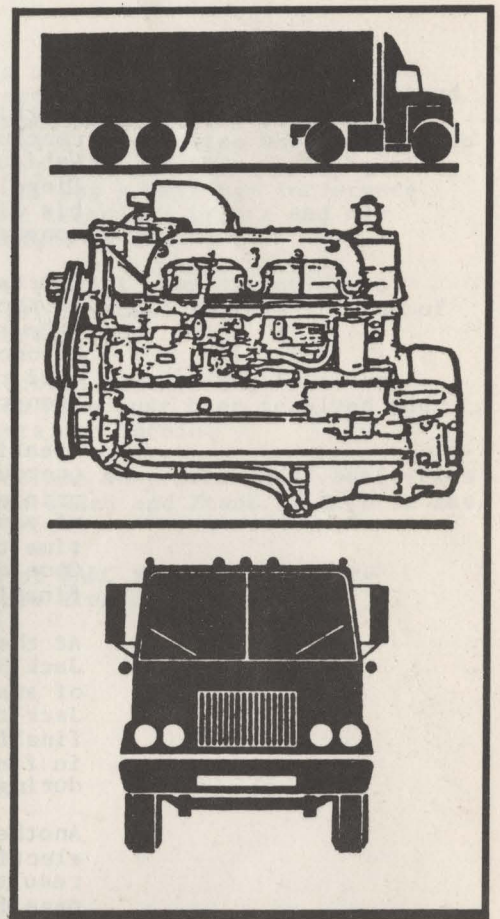
## NEWSLETTER

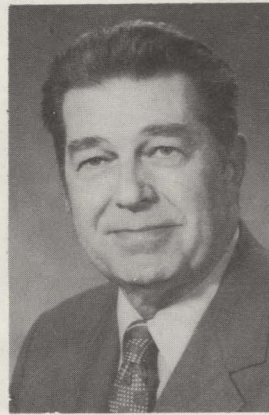
Vol. 29, No. 3, August 1982

(ISSN 0161-7887)

Editor: A. Kent Johnson

### **ELECTRONIC TRUCK ENGINE CONTROL**





## President's Message

**Stuart F. Meyer**  
President  
IEEE Vehicular Technology Society

As this message is dictated, we have just concluded another very successful Annual Vehicular Technology Conference (in San Diego). Conference Chairman Eddie Simon and his diligent committee are to be congratulated for a job "well done."

The technical program was superb as evidenced in the conference record which was available from the start of the meeting. The hotel accommodations were excellent and the show was well run. To the San Diego committee, "Congratulations."

Speaking of conference records, the long overdue 1981 publication was shipped from the printer to my office on June 14th. Most all of you should have received your copy by the time this newsletter arrives at your desk. Once again, I apologize for the delay, but finally all of the bugs have been resolved.

At the Board Meeting (during the Conference), Jack Neubauer presented an expanded program of awards and recognition. The Board gave Jack the go ahead signal to continue and finalize his work so that it can be presented in final form at the September Board Meeting during Convergence '82.

Another item of interest is the most recent election of 5 members to the Board. The results of this election appear on another page in this issue.

The Dan Noble Scholarship Program is off and running with the presence of this year's recipient at the Awards Luncheon during our annual conference. Steven M. Parkes made a very fine response to the audience after officially receiving his award.

Until the next newsletter,

Sincerely,

Stuart Meyer  
President, IEEE-VTS

## Newsletter Staff

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Month of Issue	Final Copy To be Rec'd By IEEE Editor*	Target Mailing Date
November	9-15-82	10-20-82
February	12-14-82	1-18-83
May	3-09-83	4-13-83
August	6-09-83	7-13-83

\*Inputs for newsletter staff editors should be received by newsletter editor at least one week before these dates.

## Editor's Notes



**A. Kent Johnson**  
Newsletter Editor

The San Diego conference has now come and gone and it seems most appropriate to extend a vote of thanks from all who attended to Eddie Simon and his committee who put so much time and effort into providing a top quality conference. It was a well run conference with some fine technical papers and was really a pleasure to attend.

We would like to call your attention to several special features in this edition of the Newsletter.

1. The election results of the recent election have just been received and are contained herein.
2. A new column on professional activities has been added and Frank E. Lord is the editor.
3. Copies of WARC special issue are available from Stuart Meyer.

IEEE Vehicular Technology Society Newsletter is published by the Vehicular Technology Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 345 East 47th Street, New York, NY 10017. Sent automatically and without additional cost to each member of the Vehicular Technology Society. Printed in U.S.A. Second-class postage paid at New York, NY and at additional mailing offices.

## Election Results

The results of the recent election for members of the board of directors have just been received. The newly elected members of the board (listed in alphabetical order) are:

Roger Madden (Re-elected)  
George Mitchell (Re-elected)  
Ronald Rule (Re-elected)  
Arthur Goldsmith  
Robert Mazzola (Re-elected)

The term of office for these board members will be the full three years and with this election we are back on schedule.

## WARC Special Issue

Copies of the proceedings of the WARC (World Administrative Radio Conference) held in New York City are available from Stuart Meyer who has obtained 500 copies for distribution. Contact him as follows:

Stuart Meyer  
Care of E. F. Johnson Co.  
Suite 907  
1601 North Kent Street  
Arlington, Virginia 22209  
(703) 525-6286

Stu also tells me that copies of the proceedings of the 1981 VTS Conference in Washington, D.C. have finally arrived from the printer and are currently being distributed to those who attended.

## Society Officers and Board of Directors

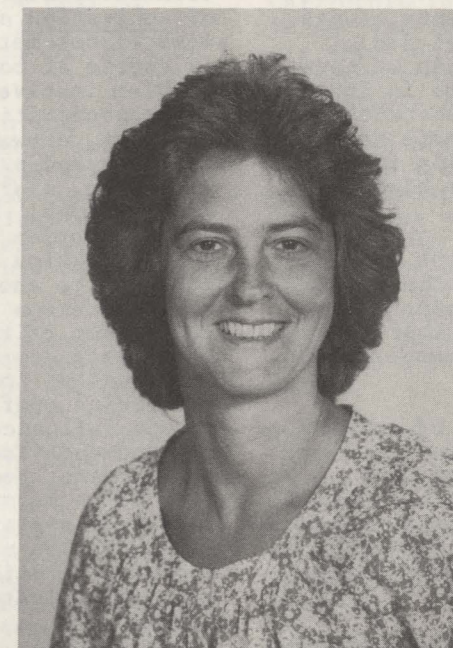
### SOCIETY OFFICERS

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### BOARD OF DIRECTORS

NAME	RESPONSIBILITY	TERM
Robert E. Fenton	Treasurer	Jan80-Dec82
Arthur Goldsmith		Jan82-Dec84
Al Goldstein	Conference Coordinator	Jan82-Dec83
A. Kent Johnson	Newsletter Editor	Jan82-Dec83
Samuel A. Leslie	Society Secretary	Jan82-Dec83
Fred M. Link	Chairman, National Meetings Committee	Jan82-Dec83
Charles Lynk	Chairman, Paper of Year Comm.	Jan80-Dec82
Roger Madden	Junior Past President	Jan82-Dec84
George F. McClure	Chairman of Publications Comm. and Transactions Editor	Jan80-Dec82
Samuel R. McConoughey	Chairman, Chapter Activities	Jan82-Dec83
Stuart Meyer	President	Jan80-Dec82
James J. Mikulski	VTS Rep. IEEE Comm. on Social Implications of Technology	Jan80-Dec82
George J. Mitchell		Jan82-Dec84
Ronald G. Rule	Education Committee	Jan82-Dec84
Robert A. Mazzola	Chairman, Membership Committee	Jan82-Dec84

## 1982 VTS Conference



Adriana Gianturco, keynote speaker of the 32nd VTS Conference

PRESENTATION BY  
ADRIANA GIANTURCO  
TO THE  
32ND VEHICULAR TECHNOLOGY CONFERENCE  
SAN DIEGO  
MAY 24, 1982

Thank you for inviting me to be here today. I always like coming to San Diego and, given the subject of this conference, I think it's particularly appropriate that you picked this city as the place to meet. San Diego is, of course, the home of a new and very successful transportation project using a kind of vehicle -- the trolley -- that most people would not normally associate with California because, for better or worse, we're usually thought of in terms of the automobile, not transit. What's happened in San Diego, though, is evidence of how this is changing and what I thought I'd do in my remarks this afternoon is try to outline for you what I think are the changes that are occurring and will continue to occur in transportation.

Specifically, what I want to talk about are three underlying factors or constraints that are having a profound effect on transportation development. These three factors are energy, the environment, and economics. I'd like to touch on each of them briefly and then describe for you how we at the California Department of Transportation are attempting to respond to them and the kinds of things we need engineers to work on to help us respond better.

The first and perhaps the most important of the three factors is energy. In California, about 65 percent of all petroleum-based energy is used by transportation, and this is especially significant because the transportation system we currently have in

place is almost totally dependent on petroleum, not on a mixture of petroleum and other energy sources. This puts us in a rather perilous position because in the long term, we can be almost certain that the petroleum we're going to have is going to cost a lot more than it has in the past; and, furthermore, it's evident that the supply isn't very secure -- it's been disrupted very severely twice in the last decade.

Overall, most of the transportation fuel we're using -- about 52 percent -- is going to the automobile. The next highest user is trucks -- at 25 percent, followed by air -- at 8 percent, and rail (for both freight and passengers) -- at 7 percent. Buses use less than 1 percent. The problem, when we have to worry about energy, is that on both the passenger and freight side most of the travel in California, and in the country as a whole, is by the least energy-efficient modes. On the passenger side, about 98 percent of all travel is by automobile. An the auto is about one-quarter as energy efficient as a fully loaded bus and one-seventh as energy efficient as a fully loaded passenger train. On the freight side, the greater part of commodity shipments are by truck, although the energy required to move a ton of goods a mile by rail is one-eighth of the energy required to move it by truck.

What all this means is that when gas prices go up or the supply is disrupted, there is an immediate and direct impact on transportation. It's the marketplace at work and we've certainly seen it working overtime the last few years.

Historically, travel on California state highways -- which accounts for about 55 percent of all road travel -- increased about five percent per year. In 1979, however,

when gas lines wound their way for blocks, travel on state highways decreased for only the second time since the Second World War, and last year, when there was plenty of gas, but at a much higher price, travel did increase, but at a slower rate than we have historically come to expect. Even in the last few months, with a fairly substantial drop in the price of gasoline, there does not appear to have been a corresponding increase in either gasoline consumption or highway travel.

What people have been doing, on the average, is taking fewer trips. And with the trips they do have to make -- mainly going to and from work -- they're more apt to share the ride -- and the costs -- with someone else, or take transit.

As I mentioned earlier, the rate of growth for travel on California's highways has leveled off since the gas lines of 1979. During the same period, intercity but travel grew by 6 percent: ridership on the trains operating in our state increased by nearly 60 percent; and travel on local transit systems was up 12 percent.

Energy and its influence on what it costs the individual to move around, has clearly caused some profound changes in travel behavior. When it costs 47 cents a mile to drive an automobile, as Hertz recently estimated for metropolitan areas, people are obviously going to look for alternatives.

I'd like to turn now from energy to the second -- and very closely related -- factor which is influencing what is happening in the transportation area, and that is the environment. I'd like to approach this topic from a couple of angles.

First is air pollution. Although people may disagree on a solution to the problem, I don't think anybody questions that air pollution is a very serious problem in California as well as in many other places across the country. In our state, as in others, the major contributor to the problem is transportation-related -- namely auto exhaust.

As many of you are aware, the federal government has imposed sanctions against any highway construction, except that related to safety or mass transportation, in California's major metropolitan areas. These sanctions, which have been in effect for nearly 17 months, are now holding up \$247 million worth of highway projects that otherwise would have gone to construction.

When and if the sanctions are lifted -- and this will depend on either our state legislature passing an auto inspection and maintenance program or on a change in federal rules -- we will still need to consider, very carefully, the effects of transportation improvements on air quality.

The second environmental issue that is developing increasingly important implications for transportation is the problem of space. This is a problem which takes several forms.

First of all, there is the problem related to the amount of space vehicles occupy on a transportation facility. This is the problem of congestion and it's a very real problem in most of our metropolitan areas, particularly of course at commute hours. The second space problem involves the amount of land occupied by transportation facilities themselves. For highways, anyway, the land requirements are enormous and expansion of facilities involves extensive, disruptive, and very costly land acquisitions. The third special aspect to transportation relates to the nature of transportation itself -- movement from one location to another. Our need for transportation in the first place is a direct reflection of the patterns of land use, but it doesn't stop there, because by constructing transportation facilities in a particular configuration, we have a very strong influence on where and in what pattern development itself occurs. With sprawled development, people necessarily have to make long trips in many directions. When we put in a transportation system to accommodate long trips in many directions, we tend to encourage precisely the kind of development that necessitated the system in the first place.

This brings me to the last of the three factors influencing transportation that I wanted to discuss today, and that is economics.

In transportation, just as in other sectors, the cost of doing business increased enormously in the last few years. We have been very hard hit, like everybody, by inflation, especially in our construction activities, and the dollars we have today can build only one-third of what they could build seven years ago. Inflation in transportation construction -- and here I'm referring particularly to highway construction -- was very seriously aggravated by the energy situation, in two respects. First, new highway construction is highly energy-intensive. It uses very little labor, relative to other forms of construction, and a lot of heavy, oil-guzzling equipment. In addition, many of the materials we use -- and asphalt is the most important factor here -- are themselves petroleum products, and until very recently their prices were rising much faster than the prices of the overall marketbasket of goods.

To give you some idea of the kind of costs we're talking about today in the area of highway construction I'd like to mention just two products. The first one is the century freeway in Los Angeles, which is a project we broke ground on just a few weeks ago. This is a 17-mile long freeway running through a highly developed area -- mostly residential -- and it's had a long and controversial history, including a lawsuit that stopped it for eight years. Our cost estimate for the project in escalated dollars over the project's twelve-year construction period is \$3.8 billion, which works out to \$170 million per mile.

To give you another example, we very recently completed and opened to traffic an interchange here in San Diego on Interstate

15. There's nothing particularly unusual about this interchange -- it connects a local street to the freeway -- but the cost of putting in those few loops to improve circulation in that location was \$15 million dollars.

So, with these three factors in the background -- energy, environment, and economics -- what kind of changes are we seeing in transportation and how can we best respond to these changes? Basically, I think the challenges and opportunities lie in four areas and I'd like to run through these very briefly.

First of all, we've already seen and I think we're going to continue to see a modification in individual travel behavior by automobile. As a direct result of the high cost of driving, in the past few years people have been -- on the average -- taking fewer and shorter trips. The trend to shorter trips could be greatly reinforced by more thoughtful land use decision-making at the local and regional level, particularly with regard to where job and shopping opportunities are situated in relationship to housing. As to encourage the trend to fewer trips, probably developments in communication -- which I gather is a field many of you are working in -- offer the most promise. Communications can provide a direct substitute for transportation and this is something that hopefully we're going to see more of in the future.

The second area in which transportation is changing is the broad area which we call transportation systems management, involving various efforts to make more efficient use of the transportation system that's already in place as an alternative to costly new construction. In California, we're basically doing two kinds of things that we call transportation systems management. The first kind of activity entails trying to improve vehicular flow by such means as the metering of ramp entrances to freeways and better traffic signalization and surveillance. In this general area, we developed about three years ago something we call the "Type 170" traffic controller, which is demand-responsive, and we're currently installing these controllers in various locations. Something else that we're doing in the traffic area which I think is of particularly note is our "40-Mile Loop" in Los Angeles, which involves a whole variety of electronic devices to monitor and direct traffic. Our most recent addition to the loop system is a series of high-mounted TV cameras which can pick up and transmit accident scenes to our central control location.

The second type of activity that we're carrying out in the general area of Transportation Systems Management has to do with trying to increase the occupancy of passenger vehicles. In the past few years we've seen a definite trend towards more carpooling and vanpooling in California, again as a response to the high cost of driving, and it's a trend we very much favor not only for its energy benefits but also for its positive impacts on congestion and air

pollution. To encourage ridesharing, we have provided the major source of funding in California for computer matching operations in our various metropolitan areas. Also, we are devoting a significant portion of our construction dollars to building special bus and carpool lanes on freeways.

The third area in which we're experiencing change in transportation has to do with the mix of transportation modes. As I mentioned earlier, we've seen a substantial growth in transit ridership in the last few years, as yet another outcome of the rising cost of gasoline, and for us now the problem in transit is not how to get people to use it -- they are using it -- but how to supply adequate transit capacity at a reasonable cost.

One form of transit that we're particularly interested in is Light Rail. While the system in San Diego is the first one we've actually put on the ground, it's not the only system planned and within the next few years we should see other light systems constructed in Sacramento, San Jose, and hopefully, Los Angeles.

We're interested in Light Rail for a number of reasons. First of all, Light Rail is relatively inexpensive to construct -- particularly if you compare its cost to the cost of building freeways. Light rail lines use small amounts of land, and, in some situations, can be developed in such a way as to put no additional land into transportation use. This is the case if, as in San Diego, the system is constructed on an existing freight rail line, or if, as we are studying in Los Angeles, freeway medians are used for the lines.

In terms of their operating costs, Light Rail Systems are similarly impressive. As many of you probably know, the average bus can carry only 60 to 70 passengers. On the other hand, a Light Rail System can carry up to 700 passengers per train. Because of the increased productivity, it's been estimated that the operating costs of a Light Rail System are only one-third those of a Bus System carrying a similar number of passenger.

Finally, like transit in general, Light Rail offers energy conservation benefits and the opportunity to use energy sources other than petroleum.

The fourth and last area of transportation in which we're seeing change and hopefully will see considerable change in the future has to do with the types of engines and power sources for vehicles.

We at Caltrans are involved in one project in particular in the area which I think is worth singling out and that is a project to develop an Inductive Coupling System in Santa Barbara. One of our people will be speaking in some detail about the project this afternoon and I hope many of you will have the opportunity to hear his remarks.

I guess I'd like to sum up and conclude my comments by noting that there's a lot going on in transportation today and that we face a

lot of challenges in transportation to respond to underlying energy, environmental, and economic factors. We're no longer in a situation where we can respond to just about any transportation need by laying down a new ribbon of concrete and probably more than

ever before we need the help of the various segments of the engineering profession to tell us how we can do things better.

Thank you.

## Board of Directors Report

Samuel A. Leslie

VTS Secretary

The IEEE VTS Board of Directors met on May 26, 1982 at the Town & Country Hotel in San Diego. The meeting was held on the last day of the annual Vehicular Technology Conference.

The Board meeting was called to order at 9:00 AM.

### ROLL CALL

The following were in attendance:

Tony Bonney	'83 Conf. Publicity
Martin Cooper	Member-at-Large
*Robert E. Fenton	Treasurer
*Alvin Goldstein	National Conference Coordinator
Norman J. Haslett	'83 Conf. Tech. Papers
*Kent Johnson	Newsletter Editor
Sam Lane	Former President
William C. Y. Lee	Associate Transactions Editor, Communications Secretary
*Samuel A. Leslie	Chairman, National Site Selection Committee
*Fred Link	PACE Chairman
Frank Lord	Immediate Past President
*Roger Madden	Chairman of Publications
*George F. McClure	Comm. & Trans. Editor
*Samuel R. McConoughey	Vice President
*Stuart Meyer	President
*James J. Mikulski	Awards Committee Chairman, Awards & Standards Committees
Jack Neubauer	Chairman, Education Committee
*Ronald G. Rule	Financial Advisor
David Talley	'83 Conf. Finance
Bob Thompson	'83 Conf. Chairman
Vino Vinodrai	

(\* denotes elected Board member)

Eleven of the twenty-one present were elected Board members. Thus, a quorum was present for voting on matters before the Board.

### MINUTES OF LAST MEETING

Fred Link moved, McClure seconded that the minutes of the September 29, 1981 Board meeting be approved as published. The motion carried with all in favor. Fred Link also moved, Goldstein seconded that the minutes of the executive committee meeting held on February 25 of this year be approved. All were in favor.

### COMMITTEE REPORTS

#### Expanded Awards Program:

Jack Neubauer, Chairman of the Ad Hoc Expanded Awards Committee, presented to the Board a proposed expanded awards program. Participating Members of the ad hoc committee currently consist of Meyer, McConoughey, Madden, Mikulski, and Leslie. The expanded awards program is to provide recognition to those IEEE VTS members who have made outstanding contributions to vehicular technology. Three areas for recognition were defined, as follows:

- A. Technical Achievements & Contributions - Includes advancement of new technology, the publishing of clearly written and presented papers of technical significance, significant contributions to the work of recognized technical and standards committees, and the publication of recognized technical textbooks.
- B. Chapter & Conference Activity - Includes the level and effectiveness of chapter activity in stimulating participation and membership, promoting technical recognition for locally presented papers and lectures, the sponsoring or supporting of technical conferences, and the support and encouragement of local IEEE student members.
- C. Service to the Society - As evidenced by long term executive or project leadership, participation in committee activities that are of significance to vehicular technology, effective participation and service as elected officers and Board Members of VTS, meaningful contributions to intra-institute working groups, and promotion of student engineering society activities.

Following Neubauer's report, Madden moved, Rule seconded that the awards pyramid or organization concept as presented be endorsed by the Board. All Board members present voted in favor.

In addition, Fenton moved, Madden seconded that the Chapter of the Year award shall include both an award to the chapter and an award to the chairman. Vote was unanimous in favor.

Also, Meyer assigned Mikulski to the Ad Hoc committee to assist in bringing to a completion the awards program.

### Dan Noble Fellowship Award:

Al Goldstein reported that a procedure for the selection of candidates for the Dan Noble Fellowship has now been formulated. He reported that the Noble Fellowship Committee (consisting of Goldstein, Neubauer, Cooper, and Dr. Ernst) has selected their first recipient, Steven M. Parkes, who is currently finishing his senior year at the University of California. The Board commended Al Goldstein for bringing the Noble award to fruition.

Discussion following Goldstein's report centered on the selection criteria for future applicants for the fellowship award. Following the discussion, Meyer asked the fellowship award selection committee to consider limiting awards to North American candidates attending North American Universities, and to bring their recommendation before the Board for vote at the next Board meeting.

### Financial Report:

Fenton reported that the cash position of the Society continues to worsen; hence the reason for the Board voting to increase dues to \$10.00 via mail vote this spring. He also reported that \$5000 has been tentatively set aside for the previously reported expanded awards program; however, the Board did not vote to appropriate the money for this program during this meeting since further refinements of the program by Neubauer's committee are still in process.

### Publications Committee Report:

McClure reported that he and W. C. Y. Lee had reached an agreement to change the title of the Society's forthcoming mobile communications reprint volume from "Mobile Communications Engineering" to "Land Mobile Communications Engineering." This change was necessary since Lee is currently in the process of publishing a book titled "Mobile Communications Engineering."

McClure also reported that the IEEE Instrumentation and Measurement Society has invited the VTS to participate in the activities of its Automotive Maintenance Technical Committee (TC-9). The Board felt that it was appropriate to do so, and Madden volunteered to follow up by contacting Mr. Bernard Gollomp, who is a member of IMS's AdCom.

### OLD BUSINESS

Several items of an old business nature were reported on and resolved at this meeting, as follows:

#### Status of Board Election for the 1982-1984 Term:

Madden reported that the current election in process will get the election process back on schedule. Results are due to him from IEEE headquarters by June 18, which will result in a two and a half year term for the elected members. The next ballot will go out in the September/October time frame, which will result in a full three-year term (1983-1985) for the next group of elected members.

### 1983 Toronto Conference Committee Report:

The Toronto Conference Committee was well represented at the Board Meeting by:

Vino Vinodrai	Conference Chairman
Tony Bonney	Publicity
Norm Haslett	Technical Papers
Bob Thompson	Finance

Vinodrai reported on their current status for next year's annual Vehicular Technology Conference. In conjunction to a report of the financial status by the committee, Goldstein moved, Johnson seconded that the Board approve an additional \$1500 seed money for the Toronto conference. The motion passed with all in favor.

### 1984 Conference Location:

Meyer and Link reported that the Pittsburgh VTS Chapter would like to sponsor a national conference, preferably within the next couple of years. Meyer reported that the Board had previously approved Washington, D.C., as the site for the 1984 conference, but that the Washington, D.C. chapter is willing to defer to a later date in view of Pittsburgh's willingness to sponsor a conference. Link then moved, Fenton seconded that Pittsburgh be selected for the 1984 annual VTS conference. The motion carried with all in favor. The Pittsburgh conference chairman will be Mr. T. C. Selis.

### VTS Fellowships:

Neubauer reported that last year two of three candidates from VTS for IEEE Fellow status passed, and that he had submitted two candidates this year. He further indicated that it is not too early to start working on next year's candidates.

### VTS Standard for Spurious Measurements:

Neubauer reported that the joint EMC/VTS sponsored standard for spurious measurements is available, but has not been distributed to the appropriate EIA subcommittees. Neubauer will follow up on this item by making sure that the standard is forwarded to EIA.

### Associate Transactions Editors:

McClure noted that two vacancies continue to exist for associate Transactions editors, one for automotive technology and the other for transportation systems. Fenton has been acting for transportation systems, but no one has been covering automotive technology. McClure did note that he has identified two potential editors to fill these slots.

### WARC Special Issue:

Meyer assigned Johnson the task of announcing the availability of the WARC Special Issue in the next VTS Newsletter.

### NEW BUSINESS

The Board covered the following new business items at this meeting:

Subsidized Travel for Board Members:

Meyer reported the the Society is not in a financial position to generally support or subsidize travel for Board members. Only after a Board member has exhausted all other means of obtaining travel funds and then only if attendance by that Board member is essential for Board business will he then consider assistance with travel funds. Previous limitations on monetary limits and types of expenses apply, and will remain under close control by the Society President.

Conference Registration of Government Employees:

A previous resolution by McConoughey requesting that Government employees be allowed to attend conference sessions without having to pay the customary registration fee was tabled. Although the resolution was intended to cover all conferences, its primary purpose was to allow Government employees in the Washington area to attend the annual Washington mini-conference, who otherwise would not do so since the registration fee would be an unreimbursable fee for them. The reason for tabling this issue is that NABER and Communications Magazine is assuming the role of sponsoring the Washington mini-conference.

Meyer recommended that the Society may possibly continue to support the mini-conference by sponsoring one or more technical sessions. However, since the conference will now be co-sponsored by a commercial organization, Meyer is to look into the legality of the Society's involvement with the mini-conference by contacting IEEE Headquarters before continuing with his recommendation.

Appointments to Committees:

Meyer noted that for the most part new committee appointments will be held off until after the current election results are known. However, some preliminary assignments were made; Madden volunteered to chair the Constitution and Bylaws Committee, and Mikulski volunteered to assist Neubauer with the expanded awards program. Also, McConoughey was given the assignment of recommending candidates for his recently vacated Chapter Activities Chairman position.

Ground Rules for Chapter of The Year Selection:

Meyer noted that criteria for counting attendance at Chapter meetings for award selection already exist; McConoughey is to convey to the chapters that have been in contention for the "Chapter of the Year" award the ground rules for selection and to convey that each year's selection is made after review and approval by the Board.

Automotive EMC Problem:

Leslie reported on a letter from James Watson regarding an alarming increase in problems with two-way radios interfering with microprocessor-controlled vehicular ignition systems. Meyer noted that an EIA subcommittee addressing this problem is currently active, and that coordination with this subcommittee should be accomplished before determining whether it is appropriate for the Society Standards Committee to address this problem. Leslie is to provide copies of Watson's letter to Neubauer and Madden for further consideration.

Neubauer noted that the Board should also consider sponsoring three other EMC-related standards. The proposed standards are:

- Mobile Ignition Radiation Measurement Standard
- Mobile Receiver Spurious Measurement Standard
- Mobile Transmitter Spurious Measurement Standard

These standards are to be added to the agenda for Board discussion at the next meeting.

Requirements for Election of Chapter Officers:

Meyer reported on a potential problem with non-IEEE or associate IEEE members holding elected offices at the chapter level. McConoughey noted that the IEEE bylaws state that only full members of IEEE are allowed to hold elected office positions. The Board noted that the task of upgrading an associate member to member status is a relatively easy process, and that most associate members can upgrade to member status based on the appropriate experience and time in service. Meyer then assigned McConoughey the task of writing an article for the Society Newsletter outlining the requirements and steps required to upgrade to member status.

Additional Agenda Items:

Meyer introduced Frank Lord as the new PACE chairman (Professional Activities Committee for Engineers, formally PAC) for the Society. Johnson suggested that Lord report on the PACE activities in the Society's newsletter. McClure then moved, Goldstein seconded that Frank Lord be made an assistant newsletter editor for reporting on PACE activities. The motion carried with all in favor.

In regard to professional activities, a brief discussion ensued on whether the Society should embark on a politically oriented task to achieve representation on the commissions of agencies such as the Federal Trade Commission or the Federal Communications Commission by at least one person with an engineering background. It was felt that these agencies are currently hampered by a lack of understanding of the technical issues which are brought before them, and that engineering representation would be beneficial to all in preventing the generation of technically incorrect or unworkable rulings. This matter was tabled for further discussion at the next Board meeting.

Other miscellaneous items included a request to Leslie to incorporate the results of the current Board election in the roster, and to mail the updated roster to the Board members and the Chapter Chairmen. Also, McClure was requested to update the listings of elected Board members in the VTS Transactions.

Next Meeting:

The next full Board meeting will be held in conjunction with the Convergence '82 Conference in Dearborn on October 4-6. The Board meeting will be held on the last day of the conference (October 6); Leslie is to make the arrangements.

Respectfully submitted,

*Samuel A. Leslie*  
Samuel A. Leslie  
VTS Secretary

BOARD OF DIRECTORS 1982 MEETING ATTENDANCE

# - Executive Committee	F	M	O
	E	A	C
* - Elected Board Members	B	Y	T

NAME	FUNCTION	2	2	0
		5	6	6
*#Stuart Meyer	President	X	X	
*#Sam R. McConoughey	Vice President	X	X	
*#Robert E. Fenton	Treasurer	X	X	
*#Samuel A. Leslie	Secretary	X	X	
*#Roger Madden	Immediate Past President	X	X	
**William H. Chriss	Past Treasurer			
*#Al Goldstein	Conference Coordinator			X
**Kent Johnson	Newsletter Editor	X	X	
**Fred M. Link	Chairman, National Meetings Committee			X
**Charles Lynk	Chairman, Paper of Year Comm.			
**Robert A. Mazzola	Chairman, Membership Comm.			
**George F. McClure	Chairman of Publications Comm. and Transactions Editor			X
**George J. Mitchell	Member-at-Large			
**James J. Mikulski	Awards Committee			X
**Ronald G. Rule	Education Committee			X
James G. Bender	Member-at-Large			
Charles D. Bodson	Standards Committee			
CDR. R. H. Cassis	Council on Oceanic Eng.			
Martin Cooper	Member-at-Large			X
William J. Fleming	Assoc. News Ed., Automotive			
Norman J. Haslett	'83 Toronto Conf. Tech. Chairman			X
Trevor O. Jones	Member-at-Large			
William C. Y. Lee	Assoc. Trans. Ed., Communications			X
Frank Lord	PACE Coordinator			X
Jack R. Neubauer	Chairman, Awards and Standards			X
Tom Rubinstein	Assoc. News Ed., Communications			
Eric Schimmel	Assoc. News Ed., D.C. News			
Thomas C. Selis	'84 Pittsburgh Conf. Chairman			X
David Tally	Financial Advisor			X
Bob Thompson	'83 Toronto Conf. Finance			X
C. Vinodrai	'83 Toronto Conference Chairman			X
Tony Bonney	'83 Toronto Conference Publicity			X

TOTAL ATTENDANCE 6 21

(NOTE: The February 25th attendance record was for an Executive committee meeting only)



**33rd  
Vehicular Technology  
Conference**



## ***An Invitation to Authors***

THE PRINCE HOTEL, TORONTO, CANADA  
25-27 MAY 1983

Our 1983 **THEME** is:  
"CREATIVE RESOURCES MANAGEMENT  
new directions in Vehicular Technology"

**AUTHORS** are invited to submit 500 word  
abstracts by September 1982 to:

Norman Haslett  
Manager, Telecom & Electronics  
Metro Toronto Police  
2050 Jane Street  
Weston, Ontario M9N 2V3  
Canada Tel: (416) 967-2411

**SUBJECTS** are detailed overleaf

Since our emphasis in 1983 is on "...new directions..." papers that explain the new technologies and their applications will be especially welcome.

**MOBILE COMMUNICATIONS...** including  
trunked and cellular systems; single  
sideband; mobile satellite; packet radio;  
spread spectrum; spectrum management

**TRANSPORTATION...** downtown people  
movers; automatic vehicle monitoring;  
automated vehicles; computer aided  
dispatch; rapid transit control technology;  
economics of transportation

**AUTOMOTIVE ELECTRONICS...** engine and  
vehicle control systems; collision  
avoidance and safety systems; new  
directions in instrumentation;  
electromagnetic compatibility

**HIGHWAY ELECTRONICS...** traffic monitoring  
and control; automated highways; traffic  
surveillance systems; driver information  
systems

**IEEE VEHICULAR TECHNOLOGY SOCIETY**



## Chapter News

**Sam McConoughey**  
Chapter News Editor

### MEETINGS

#### Cleveland

"Future Ground Transportation Systems"  
by Dr. Robert Fenton, Ohio State University;  
Treasurer, VTS; VTS Speaker's Bureau  
Held jointly with Power Engineering Group on April 20, 1982, with 16 attending, including 2 guests.

"Tour of WCLQ - Channel 61 Television Facilities"  
by Al Evans, WCLQ  
Held on May 11, 1982 with 13 attending, including 7 guests.

"Lightning Protection for Communication Systems"  
by Karl Beckman, Motorola C&E  
Held on June 8, 1982 with 26 attending, including 8 guests.

#### Chicago

"Impact of microprocessors on Communications Technology"  
by Dr. Martin Cooper, V.P. Corporate Research, Motorola, Inc.  
Held on March 29, 1982 with 62 attending, including 15 guests and 17 student members.

"History of Two-Way Radio"  
by Stuart F. Meyer, E. F. Johnson; President, VTS.  
Held on May 17, 1982 with 32 attending, including 7 student members and 3 guests.

#### Washington, D. C.

"Spread Spectrum"  
by Paul Rinaldo, President, Communication Resources, Inc.  
Held on May 28, 1982, with 19 attending, including 6 guests.

### ELECTION RESULTS - 1982-83 Season

#### Cleveland

Chairman: Mr. Fritz Hemrich (216) 289-2759  
City of Euclid  
545 East 222nd Street  
Euclid, Ohio 44123

Vice Chairman: Mr. Roy Christian (216) 781-9400  
Cleveland Institute of Electronics  
1776 East 17th Street  
Cleveland, Ohio 44114

Secretary: Mr. Karl Beckman (216) 267-2210  
Motorola C&E  
12955 Snow Road  
Parma, Ohio 44130

### COMMENTS

The Chicago Chapter is back on its feet! Dick Crouse, Chairman has started off with a bang. Keep up the good work Chicago.

Honorable Mention goes to several of our chapter chairmen for the past season; Warren Benditz, Cleveland Chapter; William D. Whipkey, Denver Chapter; Malcolm Gotterer, Miami.

### CHAPTER OF THE YEAR

Awards were made at the 32nd Annual Vehicular Technology Conference by Awards Chairman, Jack Neubauer to the:

Cleveland Chapter - Sustained Performance and its Chairman, William Downer.

Washington, D. C. Chapter of the Year 1979-80 and its Chairman, Manuel Mayobre.

Washington, D. C. Chapter of the Year 1980-81 and its Chairman, Neal Pike.

and the San Diego Conference Committee, accepted by Eddie Simon, Chairman on behalf of the Committee.

### AVANT GARDE AWARD

The Board-of-Directors has approved continuation of this award, slightly modified from the award made to the Society's founders at our 30th Annual Conference. It now becomes part of the Society's Pyramid of awards which you'll be hearing more about.

At San Diego, the Board approved five new Avant Garde members:

John G. Nauman  
Robert A. Mazzola

Present and receiving the awards were:

William J. Fleming  
Ronald G. Rule  
Robert E. Fenton

It is planned to present awards to Messrs. Nauman and Mazzola during the Convergence Conference in Dearborn, MI October 4 - 6, 1982 at a get-together of Avant Garde members.

A form appears, in this issue, which may be used to nominate anyone you believe should be recognized for his pioneering, leadership, and continuing contributions in promoting the objectives of this Society. Send your nominations to the Awards Chairman.

### NEW OFFICERS - NOTE

Send your election results

and

Send a copy of each L-31 Meeting Report Form, following each meeting to the Chapter News Editor!

### SPEAKERS BUREAU

The following named speakers are available to speak at Chapter Meetings. The Society funds travel to your city. The Chapter is expected to pick-up local meals, lodging and transportation.

Contact these speakers directly to make arrangements, suggested topic, etc.

Mr. Jack Neubauer (609) 858-2788  
Awards Chairman  
P. O. Box 125  
Collingswood, New Jersey 08108

Mr. Jerry Stover (214) 692-3115  
Southern Methodist University  
Dallas, Texas



Mr. Charles Higginbotham (813) 355-1813  
7757 Conservatory Drive  
Sarasota, Florida 33580

Mr. Fred Link (201) 735-8310  
Cook's Cross Road  
Pittstown, New Jersey

Dr. Robert Fenton (614) 422-4310  
Ohio State University  
Electrical Engineering Department  
2015 Neil Avenue  
Columbus, Ohio 43210

#### NEW CHAPTER ACTIVITIES CHAIRMAN

Following this issue, Mr. Gaspar Messina will be your new Editor and Chapter Activities Chairman. As regular readers will recognize, Gaspar has assisted this Editor in the past. He has also served as Registration Chairman at the VTS Conferences held in Washington the past several years and is known to many of you.

By Samuel R. McConoughey, Past Editor  
Shiela Parker, and  
Gaspar Messina, Editor and Chapter Activities Chairman  
9800 Marquette Drive  
Bethesda, Maryland 20817

## Board of Directors in Action



Ronald G. Rule receives IEEE VTS Avant Garde Award from Awards Chairman Jack Neubauer, left, and Vice President Sam McConoughey, right.



IEEE VTS President Stu Meyer conducts board meeting at San Diego VT Conference.



IEEE VTS Board Meeting during San Diego VT Conference.



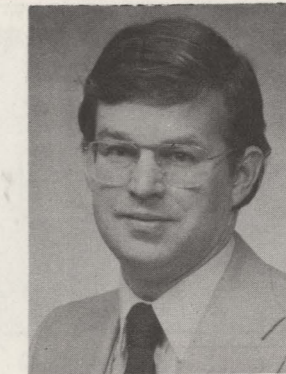
# 1982 IEEE Vehicular Technology Society

## Directory of Chapters and Chairpersons

BOSTON	Stuart J. Lipoff Arthur D. Little Inc. Cambridge, MA 02140 (617) 864-5770	MICHIGAN, SE	Louis L. Nagy 2528 Irma Warren, MI 48092
CANTON	C. T. Unger 3759 Crestwood Drive, NW Canton, OH 44708 (216) 477-5918	MONTREAL	None
CHICAGO	None	NEBRASKA	None
CINCINNATI-DAYTON	Frederick R. Bay 7378 Commonwealth Drive Cincinnati, OH 45224	NEW JERSEY COAST	John O'Neill 19 Mountainside Dr. Colts Neck, NJ 07722 (201) 946-8736
CLEVELAND	Mr. Fritz Hemrich City of Euclid 545 East 222nd St. Euclid, OH 44123 (216) 289-2759	NEW YORK CITY	W.C.Y. Lee 492 Brentwood Drive Willow Grove, PA 19090
COLUMBUS	Al Shirk 184 Crandall Drive Worthington, OH 43085	ORLANDO	Melvin C. Kelch 3118 Ivel Drive Orlando, FL 32806
DALLAS	Paul Hartman 820 Thoreau Allen, TX 75002	PITTSBURGH	Thomas J. Hutton 222 W. Swissvale Avenue Pittsburgh, PA 15218
DENVER	Bill Whipkey 8069 Meade Street Westminster, CO 80030 (303) 427-2411 Home (303) 779-0600 Work	SACRAMENTO	Alfred E. Jacobus 2804 Chad Court Sacramento, CA 95827 (916) 445-8803
FLORIDA-West Coast	Acting Chairman William C. Prickett General Telephone Company of Florida 610 Morgan Street Mail Code 66 Tampa, FL 33601 (813) 229-6850 Ext. 2873	SAN FRANCISCO BAY	Terrence J. Yung SRI International 333 Ravenwood Avenue Menlow Park, CA 94025 (415) 326-6200 Ext. 2238
LOS ANGELES	Mr. Gary David Gray Orange County Communications 481 The City Drive South Orange, California 92668 (714) 834-2137	SYRACUSE	None
MIAMI	Malcom Gotterer Florida International Univ. Miami, Florida (305) 552-2743	TORONTO	Dale Moreland Canadian General Electric Company Mobile Radio Dept. 100 Wingold Avenue Toronto, Ontario, Canada M6B, 1R2
		TOKYO, JAPAN	Dr. Marlo Akiyama Kogakuin University 1-24-2 Nishi-Shinjuku Tokyo, 191, Japan
		VANCOUVER	Alen R. Howatson 902 Fourth Street New Westminster, BC Canada V3L 2W6
		WASHINGTON, D.C.	Dan Davies Motorola, Inc. 4710 Auth Place Suitland, MD 20746 (301) 849-3950

## Automotive Electronics

Dateline: Detroit



**Bill Fleming**

Automotive Electronics Editor

### TRW ELECTRONIC TRUCK ENGINE CONTROL

TRW's Transportation Electronics Division in Farmington Hills, Michigan, announced the successful development and testing of an Electronic Truck Engine Control (ETEC) System that increases fuel economy while offering the safety and comfort of cruise control.<sup>1</sup> Test data on the product, obtained on four different ETEC units by Feld Truck Leasing of St. Louis MO, show fuel savings ranging between 4 percent and 12 percent depending on load factors and operating conditions.<sup>2</sup> Charles Tyrrell, Feld's Vice President of Special Services, said that: "results obtained from prototype TRW speed/cruise control systems have been fantastic" -- see Reference 2.

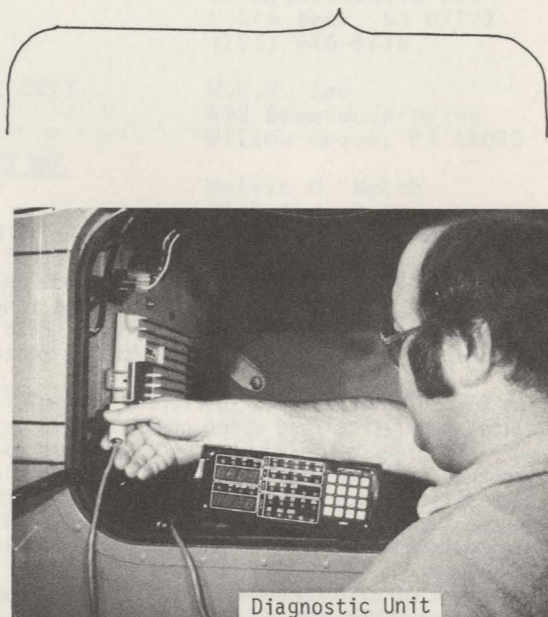
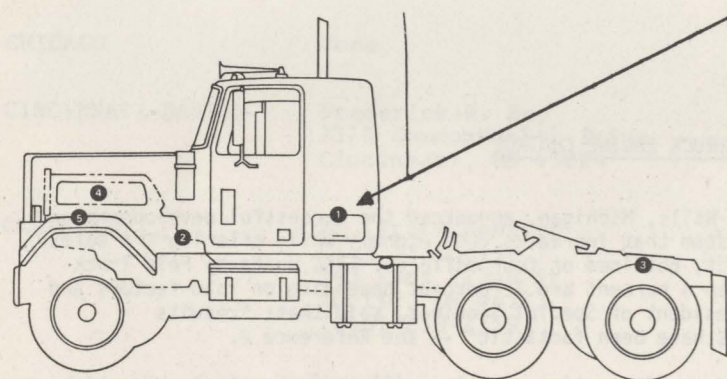
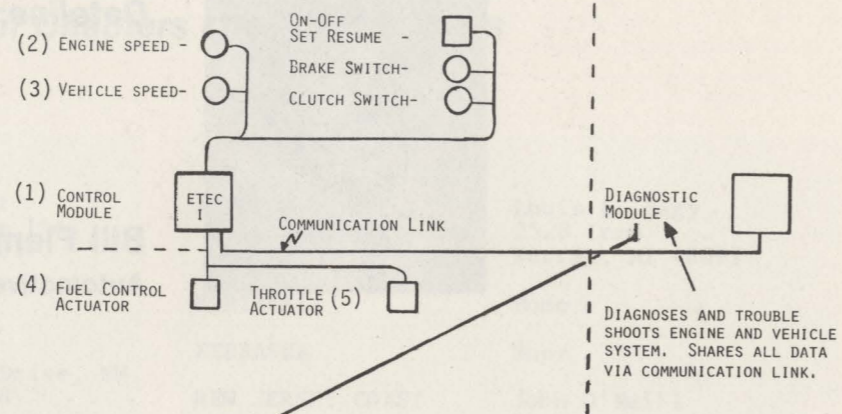
The ETEC unit offers four different control function modes of operation, namely: (1) cruise control mode which allows pedal-free road speed control up to any pre-programmed limit (limits below 60 MPH are preset to obtain more efficient vehicle operation), (2) road speed governor mode to limit top vehicle speed whether or not the truck is in the cruise control mode, (3) engine speed limiter mode to prevent excessive engine speed during lower gear shifts and prevent engine operation in the conventional governor droop or "over-shoot" regions, and (4) constant engine speed governor mode for precise control of engine speed for stationary power take-off applications such as bulk pumping, for example.

Locations of ETEC components in a typical truck retrofit installation are shown in the schematic diagram below. System inputs include an engine speed sensor and a vehicle road speed sensor, shown in locations 2 and 3 of the diagram; brake and clutch switches (not shown in the diagram) are used to cancel speed control modes. System outputs include a fuel control actuator valve and a throttle position actuator, shown in locations 4 and 5 of the diagram. The ETEC control module is shown in location 1 of the diagram. In addition; a small, hand-size plug-in diagnostic box is available for checking the system calibration and system operating integrity.



TRW's Electronic Truck Engine Control (ETEC) was Tested on Vehicles Like the One Shown Here. Four-to-Twelve Percent Fuel Savings, Depending On Load and Other Variables, Were Demonstrated.

### SYSTEM BLOCK DIAGRAM

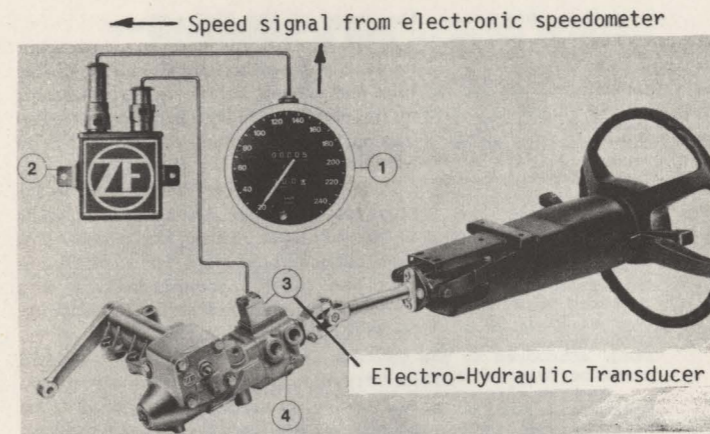


Schematic Diagram Showing Location of ETEC Components in Typical Truck Installation and ETEC System Block Diagram -- see description in text.

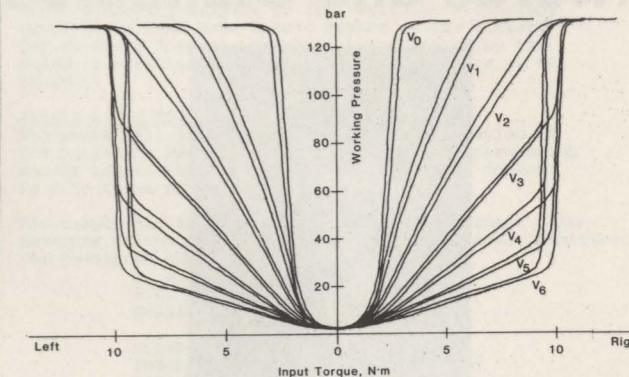
### SPEED SENSITIVE POWER STEERING WITH ELECTRONIC CONTROL

Speed sensitive power steering with electronic control, called Servotronic, has been developed by ZF in Germany, and will be available as an OEM product next year.<sup>3</sup> The control gives 95 percent assistance during slow maneuvering and parking, while providing progressively less assistance, decreasing to 65 percent, as road speed increases. This allows better road "feel", plus precise manual control.

As vehicle speed increases, output signals are fed from the microprocessor module to an electro-hydraulic transducer that positions a pair of rotary piston valves in the steering box. These are arranged to control hydraulic feedback and hydraulic reaction pressure (power assistance). Plots of power assistance working pressure as a function of steering wheel rim input torque are shown below for various values of vehicle speeds, ranging from  $V_0$  (stationary) to  $V_6$  (maximum).



Variable - Assistance Servotronic Unit

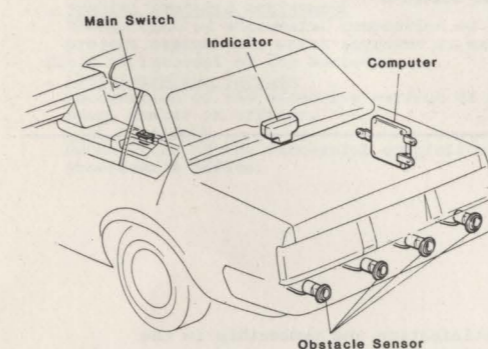


Output Characteristics of Servotronic Unit

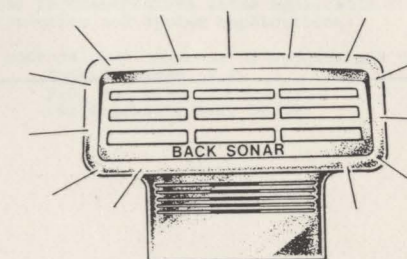
### TOYOTA REVERSING WARNING SYSTEM

Toyota's experimental car, EX-11, includes a sonar warning system that identifies obstacles in the car's reversing path.<sup>4</sup> Measurements of the time required by sound waves to bounce back from objects gives the obstacle's position and distance to it. The system consists of two transmitters and two receivers of ultrasonic waves -- all flush mounted in the rear bumper.

In sequence, sonar reflection times are measured between one transmitter to one of the receivers, then to the other receiver, and finally from the other transmitter to the second receiver. A warning lamp panel located inside the vehicle is vertically divided into three parts, each identifying the obstacle in its approximate location to the car (dead center, left, or right). The warning panel is also horizontally split into three parts, each identifying the closeness of the obstacle to the car (less than 0.5 meter, 0.5 to 1 meter, or 1 to 2 meters). An audible signal is also provided which gives continuous beeping in the less than 0.5 meter range, a series of three short beeps in the 0.5 to 1 meter range, and a succession of two short beeps in the 1 to 2 meter range.



Toyota Reversing Sonar Unit

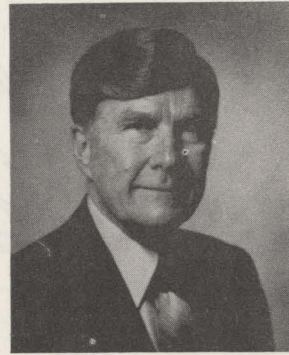


Toyota Indicator Unit

### REFERENCES

1. J. Stephan, "TRW Inc. Introduces Electronic Truck Engine Control (ETEC) Systems", TRW News Release, Farmington Hills, Michigan, May 17, 1982.
2. R. Cross, "Speed and Cruise Controls: Part 1 - Heavy Vehicles", *Commercial Car Journal*, March 1982.
3. D. Scott, "Electronics Control Speed-Sensitive Power Steering", *Automotive Engineering*, April 1982, pp. 82-83.
4. J. Yamaguchi, "Toyota Adopts Sonar Reversing Warning System", *Automotive Engineering*, April 1982, pp. 86-87.

# Awards and Standards



**Jack Neubauer**

**Awards and Standards Editor**

J. R. NEUBAUER, P. E.  
COMMUNICATIONS CONSULTANT  
BIOGRAPHY

Jack Neubauer is the VTS Awards Program Chairman and is currently developing an expanded achievement recognition program. Jack has been continuously active in IEEE and VTS related activities since 1959. Prior to that he was active in IRE and AIEE from 1949 serving on the National Convention Technical Program Committee and working as Chairman of the Mobile Interference Standards Sub-Committee 27.7. Since 1959 he has served as a member of Standards Committee 16.0 on Mobile Communications Systems and Chairman of Sub-Committee 16.2 Measurements of Mobile FM Receivers. From 1959 to 1969 he was a member of the IEEE Radio Communications System Committee, also during this period he was a member of the National Professional Technical Group on Vehicular Communications Administrative Committee. While on the ADCOM he served as Treasurer, Vice-Chairman and Chairman. During his tenure of the PGVC/VTC Chairmanship the Automotive Electronics Group was merged into the VTG, predecessor

to VTS, at which time, the scope of the PGVC was expanded to include all forms of Transportation Technology. Jack also served as Chairman of the Philadelphia PTGVC and Professional Technical Group on Communications during 1959 and 1960.

He is currently serving on the VTS Papers Review Committee, having served in the past as Chairman of the Technical Papers Committee National PTGVC in 1958 thru 1960. Back in 1955 he was Chairman of the Philadelphia Communications Technical Division of the Technical Program Committee.

Other committee activities have included the Institute Transportation Committee, EIA Land Mobile Systems Standards, American National Standards Institute C-63 on Radio Interference Susceptibility, Electromagnetic Compatibility Society Standards and Chairman of EMCS Sub-Committee on Vehicular Interference 27.7. In 1978 he worked with the Steering Committee for Metropolitan Communications Systems Study sponsored by the National Academy of Science Board on Telecommunications.

Jack is also active in other Professional Engineering Societies, being an active member of the National Society of Professional Engineers, the American Institute of Aeronautics and Astronautics, the IEEE Communications Society, the IEEE Antenna and Propagation Society and the Radio Club of America.

During the period 1950 thru 1972 Jack was employed by RCA successively as a design and systems engineer, Group Engineering Manager, Ballistic Missiles Early Warning System Intrasite Communications Manager, Director of Implementation and Operations Minuteman Sensitive Command and Support Information Networks and Manager Technical Coordination NASA Extra-Vehicular Lunar Communications. Prior to his RCA employment, he worked as a Broadcast Radio Engineer a U.S. Signal Corps Civilian Instructor, Supervisor of Communications Continental Airlines, President and General Manager Electronic Development Corporation Denver, Colorado, a Communications Consultant and Chief Radio Engineer Wyoming Highway Department.

Since leaving RCA he has conducted a private Communications Consulting business.

Jack is a Registered Professional Engineer in the States of New Jersey and Pennsylvania. He holds a 1st Class Radiotelephone Operators License. He has published numerous technical papers and reports covering all aspects of communications and has contributed to The Encyclopedia Americana International Edition in 1973.

He is Vice Chairman of his local community's Planning Board and Chairman of its Environmental Protection Committee, an active member of his church and the Christian Business Men's Committee USA. He is married with two daughters and four grandchildren. His favorite extra-curricular activity is lecturing on the Bible and Science.

## A PROPOSED EXPANDED AWARDS PROGRAM FOR THE VEHICULAR TECHNOLOGY SOCIETY

The Board of Directors of the Vehicular Technology Society has adopted a proposed plan for establishing an expanded Awards Program. The Program has been in the process of development over the past two years, with the objective of providing increased recognition of the Society's members and Chapters as well as other outstanding individuals for meritorious achievement in the field of interest of the Vehicular Technology Society.

TECHNICAL ACHIEVEMENTS AND CONTRIBUTIONS are evidenced by:

- Development of new and novel concepts of vehicular technology as applied to land-mobile communications, automotive electronics and land transportation.
- Clearly written and presented papers published in recognized technical journals.
- Recognized contributions to the work of Government and Industry Technical Committees.
- Recognized contributions to the work of National, International, IEEE and related Society's Standards Projects.
- Publication of recognized technical textbooks used in educational and work training programs.

PROMOTION OF CHAPTER AND CONFERENCE ACTIVITY as evidenced by:

- The level and effectiveness of Chapter activity in

stimulating participation and membership in the Vehicular Technology Society.

- Chapter promotion of technical recognition of its members via presentation of papers and lectures.
- Chapter sponsorship and/or support of technical conferences which encourage free interchange of ideas and experience among engineers engaged in the Vehicular Technology field of interest.
- Chapter sponsorship of IEEE student activities directed toward cultivating interest vehicular technology.

SERVICE TO THE SOCIETY as evidenced by:

- Executive leadership in all phases of the Society's programs, consistently demonstrated over a period of years.
- Contributory activity to committees, within the VTS which promotes its growth and sphere of interest in the vehicular utilization of electrical and electronic sciences.
- Effective administration and project leadership in programs unique to the VTS field of interest.
- Participation in intra-Institute working groups which achieves recognition of the VTS contribution to the overall electrical and electronic engineering sciences.
- Effective service as elected officers and Board Members of the VTS.
- Promotion and support of Student Engineering Society activities which encourages their career in the Vehicular Technology field of interest.

## TECHNICAL ACHIEVEMENT AWARDS

### SOCIETY PAPER OF THE YEAR

• For the paper which most clearly presents new designs or systems as applied to the Vehicular Technology field of interest in a practical and understandable manner and which has appeared in an IEEE publication during the previous chronological year.

### ANNUAL TECHNOLOGY PAPERS

• For the four papers covering the VTS field of interest in the specific fields of communications, electronics, transportation and standards and which more particularly present new methods and practical application of solutions to the design of systems and equipment specifically utilized in those fields.

### CHAPTER PAPER OF THE YEAR

• For an orally presented paper given at a Chapter meeting, which contributes useful technical insight into the field of interest of the VTS.

### CHAPTER AND CONFERENCE ACTIVITY AWARDS

#### CHAPTER OF THE YEAR

• The award shall be made annually to the VTS Chapter which maintains the highest consistent level of activity programmed to the advancement of the knowledge and understanding of vehicular technology among its local members.

#### VTS TECHNICAL ACHIEVEMENT AWARDS

• For the recognized work of an engineer, which contributes to the knowledge and understanding of science and engineering in the field of Vehicular Technology.

• The Principal VTS Achievement Award will be a Gold medal and cash honorarium given to honor members of the engineering profession or allied arts and sciences who have, by virtue of their exceptional, cumulative, and lasting technical accomplishments, advanced the objectives of the Society and the IEEE.

• The Outstanding Technical Achievement Award will be a Silver Medal and cash honorarium given to honor members of the engineering or technical profession who have made a singularly outstanding contribution to the advancement of Vehicular Technology.

• The Outstanding Professional Contribution Award will be a Bronze Medal and cash honorarium given to honor individuals in the U.S. who have made significant and continuing career contributions, including other than engineering or technical, to the advancement and recognition of Vehicular Technology, or to the objectives of the Society and the Institute.

#### OUTSTANDING SERVICE RECOGNITION AWARDS

These awards will be made to individuals in recognition of unusual meritorious service to the VTS. The following services are to be recognized.

##### Executive Leadership

Recognition of continuing service as a member of the Board of Directors and as a creative and motivating leader in the activities of the Society.

##### Special Projects Achievement

Recognition of successful completion of a special project assignment, which improves or expands the field of interest of the Society.

##### Administrative Service

Recognition of the effective service of an elected Board member or officer.

##### Past President

Recognition of the successful completion of the President's office.

### Honorary Membership

Recognition of significant technical contribution and outstanding service to the Vehicular Technology Society. He must have been a member of the Society for at least 5 years. He shall be nominated by the Board of Directors and elected by the members of the Society.

### AVANTE GARDE PIONEERS

The award will be made periodically by selection of the Society's member in recognition of the pioneering and/or continuing activity of the Society's member in its three prime fields of interest.

The membership is invited to evaluate and submit their comments on the plan as outlined, to the Awards Committee. The Committee consists of the following:

J. R. Neubauer, P. E.  
P.O. Box 125  
Collingswood, N.J. 08108

Roger Madden  
Federal Communications Commission  
1919 "M" St., N.W.  
Washington, D.C. 20554

Samuel R. McCoughey  
Federal Communications Commission  
1919 "M" St., N.W.  
Washington, D.C.

James J. Mikulski  
Motorola Inc.  
1301 Algonquin Road  
Schaumburg, IL 60196

### VTS STANDARDS ACTIVITY

The VTS Standards Committee has, in cooperation with the Electromagnetic Compatibility Society Standards Committee, published an Institute approved Measurements Procedure for Spurious Emissions emanating from Land Mobile Communications Transmitters. The Standards Committee encourages engineers engaged in mobile communications equipment design, to evaluate the measurement procedures and determine what, if any, improvements or corrections could be made.

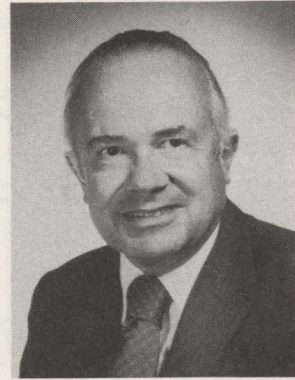
The complete publication may be obtained from the IEEE Standards Office, and is identified as IEEE Standard 377-1980. The Test Procedures include methods, test apparatus, test conditions and standard reference terms and values. The standard includes step by step procedures covering Conducted Spurious, Modulation Sidebands, and Broadband Noise, Narrowband Spurious, Intermodulation Spurious and Radiated Spurious.

The Standard will establish energy levels of spurious emissions in quantitative terms applicable to basic design practice and system applications.

Please address your comments or suggestions to:

Jack Neubauer, P. E.  
P.O. Box 125  
Collingswood, N.J. 08108

# Professional Activities



**Frank E. Lord**  
Professional Activities Editor

FRANK E. LORD  
Senior Member  
BSEE Union College,  
Schenectady, N.Y.

Heads the Control Systems Section at Western Division of Sylvania Systems Group, Mountain View, California. His work frequently involves creating control sub-systems for outfitted military vehicles. One recent project involved converting an armored personnel carrier into a simulation of an unfriendly mobile missile launcher, including detection gear, steerable launcher and associated electrical and electronic equipment.

Mr. Lord served on active duty with the Navy as an Engineering Duty Officer and is now a Captain in the Naval Reserve.

He is presently the Chairman of the Santa Clara Valley Section and has served that Section in other offices, including Professional Activities Chairman, for several terms. He is an associate editor for the United States Activities Board's (USAB) publication, IMPACT, a publication which he founded in 1977. Mr. Lord served one term on USAB from 1976 through 1977. In 1980 he received the USAB Citation of Honor for outstanding contributions to furthering the aims and objectives of professionalism.

No sooner had I become your Professional Activities Committee (PAC) Chairman than the acronym was changed to PACE. Although the Institute has had this activity and acronym for quite a few years now, a much more widely known type of activity has grown to prominence on the American scene in recent years; namely, Political Action Committees (also abbreviated PAC). This latter activity has been sanctioned under Federal law and allows parent organizations to contribute, via their PAC, campaign money to politicians who favor their views. It is not difficult to imagine the confusion that would result when a group from IEEE PAC would have an appointment with a politician, an event that is more and more common since the members have chosen to be active in matters related to our profession beyond the purely technical realm. The solution was to change the name of our activity to Professional Activities Committees for Engineers (PACE). This simple change provides for an easy transition while at the same time being distinctive enough to avoid confusion. The sounds of PAC and PACE are quite different, the short "a" of the former turning into a long "a" in PACE.

Now, to complicate matters a bit more, it turns out that the United States Activities Board (USAB) is considering the question of whether the Institute should have a Political Action Committee (PAC). We could end up with both, but the law insists on an arms-length relationship. Consequently, USAB and PACE

would never be closely linked to any PAC that is formed.

Each year USAB holds meetings involving the PACE leadership, in order to effect a high degree of two-way communication and to address issues of concern in open forum. These meetings have varied in number from 1 to 3, depending upon circumstances, and the leadership style of the Vice-President for Professional Activities. I participated in such a meeting April 2 and 3, which was the first of two planned for the year.

Among the events was a discussion by Jack Doyle, the newly-installed V.P. for professional Activities, of the goals of USAB. I believe these goals may be of considerable interest to our VTS members and would like to list them here, along with my observations:

1. Probe the "engineering shortage" to unearth the facts and outline our position. Availability of any commodity can be measured in economic terms. I know of no engineering work that is going undone because of lack of responsible bids from responsible and competent organizations. Engineering salaries, in terms of buying power, have been dropping for some time. Furthermore, no engineering shortage heralded in the past has ever materialized.

2. Push the newly-introduced National Patent Rights Bill. This would guarantee the inventor rights to his own inventions that are unrelated to his employer's business. It seems only fair, but watch where the opposition comes from.
3. Introduce and push a Service Contract Bill for professionals. Professionals, largely engineers, are the only group subjected to wage busting and fringe busting when service contracts are renewed or changed from one contractor to another. This, of course, can be very disruptive to our members careers and families. Although this affects only a small percentage of our members, it does represent the pits of what exists in our profession, and it is thus highly important that it be improved.
4. Initiate an Employment Assistance effort where and if we see pockets of engineering unemployment. VTS can be proud that it pioneered in this area. My predecessor in this office, V. Edgerton, initiated and led a successful effort to aid our unemployed members in Detroit.
5. Continue activities on Pensions, Ethics, Registration, Women in Engineering and Career Maintenance. The important word with respect to these ongoing activities is "continue". It seems that new volunteers are always needed to keep these activities viable.
6. Hold the Technology Policy Conference in Washington, D.C. during Engineers' Week in conjunction with the IEEE Boards. The importance of this activity is that it provides an interface with our legislators that keeps IEEE known and helps when we need appointments with individuals to discuss matters affecting our members. This event has already been held successfully.
7. Establish an IEEE Political Action Committee (PAC). This could be valuable in helping elect legislators who are sensitive to our professional problems and needs and would be willing to help us.
8. Probe the root causes of the United States R & D problem and take a position. This is an example of a national problem that can benefit from our help. Certainly, any national policy that emerges from Washington could not be considered properly developed without the participation of the major engineering societies.
9. Disseminate the IEEE Energy slide show throughout the country. This slide show was produced in 1981 as a vehicle for informing the public on the facts of the energy situation in the United States. The USAB desires to have the show given by members in their communities to the greatest extent possible. VTS members should let me know if they are interested in participating.
10. Reactivate the Health Care Policy Committee. This is but one example of an area where our profession and individual members can be affected by decisions that are made in a technological area. Therefore, we are responsible for participating in the development of policy that will eventually affect us.
11. Gain a higher acceptance of USAB by the membership. It is noted in letters in our various publications, and in remarks that members make, that some members do not generally approve of the activities of USAB. We are all aware that when the membership voted to modify the IEEE Constitution to sanction professional activities that 13% voted against it.

It is probably from this group that emerge those few remaining individuals that still equate this kind of activity with trade unionism. We are also aware that there is a segment of the membership that feels USAB is not doing enough. These two segments of opinion probably result from a lack of understanding of the USAB programs and the limits imposed by finite resources and the limited number of members that step forward to pitch in. It is believed that better communication can lead to better understanding and that the size of this minority group can be reduced. Of course, on any issue there will be those that disagree with the ultimate action, but the leadership of USAB expressed the intent of minimizing dissatisfaction through exercise of thoroughly reasoned responses to the situations they face.

The last item above leads into some comments on the purpose of this column. It is not my intention to have communications on professional matters flow in one direction only. I would be most pleased to hear from VTS members with their questions, expressions of concern and thoughts. These may be solely for my benefit as your VTS PACE Chairman, or for publication in this section of the Newsletter. Just be sure to DISTINGUISH. Until the next issue, I'll be looking forward to hearing from readers.



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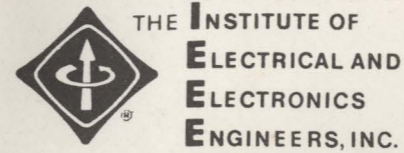


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(See Awards Summary)

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3. NOMINATOR:

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4. JUSTIFICATION FOR AWARD: (Continue on reverse if necessary)

5. ACTION BY VTS AWARDS COMMITTEE:

Approved  YES  NO  RETURNED FOR ADDITIONAL JUSTIFICATION  
 By: \_\_\_\_\_ Chairman Awards Committee Date \_\_\_\_\_  
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