TUTORIAL SHORT COURSE

CRYPTOGRAPHY AND DATA SECURITY

Los Angeles, January 29-31, 1979

Washington, DC, April 9-11, 1979

Taught by Prof. Martin E. Hellman

TOPICS

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Commercial Applications
System Considerations
Classical Systems
Pseudorandom Number Generators
The Shannon Theory Approach
Cryptomachines
IBM's Cryptosystems
The National Data Encryption Standard (DES)
DES Strengths and Weaknesses
Stream, Block and Other Classes of Systems
Error Control
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Martin E. Hellman is an Associate Professor of Electrical Engineering at Stanford University and is internationally known for his work in cryptography.

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The IEEE

Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

Volume 25 October 1978 No. 4

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Lee Discusses You & Professional Activities

October 18, 1978, Faith Lee will address the North Jersey Section at ITT in Nutley. Ms. Lee has a long and active history in engineering and IEEE.

Faith has served in IEEE as Chairman of the Electron Devices Chapter (N.Y., L.I., N.J.), Chairman N.Y.C. Section's Professional Activities Committee (PAC), and is currently Chairman of the Princeton Section's PAC. On the national level, Faith is active on U.S.A.B.'s Pension, Awards and Ethics committees. She has supported the Service Contract Act HR-314 and the Limited Employee Retirement Account (LERA) by visiting with Senators and Congressmen in Washington.

Ms. Lee is a Project Leader at RCA's Advanced Technology Center in Somerville, N.J. She is currently working on IC design and process development including ion implantation and plasma processing. Much of her personal time and effort has been given to technical as well as professional activities.

Faith is a graduate engineer, a Senior Member of IEEE and a well informed, dynamic and dedicated individual.

Her discussion will include PAC involvement on the local and national level and a report on the September '78 USAB Workshop in Los Angeles. Most important, she will define your position and involvement in our activities. Faith says, "All engineers are involved, most of them just don't know it."

All IEEE members, engineers and their guests are invited to attend.

Time: 7:30 PM, Wednesday, October 18, 1978.
Place: ITT Conference Center, 500 Washington Ave., Nutley, N. J.
Refreshments: Refreshments will be served.
For Additional Information: Call Richard Tax, North Jersey PAC Chairman, (201) 573-0387, After 7 PM.

Ford Motor Co. Tour

The IEEE North Jersey Section Reliability Chapter will sponsor a tour of the Ford Motor Company Assembly Plant, Mahwah, N. J.

All IEEE members and guests are welcomed !!! However, due to a limited group, reservations are required.

Time: 6:30 PM, Wednesday, October 18, 1978.
Place: Ford Motor Co., Mahwah Assembly Plant, State Highway 17, Mahwah, N.J.
Reservations: Required by Wednesday, October 11, 1978.
For Further Information: Ralph Hernandez, (201) 288-2000 ext. 5930; after 5 PM (201) 935-8205.

O'Grady Becomes ASTM President

Joseph G. O'Grady, general manager of Public Service's energy laboratory, took over the reins of the American Society for Testing and Materials on July 1. Mr. O'Grady is a past Chairman of the North Jersey Section, IEEE.

O'Grady, who also is a vice president of PSE&G Research Corp., was appointed laboratory engineer in 1969 and became manager of the lab in 1974 and general manager last month. He received a bachelor's degree in electrical engineering from New York University.

Data Communications For Office Seminar

"DATA COMMUNICATIONS FOR THE OFFICE OF THE FUTURE" is the title of a one-day IEEE Comsoc Seminar relating to future trends in this rapidly expanding field.

The following topics will be discussed, with the speakers to be announced in the near future, at this November 28th seminar:

PERSON TO PERSON COMMUNICATIONS

MACHINE TO MACHINE COMMUNICATIONS AND DATA NETWORKS

MACHINE TO PERSON INTERACTION

THE OFFICE IN THE HOME

USER EXPERIENCE IN OFFICE DATA COMMUNICATIONS

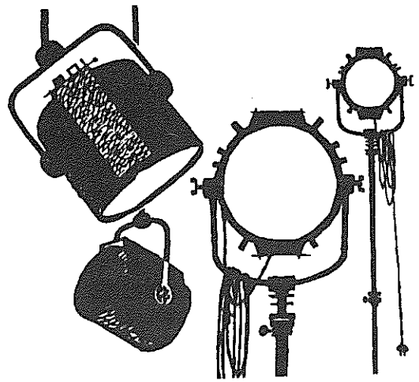
Time: 9 AM to 4:30 PM, Tuesday, November 28, 1978.

Place: United Engineering Center, 345 E. 47th Street, N. Y.

Fee: (includes lunch & coffee breaks) $40 Members, $45 Non-Members, $10 Students. Make payable to "IEEE COMSOC."

Mail To: Roger Coleman, Treasurer, Education Committee, New York Telephone, 210 West 18th Street, N. Y. 10011, 5th Floor.

For Further Information: Roger Coleman, (212) 620-3877.



SPOTLITE ON NORTH JERSEY

A quote from the IEEE Constitution, Article I, Section 2 – "Its purposes are (a) scientific and educational, directed toward the advancement of the theory and practice of electrical engineering, electronics, radio and the allied branches of engineering and the related arts and sciences; . . . (b) professional, directed toward the advancement of the standing of the members of the professions it serves."

I threw that in to establish the legitimacy of one of our most active and most vocal groups in the North Jersey Section, the Professional Activities Committee. Some would say it is also one of our most controversial activities. That is why we need to remind ourselves that Professional Activities are a legitimate activity franchised by our Constitution.

Many members fear that PAC is trying to turn IEEE into a labor union although that is specifically proscribed by the Constitution. Personally, I think of PAC as a lobbying group. This committee informs our members about impending legislation that would affect us. They also try to influence legislators and the public to support laws, practices and activities that will benefit engineers. That's where the controversy starts because that's where toes start getting stepped on.

Not too many of us get excited about proposed changes in Switchgear Standards but look at some of the topics PAC has gotten involved in:

Opinion Surveys
Registration of Engineers
Age Discrimination
Wage Busting
Pensions
Government Contracts
Engineering Curricular
Occupational Outlook
Engineering Ethics

Those are the kinds of topics that precipitate bar-room brawls! They have even started a few brawls at IEEE Headquarters. The problem is that to achieve its goals, PAC is often put into the position of trying to tell the other guy how to run his government, business, school or career. And that's where things start getting a little touchy.

So that's what PAC does. Our principal "do-er" in North Jersey is Dick Tax, our PAC Chairman. Dick is not a low silhouette type of guy. He works very hard for what he believes in and devotes many hours to IEEE and the engineering profession. He graduated from Fairleigh Dickinson with a BSEE (not BS-Politics) and he is a Senior Member who has been designing servo and control systems for 18 years so he understands what engineering is all about.

Some people like what PAC is doing. Some don't. But two things are certain – it's not going to go away and it will have some impact on your career. If you're a computer guy you may be able to shrug your shoulders about switchgear standards but if you're an engineer you better pay attention to what PAC is doing. If you want to do more than just pay attention, Dick would be glad to have you on his committee.

Don Bathke

insurance policy" – "Because it's the thing to do, my professor or boss suggested it . . .", etc. Now look around you and see how many members are really active? How many attend meetings? Ask someone why not? He will say subjects not interesting, location too far, wrong night, etc. Now ask him, or yourself for that matter, what have you done about this – have you ever contacted your Section Officers with suggestions, have you offered to help run your Section, have you volunteered for committees? Have you contributed to your profession?

If you want to be a professional, you must work at it yourself. Be active, volunteer, suggest, join in. Maintain a high standard for yourself – in your work, in your conduct, your dress and appearance, and in your relationships with others.

Take time to review candidates, qualifications, not only for political offices, but of those who are annually elected by your society. And, above all, take the time – it is only a few minutes – to vote. Do you realize that, in the typical IEEE Section, less than ten percent vote for the local Section Officers!

How often have you said "someone should do something"? . . . Stop and think, you are that someone.

A profession can only reflect the sum of inputs from its members.

As in the Military, where you are either winning or losing, never status quo, so in our Profession – we are either bettering the Profession or losing.

It is up to you, each and every member, to think and to act.

You And Age Discrimination:
What You Should Know About the Growing Impact of Age Discrimination in Employment on Engineering Professionals Over 40

This new booklet, IEEE Cat. No. UHO 131-3, is now available from the IEEE Service Center, 445 Hoes Lane, Piscataway, N. J. 08854. The booklet includes: Age Discrimination and the World of Work; "Red Flag" Warning Signals: How to Detect and Assess Age Discrimination; Age Discrimination in Employment: A Look at Federal and State Statutes; A Look at Some Major Age Discrimination Cases: What Others Have Done on Their Own Behalf; and Guidelines for Action.

"Discrimination in employment on the basis of age is a critical problem for middle-aged and older American workers.

"Recently, the Congress enacted amendments to the Age Discrimination in Employment Act of 1967 to strengthen and broaden the protections which Federal law affords to the employment rights of older persons. The Act as amended protects most workers age 40 to 70 from discrimination on account of age in hiring, job retention, compensation, or other terms and conditions of employment.

"The 1978 Amendments to the ADEA represent an important step toward the elimination of all age-based employment discrimination in our society. As we move closer to the achievement of that ultimate goal, the ADEA will ensure that an appropriate mechanism exists to vindicate individual rights.

"This guide was developed by the Institute of Electrical and Electronic Engineers to inform its membership about age discrimination in employment and the protections provided by Federal law. I enthusiastically command their initiative and am confident that this publication will prove helpful to individuals seeking to ascertain their rights." – Senator Harrison A. Williams, Jr., Chairman, Senate Committee on Human Resources.

"Creating an environment conductive to a lifetime career in engineering has long been a major concern of the Institute of Electronics Engineers. Throughout its history, the primary thrust of the Institute has been to keep its members abreast of the latest technological advancements and to renew the skills that would enable them to maintain a continued and successful career. However, in recent times it has become apparent to the Institute that this kind of effort may not be enough. Age discrimination has had a definite impact on a growing number of members. According to the 1977 IEEE U.S. Member Opinion Survey, almost 20% of the U.S. membership believed that age discrimination prevents them from advancing in their careers. Nearly 60% of the respondents to the same survey favored IEEE efforts supporting government initiatives to promote affirmative action for engineers over 40.

"Specifically, the growing misuse or failure to use, older trained technical manpower has been among the factors that led to an erosion of the once preeminent technical position of the United States in the world. Age discrimination is increasingly perceived as detrimental to the individual, to his employer and to the nation.

"It was apparently out of such concern that in September 1975, the IEEE Board of Directors was moved to adopt an official position on age discrimination. This position stated in part that:

'The IEEE calls upon industry, government, and education institutions to examine their practices to ensure the profession that such age biases do not exist in their endeavors. The IEEE, in turn, will make every attempt to prevent age bias from existing and encourages the adoption of programs by all employers of electrical and electronics engineers to ensure the efficient, proper, and humane utilization of experienced, middle-aged and older engineers.'

"In keeping with that position, this guide has been developed to inform our membership of their rights under the Age Discrimination in Employment Act of 1967. It is an important aspect of the IEEE's continuing effort to enable our members to maintain a long and successful career while making a vital contribution to the welfare of the nation.

"Finally, it is our hope that it will also contribute to improving the working environment of engineers and that it will encourage their continuing creativity." – Hans C. Cherney, Chairman, IEEE Task Force on Age Discrimination.

Engineers should be knowledgable in matters of Age Discrimination to reduce the possibility of being one of its victims. If you or your associates have any questions related to Age Discrimination, please call: USAB, Washington D.C., (202) 785-0017; or U.S. Dept. of Labor, N.Y., (212) 399-5453.

As your PAC chairman, I would like to see an active effort in preventing Age Discrimination in our Section. To do this we will need a volunteer to supervise this effort. Those interested, please call me, Richard Tax, at (201) 573-0837.

Professionalism
And The Engineer

"Apathy is everywhere, but who cares."
Frank E. Lord, Editor, Impact"

The following, by Fred Suffield, reflects the opinion of many from coast to coast. The lack of participation by engineers in their Section activities is not unique, but it is still vital to their profession.

From "Impact," the IEEE newsletter of Professional Activities:

After years of effort, we are still faced with unemployment problems in the engineering profession, as a large number of events all directly or indirectly affect each of us. A Federal Election, local elections, new National Officers for the IEEE – all of these and many other decision points are important to us.

We hear many of our members complain that the IEEE, while large in numbers, is ineffective in speaking with one voice, in influencing management or politicians.

There are probably over one million engineers in the U.S. with probably 100 major technical and professional societies in the country, and their members voice the same complaints.

These large, well educated groups of engineers suffer from both size and internal pressures, and in reality are active on only a small base, thus in general ineffective as a single point representative of the entire profession. Engineers as a profession are not viewed as one entity by either management or Congress.

We frequently hear from members of technical societies that we should emulate the strong central power of the medical profession (AMA) or the legal profession (ABA), or even that of labor unions. Let us face the facts. There are problems within the AMA and ABA organizations, and in reality most doctors and lawyers work for themselves, not for corporations. The power of unions is in their ability to shut down the productive shop. The engineer's contribution is more subtle. While the average engineer may be indirectly responsible for the direct labor of 5 to 15 shop and support personnel, his effect is long term – a strike by engineers is not a powerful tool, nor is it subscribed to by many of the engineers.

An area for engineers to re-examine is that of their education. In a four-year span of time, the engineer receives a B.S. and enters the industrial world. His professors have rarely had any industrial experiences, so, following graduation, the engineer enters a phase of on-the-job training (sink or swim). The tendency is to specialize, and further education is generally in a specialty field. Some engineers remain in school to obtain a Masters or a Doctorate, but again these narrow the specialty area, they are farther away from real life, and benefit the individual because personnel agents measure applicants more by degree and school than by inherent ability.

The movement of engineers into management is many times due to the visibility to management of an engineer's good technical work. The employer, by promoting a good technical man to a management position, many times loses a good technical man and does not gain a manager. This occurs year in and year out. The profession's image, and the man, both lose.

Employers and engineers rarely find the courses in educational institutions of real value to the continuing education of engineers, nor do they feed back the real need to the schools. It is the small local schools that should be of maximum aid to the employed engineers, not the few ultra-large institutions in remote cities.

Between 10 and 20 years after an engineer enters industry, he has moved to some level of management, with on-the-job, not formal training, for this step. With a lack of a solid foundation in management, finance, personnel handling, communication and other areas, now, when he has moved up the ladder, he finds that he competes in a business management world against specialists in this new world and the engineer's problems increase.

Some, but far too few, engineers speak loud and long in the need for support to their work tasks. How many engineers today spend a majority of their time "engineering"? Examine one week of your time, list such functions as waiting for secretarial help because someone decreed a reduction in overhead, tracking some data through the system because you do not have a young "eager beaver" to do the leg work, trying to find a reference that in an economy move is no longer in your library, attending meetings that are forums for frustrated lecturers, having to do routine lab work that could be done by technicians. How often do you assign priorities to the work facing you, in order to attack the important items first. Do you find that the deadlines assign priority, not the value of the task?

There have been many arguments for reducing the number of engineers. If one attempts this by control of entry into school, then one has to have visibility 4, 6, 8, 10 years into the future as to need. This visibility is lacking. One certainly cannot count on the Bureau of Labor Statistics – they rarely are correct, generally late, and neglect engineers. Perhaps a more productive approach would be to raise the standards, improve the education, and insert into the last year of a five-year BS course a series of units taught by people from industry – a Manager of Engineering, a Chief Engineer, a Project Engineer, a Marketing man, an Accounting-Finance man, a Manufacturing man, a top Executive, etc. The focus to be upon real problems, the facts of industrial life, what an organization is like, and how it really runs, not how the organization chart makers think it runs. Perhaps every engineer, 20 years out of school, should return to teach for one year. Teach real life.

While the young, entry level engineer may not have much difficulty obtaining a job – after all he is young, bright, and low in cost – still he could benefit from a course on how to apply for a job, how to write a resume, how to handle an interview. He may not need this for a few years, but sooner or later he will need aid in obtaining a job. Older engineers, as the past six years have shown, definitely need such a speciality course.

If one is to be a professional, one must act and think as a professional. Ask ten members of a technical society why they belong. You may be amazed at the distribution of responses. "To receive the Journal" – they can get this in their company library – "To obtain a low cost

How To Design A Process Control System

How to Design a Process Control System is the topic of the October 19, 1978, North Jersey IEEE Control Group meeting.

This talk will illustrate the basics of specification for a process control system. It begins assuming that a process baseline exists which is understood by the engineer, who also has some idea of how he wants to control the process. A complete specification contains a large amount of documentation that can be simplified by grouping it into key elements. Most important of all is the Functional Criteria portion containing details of the manufacturing process and flow diagrams, failure detection and recovery, man/machine, and input/output requirements. These documents will establish the nature of the control system. The techniques for writing the functional criteria will be presented.

Frequently, a simple programmable controller will be sufficient for a control system. However, there are situations when a more complicated control mechanism, like a minicomputer (miniprocessor) is essential. Criteria will also be presented to allow the engineer to judge which type of a control system should be utilized. For the most complicated type of process, like a petro/chemical manufacturing process, even a single microcomputer is not sufficient. In these cases, some form of computer hierarchy is required. The various choices and how to make the selection will also be covered in this talk.

The speaker, Dr. Leonard B. Gardner, is Chief of the Computer Instrumentation Branch of the US Army Armament Research and Development Command at Dover, N. J. His responsibilities include reviewing designs for control systems used on automated production lines for the manufacture of munitions. He is a graduate of Augustana College and the University of California and has been engaged in computerized instrumentation for 27 years. He is an active Senior Member of IEEE, and is also active in other professional societies.

Time: 8 PM, October 19, 1978.
Place: Bell Labs, Whippany.
For Further Information: Call 328-6416.

Earth Station Tour

The Microwave Theory & Techniques Society, North Jersey MTT Chapter, is sponsoring a tour of Glenwood Earth Station by Western Union staff on Thursday, October 26, 1978, at 7:30 PM.

The tour of the Glenwood Earth Station, owned and operated by Western Union as part of its WESTAR Program, will consist of the following: Viewgraph presentation introducing the Westar System; equipment tour; and question and answer period.

For reservations and additional information, please contact Eugene W. Niemiec, ITTDCD, 492 River Rd., Nutley, N. J. 07110; (201) 284-2758.

Time: 7:30 PM, Thursday, October 26, 1978.
Place: Glenwood Earth Station, Vernon Valley, N. J.

How To Start Your Own Business

Joint ASME-IEEE PES meeting on How To Start Your Own Business will be held on October 23, 1978, featuring the following speakers: Dr. Emanuel Orlick, Assistant District Director, Small Business Administration, and James Reilly, Director, Technology Innovation Div., Ruthers Small Bus. Devel. Center.

Think about being your own boss! If you like the idea, come and get some sound advice from two experts and at the same time make contact with the two organizations that offer the most assistance.

Dr. Orlick is responsible for workshops and courses and heads up a team of specialists whose prime purpose is to help small business persons to identify and solve their problems. He has five degrees, is widely published, and has been a management consultant, a university professor, and has held key business positions.

Mr. Reilly's Division of the SBDC assists small manufacturers in new product development and improvement and with productivity, technology, and regulations. He has been a manager of several small companies and has visited thousands of small manufacturing firms while working for the N.J. Bureau of Commerce and Industry.

Time: Monday, October 23, 1978.
Place: Hall of Science Auditorium 104, Drew University, 36 Madison Ave., Madison, N.J.
For information contact: Jack Mooney, Mtg. Chm. ASME, 609-737-3000; Gary Morsky, Mtg. Chm. ASME, 885-7166; Sy Salowe, Chm. IEEE-PES, 465-2938; Gerry Barton, V. Chm. IEEE-PES, 353-7000 X-545; John Baka, IEEE-PES, 455-8534; or Gene F. Updyke, Pgm. Chm., 688-1300.

Aid For The Engineer Entrepreneur

The microprocessor/microcomputer revolution has generated the means for entering the computer systems business on a low budget. Many engineers have purchased development systems to develop products on a part or full time basis. However, one of the reasons cited for small business failure is that the entrepreneur does not seek legal advice during the early states.

Legal problems may include:

1) Your equipment electrocutes the user.
2) The customer steals your design.
3) The customer returns your equipment because he thought it was supposed to work differently.

We have invited two attorneys, Ronald Goebel and Thomas Adams, to speak and answer questions concerning contracts between vendor and buyer, warranty protection, software and hardware design protection (copyrights, patents, trade secrets), and the pros and cons of incorporation.

Mr. Goebel has a Bachelor's and Master's degree in Organic Chemistry from Rutgers University and a J.D. (Doctor of Jurisprudence) from Seton Hall University's School of Law. He was a research chemist with the Lever Brothers Co. for about four years, and a patent agent and patent attorney for N. L. Industries, Inc. (formerly National Lead Company) for four years. Mr. Goebel was also employed as an associate in a patent law firm in New York City for three years. In 1977, Mr. Goebel formed a partnership with Mr. Adams in Morristown.

Mr. Adams, also a patent attorney, received a B.S.E.E. from Newark College of Engineering (N.J.I.T.) and a J.D. from Seton Hall. During 1969 - 1973, he was a design engineer for Grumman Aerospace and, later, for Weston Instruments. Thereafter, he was employed as an attorney and agent specializing in patent, trademark and intellectual property law for Otis Elevator and RCA. Prior to forming the partnership with Mr. Goebel, he was a private practitioner in Livingston. Mr. Adams is a member of the IEEE, Tau Beta Pi, Eta Kappa Nu, the Essex County Bar Association, and in 1973 he was a publishing member of the Seton Hall Law Review.

Time: 7:30 PM, Thursday, October 19, 1978.
Place: ITT Conference Center, 500 Washington Ave., Nutley, N.J.
Pre-Meeting Dinner: 5:30 PM, Sandlewood Restaurant & Lounge, 265 State Highway 3 (next to ITT, eastbound lane).
For Further Information: Frank Kruglinski, (201) 447-3663.

EMBS Meetings

The Metropolitan New York Chapter of the Engineering in Medicine and Biology Society meets at 7:30 PM the first Wednesday of each month from October through June at Rockefeller University, Bronk Lab, Rm. 216, 66th St. and York Ave., N.Y.C.

At the Oct. 4 meeting, Dr. Maryon Williams, Jr., of Biomedical Engineering Shared Technology, Princeton, N.J., will discuss "Shared Clinical Engineering Services."

At the Nov. 1 meeting, Howard Freeburg, of the Veterans Administration, will discuss "Sensory Aids for the Blind."

For more information, call Harry Rice, at (212) 554-7075 (Roosevelt Hospital).

Blackburn Honored

The Power System Relaying Committee presented the 1978 PSRC Distinguished Service Award to Mr. J.L. Blackburn. Lew, a member of the North Jersey IEEE, is well-known in IEEE-PES circles for his many years of service as Chairman of the Publications Department and is the present Secretary of PES. In addition, he is a fellow of IEEE and an internationally recognized expert in the field of protective relaying.

ELECTRO 79 Volunteer Help Needed

Volunteers from the North Jersey Section are needed to help in ELECTRO 79, which will be held at the New York Coliseum April 23-26. Our Section benefits financially from ELECTRO 79, so if you were planning to attend (you get free admission) your help would be greatly appreciated. Contact Anne Giedlinski at (201) 366-1100 for details.

Railway Electrification

Railway Electrification will be discussed by Al Engel of Gibbs and Hill, Inc., at the November 15, 1978 meeting of the NY IEEE Transportation Division, at GE.

Time: 6:30 PM, November 15, 1978.
Place: General Electric Co. Auditorium, 670 Lexington Ave. (Corner of 51st St.)

Fault Recorder Performance Parameters

The New York-Long Island Section of the Joint Power Engineering Society and Industry Applications Society Chapter is holding a meeting on Fault Recorder Performance Parameters on Tuesday, October 17, 1978, from 6 to 8 PM, at Stone and Webster. J.A. Bright, of Hathaway Instruments, Inc., will be the speaker.

Time: 6 PM, Tuesday, October 17, 1978.
Place: Stone and Webster Training Room, 1 Penn Plaza, 41st Floor, N.Y.C.

Sponsors: Al Martino, (212) 460-4998, and Jack O. Steiner, (212) 460-6239 (both from Con Edison).

In-Circuit Testing

On October 17, Carl Hermans, Reliability/Maintainability Engineer at Gull Airborne Instruments, will describe the features of the Zehntel Trouble Shooter 400 as it applies to in-circuit testing of printed circuit boards. In-circuit techniques, both analog and digital, determine proper assembly construction rather than operation.

The Zehntel Trouble Shooter 400 is a microprocessor-based automatic test system. Mr. Hermans will discuss normal testing operations, program debugging and program editing.

The meeting is sponsored by the NY-LI Chapter of the IEEE Reliability Group, and is open to IEEE members and non-members. For further information, contact Joseph Drvostep, 516-752-3530 at Grumman Aerospace.

Time: 7 PM, Tuesday, Oct. 17, 1978.
Place: Polytechnic Institute of N.Y., Rt. 110, Farmingdale, N.Y. (Meeting room posted in lobby.)

PAC NEWS

Wage-Busting HR-314 Is A Must

The following editorial was published in, IMPULSE, the IEEE Canaveral Section's August Newsletter. There is usually more than one viewpoint to all issues. This is a viewpoint of some of those from an area in the U.S. that has suffered from Wage-Busting. Members of the Canaveral Section have led the IEEE Task Force in the HR-314 effort.

"As the Service Contract Law reads now, everyone is protected against substandard wages except the engineers. The current Service Contract Act specifically excludes engineers from the protection of the Service Contract Act.

HR-314, which would extend the protection of the Service Contract Act to engineers, IS A MUST, – not only for the simple reason of equity and fair play – but also to keep intact the great team of engineers and technical professionals that has helped put a man on the moon and has made America first in space. In recent months dozens of service contract engineers have left their service contract jobs to accept employment in non-service contract areas – at salary increases of over 30%. This is a measure of how severely service contract wages of engineers are currently depressed.

"As it stands now, service contract engineers have not had a cost-of-living increase since 1970 – in spite of the fact that the cost of living has increased some 70% over this period. Plumbers, carpenters, electricians, and technicians have received automatic cost-of-living increases over this period, as have the Civil Service engineers. As a result, an engineer who in 1970 was paid about twice the salary of a grade A technician, now makes less than the technician.

"It is precisely for this reason that the OMB solution, proposed and touted as a substitute for HR-314, is no solution at all. The OMB solution would prevent a successor contractor from lowering the wages paid to engineers by the previous contractor. To illustrate the failure of this policy just consider the case of the typical Federal Electric Corporation Service Contractor engineer. The FEC engineer did not receive any cost-of-living increase over the entire period 1970 until 1977, when RCA took over the contract. That the engineer's salaries were maintained at the same level when the successor contractor took over was hailed as a big victory for the OMB solution. Yet these same engineers are now some 70% behind – they received absolutely no cost of living increase over the entire 1970-1977 period.

"The only real solution to the problem is to pass HR-314. This would set minimum levels for salaries that could be offered to Service Contract engineers, based on area wage surveys conducted by the U.S. Department of Labor – in the same manner as plumber's, carpenter's, electrician's, and technician's minimum salaries are now set. Why should the engineers deserve less? As it stands now, engineers are in many cases paid less than technicians.

"The fight for HR-314 is still alive – even if the IEEE Headquarters effort has slackened off. Keep up your guard and be prepared to pressure your Congressman to support HR-314 – with or without the IEEE national."

What are we paying you for?

In response to this question directed to the volunteer members of the USAB and PAC, Mr. Heller wrote:

"In a crude approximation, we are the facilities and the expertise of a bloodbank. The blood, however, must still be your very own." (Herbert H. Heller, USAB/Internal Communications Chairman, General Surveys.)