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The IEEE

Newsletter

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It is not necessary to inform the North Jersey Section when you change your mailing address. The NEWSLETTER and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

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CALENDAR OF EVENTS

December 4, 1985--"North Jersey Section Executive Committee"--7:30 PM, Jersey Central Power & Light Co., Madison Ave., Morristown, N.J. Howard Leach (201) 848-4467.

December 11--"Evolution of Intracorporeal And Extracorporeal Lithotripsy"--Metropolitan Chapter Engineering In Medicine And Biology Chapter; 7:30 PM, Room 305, Tower Building, Rockefeller University, York Ave. & 66th St., NYC. Nina Krause (212) 561-6534.

December 16--"The History Of Audio Recording Systems From Earliest Times To The Present"--NY/LI Chapter Consumer Electronics Society; 6-8 PM, Room 17A, 17th Fl., Gibbs & Hill, 11 Penn Plaza, 7th Ave. Between 31st & 32nd St., NYC. Frank Logan (212) 460-4295.

January 8, 1986--"North Jersey Section Executive Committee"--7:30 PM, Jersey Central Power & Light Co., Madison Ave., Morristown, N.J. Howard Leach (201) 848-4467.

January 29--"IBM PC Connect To Mainframes"--NJ Chapter Computer/Communications Societies, 8 PM, ITT Auditorium, 500 Washington Ave., Nutley, N.J. Howard Leach (201) 885-3530.

February 5--"North Jersey Section Executive Committee"--7:30 PM, Jersey Central Power & Light Co., Madison Ave., Morristown, N.J. Howard Leach (201) 848-4467.

February 6--"Tutorial — Control Data Networks For Power And Industrial Plants"--Power Engineering Society Winter Power Meeting, Penta Hotel, 7th Avenue, NYC. Details from Nancy Heitman (212) 705-7893.

March 4--"Programming In The Language BASIC"--Start of 8-Session Lecture Series; North Jersey Section, 6:45 to 9:15 PM, Jersey Central Power & Light Co., Madison Ave., Morristown, N.J. RESERVATIONS & FEE REQUIRED. J. A. Baka (201) 455-8534.

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RICHARD F TAX ST
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A12 ETN 8

EMBS Meeting To Cover Lithotrypsy

The Metropolitan Chapter of the Engineering in Medicine and Biology Society will hear Bob Quint of American ACMI discuss "Evolution Of Intracorporeal and Extracorporeal Lithotrypsy*" at its

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

IEEE NORTH JERSEY SECTION

The North Jersey Section Executive Committee meet the first Wednesday (except holidays) of each month. These meetings (held at Jersey Central Power & Light, Madison Ave., Morristown) are open to all members. Information on each meeting agenda is available from Howard Leach, Section Secretary at (201) 848-4467.

Elected Section Officers are listed on page 1. *****

- Chapter Chairmen:
- Acoustics, Speech & Signal Processing: GREG MACKINTOSH (201) 386-4560
 - Antennas & Propagation/Microwave Theory & Techniques: RICHARD SNYDER (201) 492-1207
 - Computer/Communications: BARRY S. GOURARY (201) 783-5570
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 - Systems, Man & Cybernetics: BEHNAM ASHJARI (201) 981-3528
 - Student Representative: THOMAS DE NIGRIS (201) 485-8358 (H)

If you would like to participate on a chapter administrative committee or have program suggestions, please contact the appropriate chapter chairman.

December 11th, 1985 meeting. (*Lithotrypsy deals with the breakdown of calculi deposits.)

Bob Quint is a graduate of MIT and has a degree in Electrical Engineering. He has been in "Who's Who In The East" since 1958. He has been involved with fibro-optic instrumentation and exploration of new techniques for applications in the medical field.

There will be an optional prelecture dinner at 6:30 PM in the Tower cafeteria. Elections Slated

Elections will be held at this meeting. To make nominations contact: Nina Krause at (212) 561-6534 or Mark Restivo at (718) 836-6600, ext. 318 or 160.

Time: 7:30 PM, Wednesday, December 11, 1985.

Place: Room 305, Tower Building, Rockefeller University, York Ave. at 66th St., NYC.

Informal Pre-Meeting Dinner: 6:30 PM, Tower Cafeteria.

Additional Information: Nina Krause (212) 561-6534, Mark Restivo (718) 836-6600, ext. 318 or 160.

IBM PC Connect To Mainframes

"IBM PC Connect To Mainframes" is the title of the January 29, 1986 meeting to be held by the North Jersey Chapter of the Computer/Communications Societies. The speaker will be Art Delaney of IBM.

About The Talk

The speaker will first cover the PC hardware connection via Asynchronous, Bi-synchronous, and Synchronous Data Link Control protocols. He will then describe the PC indirect connections to mainframes through local area networks and mini-computers. The last section of the presentation will cover software applications available for terminal emulation, file transfer, electronic mail, and virtual device support.

About The Speaker

Mr. Delaney, currently a Senior Industry Specialist in the finance and insurance industries, has been focusing on end user computing. He has 22 years of experience in the data processing field as a programmer, programmer analyst, systems engineer, and instructor. Art Delaney holds a

BS degree in Economics from St. Peters College, N.J. He also is a graduate of the IBM Systems Research Institute in NYC. Art Delaney is currently located in the IBM Finance and Insurance branch office located in West Orange.

ALL WELCOME

IEEE membership is not required to attend. All are welcome and refreshments will be served.

Time: 8 PM, Wednesday, January 29, 1986.

Place: ITT Auditorium, 500 Washington Avenue, Nutley, N.J.

Directions And/Or Dinner Reservations: Howard Leach (201) 885-3530 or Fran Stork (201) 884-6042.

History Of Audio Recording Systems

The combined Long Island Section and New York Section chapters of the Consumer Electronics Society will hold a technical meeting on Monday, December 16, 1985, from 6 to 8 PM, at Gibbs & Hill, Inc., Room 17A on the 17th Floor of 11 Penn Plaza, 7th Avenue between 31st St. and 32nd St., Manhattan.

The topic of discussion will be "The History Of Audio Recording Systems From Earliest Times To The Present," presented by Mr. S. Perry Jenkins.

An IEEE member of long standing, Mr. Jenkins is remarkably well qualified to offer an interesting and informative lecture on this subject. He has, at various stages of his career, filled the position of: radio station broadcast engineer, television station construction and operations engineer, television station equipment sales engineer, and financial management consultant.

A general discussion period will follow Mr. Jenkins' presentation.

ALL WELCOME

We urge all interested, members and non-members, of the Long Island and New York Sections to attend this informative technical meeting.

Suggestions for technical meeting topics are most welcome. Please send topic suggestions to: Frank Logan, Con Edison, 4 Irving Place, Room 1549-S, New York, N.Y. 10003; or phone him at (212) 460-4295.

IT'S TIME FOR A CHANGE Irwin Feerst For President-Elect

Since its inception, IEEE has enthusiastically pursued its constitutionally-mandated technical and educational functions. In 1973, during a period of mass engineering layoffs, we succeeded in having IEEE's constitution revised (by a 7 to 1 vote of the membership) to permit IEEE to engage in professional activities. (Article I, Sec. 2 now lists, as one of the purposes of IEEE, "(b) professional, directed towards the advancement of the standing of the members of the professions it serves ...").

We are now in another downturn in engineering employment that is at least as severe as the one in the '70s. A close examination reveals that our career instability is caused, in part, by the fact that IEEE has not pursued its constitutionally-mandated function of advancing our standing.

Why, for example, did not IEEE de-bunk the "survey" conducted by the American Electronics Association, an organization of employers of engineers, that projected a huge shortage of engineers? (AEA's survey was obviously flawed in that it did not eliminate the redundant projections of the employers, who compete against each other, especially in the military area.) We protested; IEEE did nothing. Why did not IEEE scream about the "study" conducted by Northeastern University that claimed that we are obsolete by the age of 37? We protested; IEEE did nothing. Why does not IEEE oppose joint university-industry research and development? This removes R&D work from the industrial workplace and gives it to the universities. We protested; IEEE has done nothing. What is common to these three examples is that the ideas they represent benefit the college professors and the corporate executives, at the expense of the working engineer.


The Institute (October, 1985, p. 6) tells of the meetings the 1986 president of IEEE has had with "major IEEE employers". He says, "You don't bite the hand that feeds you." Yet, not a single "E" in "IEEE" means "employers". It is improper for any IEEE official to seek confrontations with industry. But, if they occur in the course of advancing the professional standing of IEEE's members, then it is also improper to walk away from them.

My credentials: Electronics Technicians Mate 3/c, U.S. Navy (during and after World War II); BEE (City College of New York, 1951); MEE (New York University, 1955); MSEE (Polytechnic Institute of New York, 1974); employed by various profit-minded companies (1949-1962); Assistant Professor of Physics and Electronics (Adelphi University, 1962-1969); independent, licensed consulting engineer (1969-present).

I have addressed professionally-related issues since 1973, when the first of our monthly newsletters was published. I have spoken to 108 IEEE sections/groups/chapters. I have testified before four committees of the U.S. Congress on matters of interest to working engineers. I am a working engineer and I am running for President-Elect of IEEE. If you think it's time to have IEEE represent YOU, please sign the nominating petition.

We, the undersigned voting members of the Institute of Electrical and Electronics Engineers, Inc. (IEEE) nominate Irwin Feerst, a Senior Member (mailing address: P. O. Box 19, Massapequa Park, NY 11762) for the office of President-Elect of IEEE for the period from 1/1/87 until 12/31/87.

NAME (PRINT)	NAME (SIGN)	Member Number (if known)	Date

If elected, I shall serve. 

Petitions should be returned by March 15, 1986 to:
COMMITTEE OF CONCERNED E.E.s
P. O. Box 19
Massapequa Park, NY 11762

(If you send in three or more signatures- one of them can be yours- you can receive a few FREE issues of our monthly newsletter. If you wish to do so, please check here ☐ and be sure to include your address.)

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North Jersey Section IEEE
Presents
Spring Lecture Series
PROGRAMMING IN THE LANGUAGE BASIC

The North Jersey Section is offering a spring evening course titled "Programming In The Language BASIC."

The course is designed for professional personnel and will deal with BASIC primarily as it is implemented in the Microsoft version; by far the most popular and the "de-facto" standard in the micro-computer industry. Other versions will be considered, however, and some attention will be given to many of their differences and their impact on the user.

The language will be covered through various applications in real, practical examples. Numerous techniques will be discussed; many of which do not appear in textbooks. Implementation of the language on several different computer systems will be considered, with open discussion on advantages and/or disadvantages.

Students will be given assignments to do on their own computer, if one is available; either at home or on the job. Assignments will be designed to emphasize the techniques covered in the lectures. Upon completion of the course, the student will be able to write practical, useful programs and will have an in-depth awareness of the language, on which to build highly sophisticated skills.

The instructor is Mr. Roy S. Reichert, District Manager, Technical Education and Training Division of Bell Communications Research.

- (1) **March 4, 1986--What is BASIC?**--Origin of the language: Dialects; Interpreter vs. Compiler versions: Constants, variables, keywords, syntax: ASC11 coding: Direct mode vs. Program control mode.
- (2) **March 11--1/0 And Control Methods**--Input/Output techniques: Program control; branching; making decisions: Built-in data; Data types: The type-ahead buffer.
- (3) **March 18--Executable Structures**--Loops; switches: Dimensioned arrays: Subroutines: Properties of the stack register.
- (4) **March 25--Functions**--Library Functions: User-defined functions.
- (5) **April 1--Character Strings**--String definition: Built-in String functions: Data Strings: String manipulation.
- (6) **April 8--File Structure and Usage**--Sequential files: Random-access files: Disk formats; structures.
- (7) **April 15--Program Testing and Debugging**--Diagnostics: Error handling techniques: Error simulation; Positive use of error conditions.
- (8) **April 22--Computer Graphics**--Resolution considerations: Graphics commands; functions: Graphics peripherals; Color techniques.

Homework assignments will be given and it is expected that you will have access to a computer or time sharing system that runs BASIC.

Where: Jersey Central Power & Light Company, Madison Avenue (Rt. 24) at Punch Bowl Road, Morristown, N.J.

When: Eight Sessions, Tuesday nights, starting March 4, 1986 from 6:45 PM to 9:15 PM, Snow dates have also been arranged.

Cost: IEEE Members \$40; non-IEEE Members \$100; Text book supplied and considers syntax for IBM, Apple, TRS-80 and Commodore.

Additional Information: Mr. J.A. Baka at (201) 455-8534 (Business).

REGISTRATION — "PROGRAMMING IN THE LANGUAGE BASIC"

To: Mr. John Baka, Distribution Engineering, Jersey Central Power & Light Company, Madison Avenue at Punch Bowl Road, Morristown, N.J. 07960

Name _____ IEEE No. _____

Affiliation _____ Phone No. _____

Address _____

Please enclose required fee made payable to "North Jersey Section IEEE"

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PEER — An IEEE Member Service

The Professional Engineering Employment Registry (PEER) is a resume data bank designed and controlled by the IEEE in cooperation with other professional engineering and scientific societies. Through it, you—members of participating societies—may find improved employment, under conditions that are professional, ethical, and confidential.

This service is intended to help members who are unemployed or facing unemployment, as well as those who find they must change jobs in order to progress in their careers. It is intended for serious job seekers, not for casual speculation, and has some features that are relatively unique.

JOB'S COME LOOKING FOR YOU

PEER maintains a computerized database of resumes from a cross section of professionals who are interested in investigating career advancement opportunities—discreetly and with complete confidentiality. Employers search the database by specifying their requirements for a particular job. PEER's computer system automatically selects the individuals who have the appropriate skills, experience, education, salary requirements, geographic preferences, etc. for the job opening.

NO COST TO YOU—ABSOLUTELY FREE

PEER does not charge members of participating societies for this service. Subscribing employers pay all costs.

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Your resume is entered into a central PEER database. To ensure your complete privacy, your name and address are kept in a separate database which can not be accessed by any employer.

YOU MAKE YOUR OWN DECISIONS

Employers use PEER to send specific job opportunity messages (we call them "Contact Requests") directly to you whenever they have an opening which matches your skills and meets your salary requirements. PEER's computer mails these "Contact Requests" to your home address. If you are interested, you respond directly to the company to arrange an interview. If you are not interested in a particular job, PEER will inform the company of your decision to "pass," and your identity remains concealed.

REVIEW PRIORITY JOBS ON-LINE

If you have a personal computer (or terminal) and a modem, you can review many of the priority jobs on-line. Call our On-Line Career Network at (617) 275-4112 any time. Simply press your RETURN key and enter the password "PEER" to log on.

QUESTIONS YOU MIGHT HAVE ABOUT PEER

- Q** Why do employers participate in PEER?
A Employers subscribe to PEER because it provides convenient and efficient access to potential job applicants. Employers do not incur any placement fees. Employers simply pay a flat-rate subscription fee.
- Q** Does IEEE make a profit from PEER operations?
A No, PEER is a creation of the IEEE, a non-profit organization which provides this service solely as a member service. The IEEE and other supporting societies may recover some of the expense of advertising and maintaining the system from user fees.
- Q** How often will I be considered for job openings?
A Employers examine the PEER database every day looking for candidates to fill their job openings. Additionally, PEER automatically brings your resume to the attention of a subscribing employer whenever a new job opening occurs in your area of expertise.
- Q** Will PEER personnel pressure me to go on interviews or to accept job offers?
A No. PEER is an unbiased service organization. PEER will not attempt to influence you in any way.
- Q** Will my current employer recognize my resume even though my name has been removed?
A No. Your resume will be specially coded so that your current employer can never see any portion of your resume.
- Q** Will my identity be disclosed to anyone for any reason at all?
A Absolutely not. PEER will not, under any circumstances, disclose your identity to any person or organization.
- Q** Do all PEER resumes look alike?
A No. You always maintain your own individuality. Although all PEER resumes are entered via word processing and stored on-line, there are no specific rules regarding the format of your resume. PEER enters your resume as submitted removing only your name, address and telephone number. If you like, we will also remove the name of your current employer.
- Q** Is there ever any cost to me for PEER services?
A No. There is no cost to you whether or not you accept a job with a PEER subscriber.
- Q** Am I ever obligated in any way?
A No. You can remain on PEER's database for as long as you like. You can also ask to be removed at any time.
- Q** Can I update my resume if my employment situation changes?
A Yes. Just send us a revised copy of your resume.
- Q** Why should I participate in PEER?
A PEER offers you, the professional, a no-risk method of optimizing your career moves.

A WORD ABOUT JOBNET

The members of the participating societies have spent considerable time and effort evaluating various commercial firms which had offered to operate and market PEER services. We have chosen JobNet Inc., headquartered in Massachusetts, as the most capable firm and have signed a contract with this company to operate PEER. They have extensive experience with corporations seeking engineers, will operate within our strict guidelines concerning anonymity, and they are national in scope

Call your IEEE-USAB Washington D.C. office at (202) 785-0017 and ask for the booklet on PEER. Tell them you read about it in the North Jersey NEWSLETTER. You may also get this information at your Executive Committee Meetings.

PEER FEATURES
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PROFESSIONAL—PEER is a no nonsense approach to career advancement for the professional individual.

CONVENIENT—Just mail your resume along with the attached registration form to PEER. Nothing else is required.

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RISK-FREE—There is no cost and no obligation. You have nothing to lose.

Obsolescence Paper Opposed

The following resolution was adopted on September 21, 1985 by USAB's Manpower Committee.

It is the opinion of the Manpower Committee that the "Critique of the ALLPNES Report" (Assessment of Lifelong Learning Programs Needs for Engineers and Scientists in Massachusetts High Technology Companies) by the North Jersey Section of the IEEE is a fair, accurate and comprehensive paper.

The "Critique of the ALLPNES Report" verifies that the study by Northeastern University and sponsored by the Massachusetts High Technology Council is of little if any value. The data provided in the ALLPNES Report does not support the allegations of obsolescence as a function of age or that obsolescence exists at all.

The Manpower Committee endorses the "Critique of the ALLPNES Report."

Further, we agree that the following recommendations from the Critique, concerning engineering manpower reports, papers and press releases be promulgated:

- (1) give this issue urgent consideration and maximum visibility;
- (b) make IEEE members and members of the engineering community aware of this issue;
- (c) review, challenge, and refute all sources and studies of a similar nature;
- (d) monitor legislation supported by the ALLPNES-MHTC Report and similar reports;
- (e) oppose, challenge, and refute legislation supported by reports of this nature;
- (f) monitor future activities of groups, societies and organizations participating in the generation of reports of this nature.

In making the endorsement, the Manpower Committee does not in any way address the motives of the authors of the ALLPNES Report. Rather, the Committee strongly supports the facts and conclusions presented in the North Jersey section critique.

Technical Recruitment Declining

Technical Demand Still Declining

The High Technology Recruitment Index (HTRI) continued downward in July to 105, a two-year low. The drop occurred in spite of preliminary indications that an end to the current year-long decline might be imminent.

Further losses may be in store. The single-month figure for August, 100 (the base-year norm), reflects a 10-point decrease from the prior month. It is difficult to project when, and from what level, an upturn will begin.

"The country is in a heavy defense expenditure mode," observes a DS&E research analyst, "which characteristically is accompanied by a high level of technical hiring. However, the present administration's emphasis on military spending has twice--in 1982-83 and currently--been unable to offset the losses in technical demand

in unrelated industries. When technical hiring accelerates in the nonmilitary sector, HTRI will start on an upward trend."

The HTRI is based on the volume of recruitment advertising directed to degreed engineers and scientists in key U.S. newspapers and technical journals each month. Deutsch, Shea and Evans, which has maintained the Index since 1960, is the human resources consulting and advertising subsidiary of Foote, Cone & Belding Communications, Inc.

HIGH TECHNOLOGY RECRUITMENT INDEX (1961=100; Seasonally Adjusted)		
Month	Single-Month Figure	High Technology Recruitment Index*
August, 1984	129	133
September	131	130
October	131	128
November	121	123
December	120	125
January, 1985	135	126
February	123	127
March	122	122
April	121	118
May	109	112
June	105	108
July	110	105
August	100	--

*Based on a 3-month running average.

Doyle Testifies On Alien Engineers

This legislative report is prepared for the information of IEEE officers and selected staff and should not be construed as representing the position of the IEEE or any entity. It is written to provide the recipients insight into current Congressional activities of interest to the IEEE

Recently, IEEE got a chance to present its views on the way in which foreign students are educated and employed in the U.S., especially the employment patterns they utilize in accepting jobs at universities. The forum was a hearing on trade policy held by a House Government Operations subcommittee on October 3. Rep. Barney Frank (D., MA), the subcommittee chairman, represents an industrial and working class district and has close ties with engineers and other professionals, some of whom have been displaced or affected by cutbacks in the electronics industry. IEEE's views were solicited because of these links with Rep. Frank.

The impact of the Administration's trade policy on American workers was the subject of the hearing. Rep. Frank has charged the Administration with abandoning efforts to retrain workers displaced by national trade policies. Officials from the Labor Department and the Office of the U.S. Trade Representative, along with economists and others from the private sector, were asked to testify.

IEEE's views were presented by Jack Doyle, Chairman of the Manpower Committee. Doyle gave the panel IEEE's views on the

pattern that alien students take after they come to the U.S. as engineering students and "rather than return to their home countries, stay in the U.S. employed as engineers." They get jobs and stay on, Doyle explained, by using a proviso in the immigration laws that "classifies them--improperly in many cases--as having exceptional abilities which U.S. citizens do not have." He charged that often "the aliens will work for wages less than a citizen would demand."

According the the IEEE view, the problem is not critical at the bachelor's level but assumes great importance at the doctorate level, for the following reasons: By that time, the proportion of graduates who are aliens increases to over half. In 1983 the percentage of foreign nationals receiving doctors degrees in engineering was 56% of the total, with 42% still on temporary visas and the remainder having already obtained permanent visas before graduation. These people generally go into either Research and Development, or into the Engineering schools, where they usually do both teaching and research. As a result, the faculties of engineering schools are increasingly made up of aliens. This trend is already leading to problems in the instructional area because of language difficulties and cultural differences.

Reason engineering schools are the locus of the problems is that academic pay has fallen behind industry pay for people with comparable education. IEEE's 1983 salary survey shows that the lowest average salary for industry PhDs is \$50,000. The low doctorate salaries "fail to attract U.S. citizens but are acceptable to many aliens because it is their route to becoming a citizen quickly. From all we know, these aliens are qualified from a technical standpoint but do have language and cultural differences which can cause problems. But it is a misinterpretation of...current immigration law to say they have exceptional ability in the sciences and arts. They are able to get these jobs because the salaries are not high enough to attract U.S. citizens."

Doyle said government could help by doing two things: increasing the number of government-sponsored fellowships for U.S. citizens to pursue graduate studies in science and engineering and "stiffening" the interpretation of the immigration law so that it affects only those with "exceptional ability in the sciences and the arts."

Doyle noted that in recent amendments to immigration reform laws (Simpson-Mazzoli in 1984 and Rodino in 1985), "wholesale exemptions of all engineering graduates were and are proposed." He said "such wholesale exemptions are counterproductive and will only serve to make the situation worse."

Doyl's explanation of the impact "cultural" differences have on pedagogy was of great interest to Rep. Frank, who pressed for some examples of difficulties with foreign instructors. Doyle reported that in many cases students are simply not able to understand their foreign instructors and sometimes have trouble "relating" to their methods. There have been cases in which engineering students were able to get tuition refunds, he said, because they could not comprehend the lectures. People from different cultures teach differently, he added. Some do not believe in taking questions from students. The prepared lecture is what they deliver and nothing else. "Our students are not used to that," Doyle concluded.

LEGISLATIVE REPORT, IEEE WASHINGTON D.C. OFFICE
BY Edith Carper
October 25, 1985 (Part of Vol. III., No. 9)