



The IEEE

# Newsletter

## Digital Computer Monitoring

At the North Jersey Control Systems Society meeting of January 7, 1975, "Digital Computer Monitoring and Control of Power Systems" will be presented by Dr. Sudhir Virmani of American Electric Power Service Corporation.

The complexity of modern interconnected power systems has necessitated the use of more advanced techniques for the real-time control and monitoring of such systems. These techniques require larger quantities of data; more effective man-machine interaction; the use of sophisticated mathematical techniques; and high computing capability. Digital computers are therefore playing an increasingly important role in power system operation.

The objective of this presentation will be to discuss current trends in the application of digital computers for the real-time monitoring and control of interconnected power systems. The major topics of discussion will be:

- (1) Introductory overview of power system control;
- (2) Data requirements;
- (3) System control techniques;
- (4) Evaluation of interchange transactions;
- (5) Assessment of system security;
- (6) Hardware and software requirements; and
- (7) Man-machine interaction.

Sudhir Virmani received the Ph.D. degree in Electrical Engineering from the University of Wisconsin, Madison, in 1967. He joined American Electric Power Service Corporation in the Engineering Computer Application Division and is now with the Technical and Special Studies Section of the System Planning Division. From 1970 to 1974 he was with Stagg Systems Inc., where he was engaged in the design and implementation of a digital computer control center for a power system. He is currently working on switching surge performance of EHV Systems and on power system dynamics.

**Time:** 8:00 P.M., Tuesday, January 7, 1975.

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

**Pre-Meeting Dinner:** 6:00 P.M., Copperhood Restaurant, Park Ave., (Just off Rt. 3), Lyndhurst, N.J.

## 1974 MANPOWER REPORT ON YOUR CAREER IN E/E ENGINEERING

The Manpower Planning Committee of the IEEE has published its 1974 Report, "Your Career in E/E Engineering (Regions 1 through 6, USA)." The report views manpower requirements in terms of the changing outlook of the engineering profession. In order to take advantage of the estimated average of 73,500 openings in the engineering profession each year, the report recommends structured career planning.



Wally Hopkins, Panel Moderator for the Seventh Annual Student Night Program Sponsored by the Power Chapter and held at NCE Introducing Panel Members. Serving on the Panel are (left to right): Bart Mandaglio of Westinghouse Electric Corporation; Tom Brauchle of Public Service Electric & Gas Company; and Jim Oberst of Jersey Central Power & Light Company.

## IEEE Power Group Meeting 10/24/74

By: K.J. Oexle

Over 50 students attended the 7th Annual Student Night Program held by the Power Chapter on October 24th at Newark College of Engineering. A panel of three young engineering graduates, moderated by Wally Hopkins of Westinghouse Electric Corporation, highlighted their engineering assignments. The panel consisted of Jim Oberst of Jersey Central Power & Light Company; Tom Brauchle of Public Service Electric & Gas Company, and Bart Mandaglio of Westinghouse Electric Corporation. The panel discussed their roles in transmission design, underground distribution engineering and product marketing, respectively. The meeting was preceeded by dinner at the Student Center and closed with a lively question and answer period.

Planning becomes even more important for the middle-aged engineer, according to one article of the book entitled "Age 45 and Beyond—the Engineer and His Personal Employment Problems." The best cure for unemployment at middle age, the article says, is prevention by good career management. For those engineers already out of work, several remedies are suggested for returning to work.

The 1974 Manpower Report is the second of an annual series that provides employment and career information about the electrical/electronics engineering field for the engineering community in general and to individuals concerned with technical manpower aspects of our nation. The 280-page report is available at the cost of \$10 for IEEE members and \$12.50 for non-members.

## First Non-Technical Section Meeting

The year's first non-technical meeting organized by Vice-Chairman Bob McMillan, was a big success — for the 30 members who attended it. It is unfortunate that more of our members couldn't share in the ideas of involvement, presented by Chairman Max Schindler; the discussion of Engineering Manpower Forecasting models, by Hans Churney, Chairman of USAC Manpower Planning; Harlon Perlis' award for last year's role as Chairman; Norm Hettinger's Socio-Economic discussion; Norm Bleshman's Membership report; and, the highlight of the evening, a discourse on the Ethics and Employment Practices Committee by Joel Synder, Chairman USAC Employment Practices.

Max Schindler started off with an example of how easy it is to become Chairman of the North Jersey Section. It all boils down to if you're interested in being active, the North Jersey Section allows you to be very flexible, and, if you're interested enough, you could move up very fast.

Max mentioned how important to the Section it was to improve the Newsletter. In the past it was too dull, there was nothing in it but meeting notices, so, we changed it. He would like to see some Letters To The Editor and the Feedback Card is a good means of communication. The problem remains that North Jersey is too large an area to be covered by a few reporters so he will try to get some contacts established to publicize the section's activities.

"Engineers are living in a cocoon," says Max. The young engineers have indicated more of an interest in being active than the more established engineers. This is a good sign for future section functions. We would hope that others will take it upon themselves to participate in Section business and communicate through the Newsletter for better or for worse.

Do you realize that if, as a Microwaves Engineer, you are laid off and then register at an Employment Office you will have to be recognized as an Electrical Engineer not a specialist in one area since your specialty isn't listed in the Dictionary of Occupational Titles? This is according to Hans Churney, Chairman of USAC Manpower Planning, whose committee is presently working on revising that publication. His committee is also

concerned with forecasting changes in manpower in engineering. The group of 14, whose members are located in different parts of the country, is trying to establish how many engineers there are, what kind are they, and what are their specialties. For a better idea of what Hans' committee accomplished send for your copy of the "IEEE Manpower Report 1974: YOUR JOB IN E/E ENGINEERING." You should have received some literature on it last month.

Next, Harlan Perlis strolled up to the stage and received his much deserved award and recognition as past-chairman. He immediately congratulated Max on his quick start in getting the IEEE moving. He asked the under 30's EE's to investigate and take advantage of the opportunities offered them.

The tax reform bill, reported Norm Hettinger, speaking on the Socio-Economic Committee activities, would seriously affect IEEE members. Before the bill, IEEE dues and fees if not paid for by the employer, would be tax exempt. The new bill rules that only an amount exceeding \$200 for a total of professional societies dues and fees would be tax exempt. How many of us pay even \$100 annually in this area?

Norm Bleshman, speaking for Don Baitke, Membership Chairman, kept his report short. Don is looking for representation. He wants to keep in contact with the members. If your company has 10 or more IEEE members employed, try to get together and appoint a representative. This will not take much of your time. You might expect to spend maybe one hour every two months in this capacity. Not bad, and you'd be doing the IEEE a big favor.

The discussion on Ethics and Employment Practices by Joel Synder proved to be very fruitful. It's unfortunate all could not have been put down on paper. Joel is presently working on setting up standards of treatment of employers by employees, and vice versa. Employment guidelines are being set. These will work both ways. Just as you would give your boss sufficient notice of your leaving your position to follow another rainbow, you would expect him to return the favor by giving you notice if you were to be fired.

Discussion followed on various issues such as: Code of Ethics for Engineers and Employers, Safety, the drawing up of contracts concerning patentable material, etc.

The meeting ended at 10 P.M., but everyone stayed on to 11 P.M. discussing the above issues. Hopefully, they and many others will keep in contact and remain active in the IEEE.





## EDITORIAL

### Non Technical Meeting:

Congratulations are in order for Vice-Chairman McMillan's work on this year's first Non-Technical Meeting. Knowing Bob as I do I can appreciate how much of an effort he made to produce a successful meeting. He succeeded in his efforts, the members failed. Out of 5,000 North Jersey Section members, 30 showed up for a meeting which turned out to be the highlight of this year's activities.

The few persons I spoke to at the meeting happened to be young engineers interested in what the IEEE is all about. Three cheers for them! Maybe all is not lost and we can hope for better responses in the future.

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### Feedback Cards:

The Editor of this publication apologizes for neglecting to print the results of feedback card returns. It seems that the Newsletter is last on the list of material transfer. It is hoped that we will be able to keep the communication gap closed in the future.

From the information we have received, most of you (there were 130 responses) like the new format better. You would prefer meetings to be on the second Wednesday of the month around 7 to 8 P.M. and in the Morristown area. So, all you Committee Chairmen take heed. The members have spoken, plan your meetings accordingly.

Oh yes, some names for the Newsletter which are being considered are: The IEEE Communicator, The Antenna, Intercom, The IEEE Integrator, and probably the most appropriate . . . Intercourse.

Suggestions to get the members interested in attending section meetings included: increase the length of the day and reduce my work load.

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### Deadline:

Some of the readers may be confused as to where to send material for publication in the Newsletter and when. The Editorial Staff would appreciate it if you send articles, notices, memos, pictures, etc. to Ray Vaccari, IEEE Newsletter Editor, 236 Summit Road, Mountainside, N.J. 07092. The deadline for the monthly Newsletter is the 1st of the month before the month of publication. So, for the February issue you must have copy in to the Editor by the 1st of January. Material must be typewritten and pictures are happily accepted.

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### Letters To The Editor:

The Editor will investigate complaints, initiate ideas and indulge in whatever the readers reasonably suggest.

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### Seasons Greetings:

....to all members of the North Jersey Section of the IEEE and to their families and friends, from the Editorial Staff of the IEEE Newsletter.

## Metro NY Job Opportunities

**Power & Progress EE's:** Chf Inst E\$25-38K; Chf Transm/Distr Design \$32-45K; VP Power Mktg \$50-60K; Substa Design \$25-35K; Dir to Devel/ manage worldwide application of Aluminum \$25-35K; E Coast Mktg Mgr Pow Supplier \$35-40K; Pow/ Ass't \$17-21K; Plant EE (3) \$23-30 K; Conductor PhD/MS \$20-27K.

**Electronics EE's:** Chf SS device design \$35-50K; Dir Oper electro-mech commrc app'tus \$35-40K; SS commrc applctns design \$18-24K; X-ray pwr supplies, Ckt brkrs design \$20-25K; Analyt Instr Mktg Mgr \$25-35K; SS instr design \$18-24K.

**Infoprocessing EE's:** Corp Dir I/P Fortune 100 \$37-45K; Corp Mgr Teleprocess \$30-35K; Concep processor sys/Sofwr EE/Math \$18-27K; T/P sys E w minicomp, logic, peripheral, front end dev \$20-29K; T/P Sofwr dev \$18-24K; 4 multiprocess E's \$17-25K.

Most positions with Fortune ranked companies, NCA and NECA Member firms. Women/minorities encouraged. As PE's and Employment/Search Consultants to IEEE HQ, we specialize in representing engineers to worldwide employers. Our 10% fee is paid by employers. Most important, **individuals/ employers are never identified without specific approval** and all positions may be explored by calling **Paul Ward [201] 891-5324** before mailing resume **with earnings** to Andrew Associates, Box 311-N.J., Franklin Lakes., N.J. 07417.

## Tell IEEE HQ What They Can Do With Your Money

Look at your dues statement. You can tell the Institute what they can do with your money by checking the proper box to allocate the regional portion of your dues to: (1) Professional Activities; or (2) Technical Activities. If you check the third box, or no box at all, it indicates that you either don't care, or you are leaving it to the discretion of the board of directors.

## Engineer Demand Increases

A hefty national demand for engineers triggered an upsurge in college recruiting activity in 1973-1974 according to the College Placement Council. The total number of job offers rose 25% for new bachelor's, 12% for master's and 34% at the doctoral level. There was evidence of keen competition for engineers with a 31% increase in the

number of offers to bachelor's engineering candidates. Altogether, engineering offers accounted for 56% of the total bachelor's volume. For bachelor's candidates, the prime source of employment reported in the survey was manufacturing and industry. Because of the emphasis on engineering candidates and the scarcity of women in this discipline, male graduates collected 80% of all offers reported for bachelor's graduates.

## MSC Employment Workshop

The Metropolitan Students Council (MSC) is sponsoring an employment workshop to help students obtain jobs. The workshop will be held Thursday evenings Jan. 23 and Jan. 30, 1975 at Stevens Institute of Technology.

No charge for IEEE student members nor members of other professional, scientific and engineering societies. There is a charge of \$5.00 for all others.

Applications and further information are available from the student branch counsellors.

## EXECUTIVE TERMINOLOGY

**Coordinator**—The guy who has a desk between two expeditors.

**Consultant [or expert]**—Any ordinary guy more than 50 miles from home.

**To activate**—To make carbons and add more names to the memo.

**To implement a program**—Hire more people and expand the office.

**Under consideration**—Never heard of it.

**Under active consideration**—We're looking in the files for it.

**A meeting**—A mass mulling by masterminds.

**A conference**—A place where conversation is substituted for the dreariness of labor and the loneliness of thought.

## Call for AES Revitalization

The Aerospace and Electronic Systems (AES) group of New York and North Jersey is in the process of reorganizing. If you wish to become involved in IEEE group activities and determine the types of talks and activities you wish the AES group to participate in call Bernard De Marinis at (201) 284-2074.

## WORTH REPEATING

Expect the unexpected and so far as possible be prepared for it.

William Feather

The value of a quarrel is yet to be ascertained.

Rush C. Hawkins

Volume 21 December 1974 No. 5

Published monthly except June and July by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publications: 399 Howard Boulevard, Mount Arlington, N.J. 07856.

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Deadline for receipt of material is the 1st of the month preceding the month of publication. All communications concerning editorial matter should be addressed to: Ray Vaccari, Editor, 236 Summit Road, Mountainside, N.J. 07092. All communications concerning business matters, including advertising, should be addressed to: The Newsletter, c/o Girard Associates, Inc., 399 Howard Boulevard, Mt. Arlington, N.J. 07856.

Subscription: \$0.75 per year through dues for members; \$1.50 per year for non-members.

### REPORT ALL ADDRESS CHANGES TO:

Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, N.Y. 10017

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.

### SECTION OFFICERS

1974-1975

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Physical Fitness

Now that the winter months are here, it is important that physical activities remain an integral part of your life. It is now that everyone should remain active through some type of physical fitness program. A regular exercise program plays an important part in controlling one's weight, improving the efficiency and capacity of the lungs and heart, reducing emotional and nervous tension, and improving one's posture. Vigorous and regular physical activity can make you feel and look better all year around. Exercise will also increase physical endurance and stamina, thus providing a greater reserve of energy for leisure time activities.

There are many exercises which can be done during the course of a routine day. Some examples would include: putting socks and shoes on while balanced on one foot, taking stairs two at a time instead of just one, lifting objects such as chairs instead of pushing them, avoiding elevators, walking instead of riding, and tightening the muscles in your body a few times a day while standing or sitting at your desk.

These are just a few ways to get the benefits of exercise from your daily living, and with a good exercise program to compliment them you will look and feel fine all winter.

Student/Faculty/ Industry Program, Winter Power Meeting

The Electrical Energy Economy is here to stay. Electric Power Engineering Education is popular again. Consequently, the 1975 Winter Power Meeting of the IEEE Power Engineering Society will continue to feature provocative sessions of interest to students, educators and practicing engineers.

On Tuesday morning, January 28, there will be a session on "Evaluation of University Electrical Engineering Programs." Discussion on this highly controversial issue began at last year's Winter Power Meeting.

On Wednesday morning, January 29, the morning session will feature a panel discussion on the subject "Capabilities We Look For In Young Engineers."

The featured session is a sponsored luncheon for students, faculty and industry people. The date is Wednesday, January 29, 1975, at 12:45 in the Skytop Room. Selected

students and educators will be invited as in prior years. Other interested educators and industry representatives are welcome and may purchase tickets at the Hospitality Desk. A nationally prominent speaker will talk on Career Decisions.

Following the luncheon, the student winner of the Hickernell Award will present the winning paper. The Wednesday afternoon session will be completed by a panel discussion to provide "Answers to Your Questions about Power Careers."

The Thursday morning session, January 30, will feature a series of papers on the general subject: "Accreditation — Changes Needed; Extension to Graduate Programs?"

The complete Winter Power Meeting will be held January 27-31 at the Statler Hilton Hotel, 33rd St. and 7th Ave., New York City. For further information on the Student/Faculty/ Industry Program portion, contact Douglas Benner, Chairman, Student/Faculty/Industry Relations Committee, Public Service Electric & Gas Co., 80 Park Pl., Rm. 8357, Newark, N.J.; (201) 622-7000, ext. 2246.

Optical Fiber Transmission Systems

A joint meeting of the North Jersey Chapter Communications and Microwave Theory & Technique divisions, to be held Wednesday, February 12, 1975 at 8:00 P.M. at Bell Labs, Whippany, will feature Dr. M. DiDomenico, Jr., of Bell Labs, speaking on "Optical Fiber Transmission Systems."

Over the past several years optical fiber transmission systems suitable for use in commercial and military communications systems have begun to evolve. The evolution of these systems has been spurred by the progress in reducing the attenuation in glass fibers. Optical fiber systems are attractive because glass fiber waveguides offer potential low cost, small size, light weight, strength and flexibility, and chemical and electrical stability. In addition, optical fibers provide wide bandwidth capabilities together with immunity to electromagnetic interference. These characteristics, some of which are unique, give optical fiber transmission systems potential economic viability in many sectors of the commercial and military communications network. This talk will review some of the fundamentals of optical transmission systems highlighting optical fiber waveguides, GaAs injection laser sources,



Ken Oexle, left, Chairman of the Power Engineering Group, presents certificate of appreciation awarded by IEEE Headquarters to Hank Youngster of Public Service Electric & Gas Company. Hank was recognized for his many contributions in furthering the objectives of IEEE while holding various offices in the Power Group, leading to his election as Chairman of the Chapter for the 1973-74 period.

Joint IEEE/ASME Power Group Meeting 10/23

By K.J. Oexle

Mr. Arthur Nilsen, Manager of Project Control Group, Equipment Construction at the Corporate Headquarters of Foster Wheeler Corporation addressed the first meeting of the Power Engineering Society Chapter on October 23rd. The Chapter was provided with an overview of "SACCS" — Schedule and Cost Control System — a tool used by Foster Wheeler on major construction projects, as well as R&D programs to monitor overall budgets, progress, manpower requirements and productivity measurements. Mr. Nilsen discussed various reports generated by the system and the communication links employed to access data from remote construction sites throughout the world, and distribute timely reports to Foster Wheeler's clients, corporate management, construction managers and project managers.

silicon avalanche photodiode detectors, and optical carrier system performance.

Mauro DiDomenico, Jr. was born on January 12, 1937 in New York, New York. He received his B.S., M.S., and Ph.D degrees from Stanford University in 1958, 1959 and 1963, respectively. He joined Bell Laboratories in 1962 and has worked on lasers, electro-optic and nonlinear optic devices, high-speed silicon avalanche photodetectors, luminescence in III-V compound semiconductors, and optical communications systems. He has over 50 technical publications in these areas.

Since 1970 he has been Head of the Optical Devices and Optical Subsystems Department with responsibility for developing devices and subsystems for optical fiber transmission applications. Dr. DiDomenico is a member of the Institute of Electrical and Electronic Engineers, the American Physical Society, Tau Beta Pi and Sigma Xi.

For further information, contact J.F. Kampschoer at (201) 386-4135 or (201) 386-1922.

Time: 8:00 P.M., Wednesday, February 12, 1975.

Place: Bell Laboratories, Seminar

Room 3A-108, Whippany, N.J., (near intersection of Rt. 10 and Whippany Road.)

Pre-meeting dinner: 6:00 P.M., Hanover Trail, Rt. 10 between Rts. 287 and 202, Morris Plains.

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LETTERS TO THE EDITOR. The following space is reserved for you to add your comments concerning any IEEE function. Please make use of it.



DECEMBER • 1974

	Mon	Tue	Wed	Thu	Fri	
1	2	3	4 N.J. Section Exec. Comm. Meeting 7:30 P.M., Bell Labs., Whippany	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31 Copy Deadline For February Issue of The NEWSLETTER	FUTURE MEETINGS: Jan. 7, 1975—8:00 P.M., N.J. Control Systems Society Meeting on Digital Computer Monitoring, ITT Avionics Auditorium, Nutley. Jan. 23 and 30—MSC Employment Workshop, Stevens Institute of Technology. Jan. 27-31—Winter Power Meeting of the IEEE Power Engineering Society. Statler Hilton Hotel, N.Y.C. Feb. 12—N.J. COMSOC and Microwave Theory & Technique group joint meeting on Optical Fiber Transmission Systems. 8:00 P.M., Bell Labs., Whippany Mar. 1—N.J. Section Banquet May 15-16—Metro Area MOS Symposium, City Univ. of New York, N.Y.C.			

Call for MOS Papers

The annual Metropolitan Area MOS Symposium will be held at City University of New York, May 15-16, 1975.

Papers are being solicited on all aspects of MOS technology, including processing, circuitry, microprocessors, NMOS, PMOS, CMOS and MOS/bipolar.

February 28, 1975 is the deadline for papers. They should be submitted to Richard S. Payne, Bell Telephone Laboratories, Room 2D-433, Murray Hill, N.J. 07974. Authors of accepted papers will be notified by mail.

Computer Society Publications Catalog

The Fall-Winter 1974 edition of the IEEE Computer Society Publications Catalog is now available. The brochure covers the full line of computer technology books available from the Computer Society. Included in the 16 pages are outlines

of the topics covered in Compcn Digests, selected IEEE Press books, as well as proceedings from some of the most important symposia in the computer field: DataComm, Fault Tolerant Computing, Switching and Automata Theory, and others.

Catalogs are available, free of charge, from the Computer Society, Publications Offices, 5855 Naples Plaza, Suite 301, Long Beach, California 90803.

Order Your Calculators

On the first Wednesday of each month at 7:00 P.M. at Bell Laboratories, Whippany, the NJ IEEE Section will accept orders for calculators to take advantage of latest price changes.

Reserve Saturday, March 1, 1975 for the NJ IEEE Section Banquet

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Act of October 23, 1962; Section 4369, Title 39, United States Code)

1. TITLE OF PUBLICATION: The IEEE Newsletter; 2. DATE OF FILING: October 1, 1974; 3. FREQUENCY OF PUBLICATION: Monthly except June and July; 4. LOCATION OF KNOWN OFFICE OF PUBLICATION: 399 Howard Boulevard, Mt. Arlington, Morris County, New Jersey 07856; 5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS: 399 Howard Boulevard, Mt. Arlington, Morris County, N.J. 07856; 6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, and MANAGING EDITOR: Publisher, North Jersey Section IEEE, 399 Howard Boulevard, Mt. Arlington, N.J. 07856; Editor, Ray Vaccari, 236 Summit Road, Mountainside, N.J. 07092; Manager Editor, M.M. Perugini, 399 Howard Boulevard, Mt. Arlington, New Jersey 07856; 7. OWNER: North Jersey Section of the IEEE, 399 Howard Boulevard, Mt. Arlington, N.J. 07856; 8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES: None.

CIRCULATION STATEMENT

	Average Prec. 12 months	Issue Nearest Filing Date
Total Copies Printed		
Paid Circulation	5,360	5,400
Other Than Mail Subscriptions	None	None
Mail Subscriptions	5,040	5,009
Total Paid Circulation	5,040	5,009
Free Distribution	34	23
Total Distribution	5,074	5,032
Office Use, Left-Over, Unaccounted, Spoiled	286	368
TOTAL	5,360	5,400

I certify that the statements made by me are correct and complete.

M.M. Perugini

FEEDBACK CARD

With the December Issue comes a changed Newsletter. You will notice articles non-technical in nature which deal more with the individual. Are you interested in articles on your health, the energy crisis, economics, etc. ? YES NO

Can you suggest some items of interest you would care to see published in the Newsletter?

The Editorial Staff is looking for a couple of members interested in doing a little reporting and picture taking (fee paid) for the Newsletter. The requirements are that you attend at least 1 group meeting a month and write a news article for publication. Are you interested? YES NO