



## COMMUNICATION TECHNOLOGY GROUP

Volume 2 Number 2

December 1965

The Officers, AdCom and your Editors wish you personally a most Happy Holiday Season and Prosperous New Year.

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NEWSLETTER FUNCTION

This NEWSLETTER is published Quarterly for the Administrative Committee of the IEEE Communication Technology Group, and serves as a vehicle for the dissemination of news items of current importance and interest to members of the ComTech Group.

Technical Committees and other operating elements of the Group are invited to use this publication as its NEWSLETTER.

Items covering Committee, Chapter, Call for Papers, Meetings, Personal Professional, and other appropriate news are solicited and should be submitted to the Editors as follows:

General News, Committee Activities, etc.

Gunther Karger, Editor

IEEE ComTech Group Newsletter

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All Chapter Activities

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IEEE ComTech Group Newsletter

Teletype Corp.

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Skokie, Illinois 60076

Phone: 313-676-1000

THE DEADLINE FOR THE MARCH 1966 ISSUE WILL BE:

February 1, 1966. All items must be submitted prior to this date.

CHANGES IN ADCOM

The Administrative Committee Directory was published in the September issue. Changes are reported at this time.

## 1. Add:

Awards

Mr. Doren Mitchell  
Bell Telephone Labs.  
Bldg. MH-2D-465  
Murray Hill, N. J.  
Tel. LT-1-3370, Ext. 6577

## 2. Change:

Telemetry  
(Note new mailing  
address for Mr. Long)

Mr. F. Vinton Long  
P. O. Box 592  
Shreveport, La. 71102  
Tel. 318-424-0331

## 3. Change of Address:

Standards

Mr. W. Y. Lang  
Spring Lane  
Towaco 82, N. J.  
Tel. 201-334-2046

## 4. Change of Tel. No.

Wire Communication

Mr. J. C. Leffel  
313-357-3780

## 5. Change of Address &amp; Tel.

Translated Journal -  
"Electronics & Com-  
munications in Japan"

Dr. W. A. Miller  
Radiometrics  
4320 - 34th St.  
Long Island City, N. Y. 11101  
Tel. 212-937-0900

1966 IEEE COMMUNICATIONS CONFERENCE  
CALL FOR PAPERS

June 15-17, 1966

Sheraton Hotel, Philadelphia, Pa.

Persons with new contributions in communications and related fields are invited to submit papers for possible presentation at the major annual conference on Communications to be held June 15-17, 1966 at the Hotel Sheraton, Philadelphia, Pa. The first of this new series of conferences the successor to the GLOBECOM Conferences, was held in Boulder, Colorado, in June 1965.

The conference is being sponsored by the Communication Technology Group, the Philadelphia Section of the IEEE and the University of Pa. Other IEEE Groups will participate.

The subjects to be covered are expected to be of interest to persons engaged in research, design, analytical and theoretical studies, engineering, manufacture and operation of communication equipment. Proposed papers are particularly welcome in the areas of the following planned sessions.

Satellite Systems  
Satellite Terminals  
Aerospace Communication Systems  
Low Noise Technology  
Optical Technology (lasers)  
Broadband Distribution Systems  
Solid State Microwave Techniques and Technology  
Microwave Technology  
Broadband Carrier Systems  
Multiplexing  
Analog vs Digital Transmission

Broadband Radio Systems  
 Microwave System Interference and Frequency Coordination  
 Operation and Maintenance of Transmission Systems  
 Speech Bandwidth Reduction  
 Audio Technology  
 Data Switching  
 Data Systems and Error Control  
 Software for Communication Systems  
 Picture Transmission Systems in Communication Networks  
 Data Displays  
 National Communication Systems  
 AUTOVON AND AUTODIN Communication Systems  
 Switching Technology  
 Information Theory

Papers to be presented will be reviewed through the Program Committee which is composed of representatives of the ComTech Group technical committees and participating Groups. One thousand word reviewable digests will be required by Feb. 25, 1966. Address requests for further information to the Technical Program Chairman, A. E. Joel, Jr., Bell Telephone Labs., Inc., Room 2G-330, Holmdel, New Jersey 07733. Complete manuscripts may also be submitted by April 1, 1966 after the digest has been accepted. All accepted digests will be published for distribution at the meeting.

#### IEEE CONVENTION AND EXHIBIT - MARCH, 1966

The Communication Technology Group will present a substantial number of papers at the 1966 Convention. Jim Walsh (RCA) of the Meetings Committee is once more handling this matter and will soon have the Program firmed. This NEWSLETTER will announce ComTech sponsored sessions in the March issue. LOOK FOR IT!

#### COMMITTEE REPORTS

##### Awards Committee

Chairman Doren Mitchell  
 Bell Telephone Labs., Inc.  
 Mountain Ave.  
 Murray Hill, N. J. 07971

The Awards Committee has responsibility for helping to gain recognition for outstanding work in communication systems, particularly by members of ComTech. The ComTech Group has two annual Awards, one for Outstanding Achievement over the years by an individual and another for the Best Paper in the "Transactions" for the year from June 30 of the previous year to July 1st of the current year.

The Committee may also prepare or help to sponsor Fellow Grade Nominations and on occasion, sponsor individuals for some of the regular major I.E.E.E. Awards such as the Medal of Honor, M. J. Kelly Award, etc.

Any member of the Committee will welcome suggestions for any of these Awards.

##### Chapters Committee

Roger McSweeney, ITT World Communications, 67 Broad St., NY 4, NY

Since our last report in March, we have added a new Chapter at Columbus, Ohio, and a new joint Chapter (with Audio & Instrumentation Measurement) at Shreveport, La. This brings our total to 27 Chapters.

The Columbus Chapter was organized by Mr. Harold Heckendorn and your Chapter Chairman recently spoke before the new Chapter which appears to have the number of engineers and the enthusiasm needed for a successful organization. Mr. Robert Baine organized the joint Chapter at Shreveport which also seems to have the essentials of a good Chapter.

A petition has been submitted to the IEEE Executive Committee for formation of a Chapter in the Alabama Section at Birmingham. Mr. J. E. Spencer is organizing this Chapter. Our Membership Chairman, Zeb Burnett, has stirred up interest in forming a Chapter in Atlanta and it is quite likely that a petition for that Chapter may be submitted within the next few months. Inquiries have also been received about

the possibility of Chapters in the Central Pennsylvania Section and in the Central Indiana Section.

Our former exclusively ComTech Chapter in Boston has become a joint Chapter with Electromagnetic Compatibility under the chairmanship of Mr. Edward Buxton. The attempt to determine the status of the so-called "IEEE Cedar Rapids Chapter" has been unsuccessful to date, and I would welcome any available information with respect to it.

I regret to report continued lack of activity in the Chapters at Baltimore, Oklahoma City and Syracuse. It may become necessary to dissolve these Chapters.

The New York, Los Angeles and North Jersey Chapters have already scheduled outstanding talks for the 1965-66 year and most of the other Chapters seem to be doing nearly as well.

##### Wire Communication Committee News

John C. Leffel, Chairman  
 Michigan Bell Tel. Co.  
 23500 Northwestern Hwy.  
 Southfield, Mich. 48076

The Wire Committee sponsored four successful sessions at the recent NEC in Chicago. Attendance averaged about 80, with a maximum of 90 at two of the sessions. Interest ran high and a lively question and answer period followed most of the papers.

Task Force groups have been active. The force studying telephone sets has submitted a "Proposed Standard for Measuring Telephone Transmission Performance" for consideration of the IEEE Standards Committee. They are continuing study to determine a recommended standard artificial month. This will later become a part of the above proposed standard, which currently is based on the KS 16546 Artificial Month.

The longitudinal Balance Task Force has now collected sufficient data and reports to proceed in recommending a method for measuring longitudinal balance of facilities and equipment. Accordingly, two subgroups have been formed to consider and, if possible, recommend a method of measurement for standardization. The report from these subgroups is due no later than June, 1966 at the IEEE International Communications Convention.

The only serious matter facing our Committee at the moment is a technical paper shortage for Chicago (NEC) 1966. If you have anything to offer, please contact our chairman.

##### Radio Communications Committee

I. T. Corbell, Chairman  
 ITT Telecommunications  
 2912 Wake Forest Road  
 Raleigh, N. C.

Major activity of the IEEE Radio Communications Committee continues to be sponsoring IEEE meeting sessions and providing state-of-the-art papers on the subject of radio communications of systems. The committee is sponsoring one session in March at the International Convention and several sessions at the 1966 International Communications Conference. A specialty and interest poll has been made of all committee members preparatory to setting up subcommittees of experts for the various fields of radio. These subcommittees will be established in the next few months and should do much to improve both the quality and quantity of our future papers.

Mr. P. B. Pichetto, of the U. S. Army Strategic Communications Command, has been appointed liaison representative from the Committee to the IEEE Standards Committee.

##### Telemetry Committee

F. Vinton Long, Chairman  
 P. O. Box 592  
 Shreveport, La. 71102

Chairman Long announced the newly elected officers at the AdCom meeting held in Chicago during the NEC. Vice Chairman - S. D. (Steve) Chalmers, Salt River Power Project, P. O. Box 1980, Phoenix, Ariz. The appointment of Secretary will follow later.

Mr. Long also announced at the recent AdCom meeting that his Committee preferred to shoot ammunition in the form of Meeting Papers as heavy barrages at fewer meetings instead of diluting them among several meetings each year. In other words, it is the policy, at least for this year, that the Telemetry Committee will sponsor papers

at not more than two yearly, and one of these two will definitely be for NTC (National Telemetry Conference).

Suggestions for names of hard-working committee members will be welcomed, and also thoughts on how to obtain good papers for two meetings. Please remember that the Telemetry Committee primarily deals with ground telemetry, mainly in the industrial field, as compared to space telemetry and biomedical. This year, we are adding at least one oceanography-minded committee member.

#### THE NETWORK HOTLINE

John E. Mutty is associated with RCA in Burlington, Mass. He is Deputy Program Manager for Lem Communications.

Tom G. Kuhn has been promoted to Associate Director, Communications Systems, Inc., Paramus, N. J.

Charles E. Lathey is recuperating from a recent illness. Mr. Lathey is in the Office of Emergency Planning in the Executive Department of Government. Get well, Chuck.

Gunther Karger, Editor of this Newsletter has joined Pan American World Airways, Guided Missile Range Division, Communications Planning. He was previously a consultant at Radiation, Inc. and associated with Communication Systems, Inc.

William Sichak has been named vice-president and technical director of Communication Systems, Inc. Paramus, N. J. The post is new. Mr. Sichak was head of his own company, Sichak Associates, which was recently acquired by CSI. The Paramus company, a subsidiary of Computer Sciences Corp., specializes in conceptual planning and engineering services for telecommunication and other related systems.

#### CHAPTERS' COMMITTEE REPORT

We are again listing all of the ComTech Chapters officially on record. Two new chapters have been added, Columbus, Ohio, and a new joint chapter (with Audio and Instrumentation Measurement) at Shreveport, La. which brings our total to 27 chapters.

##### ComTech Chapters

Baltimore (Inactive)	Long Island	Orlando
Boston	Los Angeles (Metro.)	Philadelphia
Canaveral	Mohawk Valley	San Francisco
Chicago	New Jersey Coast	Seattle
Columbus	(formerly Monmouth)	Shreveport
Connecticut	Nebraska	Southeastern Michigan
Dallas	New York (Metro.)	Syracuse (Inactive)
Denver-Boulder	North Jersey	Toronto
Florida West Coast	Oklahoma City (Inactive)	Twin Cities
		Washington, D. C.

##### Report from Roger McSweeney Chapter's Chairman

Roger McSweeney reports that the Columbus Chapter was organized by Mr. Harold Heckendorn. He further states that when he recently spoke before the new Chapter, it appears to have the number of engineers and the enthusiasm needed for a successful organization. Mr. Robert Baine organized the joint Chapter at Shreveport which also seems to have the essentials of a good Chapter.

A petition has been submitted to the IEEE Executive Committee for formation of a Chapter in the Alabama Section at Birmingham. Mr. J. E. Spencer is organizing this Chapter. Our Membership Chairman, Zeb Burnett, has stirred up interest in forming a Chapter in Atlanta, and it is quite likely that a petition for that Chapter may be submitted within the next few months. Inquiries have also been received about the possibility of Chapters in the Central Pennsylvania Section and in the Central Indiana Section.

The former exclusively ComTech Chapter in Boston has become a joint Chapter with Electromagnetic Compatibility under the chairmanship of Mr. Edward Buxton. The attempt to determine the status of the so-called "IEEE Cedar Rapids Chapter" has been unsuccessful to date and any available information with respect to it would be welcomed.

Mr. McSweeney reports that due to continued lack of activity in the Chapters at Baltimore, Oklahoma City and Syracuse, it may become necessary to dissolve these Chapters.

The New York, Los Angeles and North Jersey Chapters have already

scheduled outstanding talks for the 1965-66 year, and most of the other Chapters seem to be doing nearly as well.

#### CHAPTER NEWS

##### Boston

Chairman	Mr. Edw. T. Buxton, Jr.
Vice Chairman	Dr. Glenn E. Fellows
Vice Chairman	Mr. Wm. Floyd
Secretary	Mr. Saul Fast

As reported in our last issue, the paper titled "Electrical-Electronic Interference Control for the Man-Rated Gemini Launch Vehicle" was presented by Mr. H. B. Ray of the Martin Co. at the Sylvania Auditorium on Sept. 20. Twenty-two members attended the meeting. On Oct. 14, another joint meeting was held at Mass. Inst. of Technology. R. P. Refuse, Associate Professor, discussed Electromagnetic Compatibility in R&D Organizations.

Arrangements have been made for the following CT/EMC Chapter meetings:

Date	Joint With	Speaker	Subject
11/16	G-12	Dr. Ditere Cardion Co.	Adaptable Communications Systems
12/9	G-10	Saul Fast National Co.	Recent Systems Advances in Spectrum Utilization and EM Compatibility through Wide Range Dynamic Recep.
1/11/66	G-12	W. E. Morrow MIT Lincoln Lab	Experimental Satellite Terminal System
3/10	G-12	E. H. Cooper DCA	Will discuss aspects of computer applications to communications systems

##### Canaveral

Elections were held on November 23. The newly elected officers are:

Chairman	Dr. B. E. Keiser, Manager Plans & Programs Kennedy Space Center Communication Project, RCA
Vice Chairman	L. Lerner, Program Mgr. Range Control Center Pan American World Airways
Secretary	Rollo E. Christensen, Dir. Mktg. Data Communications Dept. Radiation, Inc.

G. Karger, Section Secretary installed the officers. Dr. B. E. Keiser presented a talk on "Space Port Communications Today and Tomorrow." (For Feb. 28 Meeting Announcement see Page 17)

##### Chicago

Chairman	Dr. Herbert J. Stein Univ. of Illinois Box 4348 Chicago 80, Illinois
Vice Chairman	Mr. C. Q. Lee Univ. of Illinois Box 4348 Chicago 80, Illinois
Secretary	Mr. Warren R. Foxwell Teletype Corp. 5555 Touhy Ave. Skokie, Illinois

The first meeting of the year was held in the Illinois Institute of Technology Research Tech. Center Club on Sept. 14.

Dr. Machol, Head of the Systems Eng. Dept. at the Univ. of Illinois at Chicago Circle, discussed the subject of "Information - Theoretic Limitations on Fine-Resolution Sensors."

The first of what is hoped will be a successful series of dinners was held on Monday, Oct. 25, 1965, at McCormick Place, in conjunction with NEC. The dinner, presided over by Dr. H. J. Stein of the Univ. of Illinois at Chicago Circle, the Chicago Group Chairman, was attended by many members of the Chicago Group and several visitors.

including some from the British Isles. The dinner was organized and attended by the National Administrative Committee of the Group, many of whom were present.

Dr. R. K. Hellman, Chairman of IEEE ComTech Group, was the Main Speaker of the evening.

Future plans call for similar dinners at conventions which are attended by many members of the Group.

A dinner tour was held on Nov. 11, at Teletype Corp. in Skokie, Illinois. In addition to the tour, the program included a demonstration of Teletype equipment operating on a shared time basis with a computer located in New York City.

A paper entitled "Adaptive Communications" was presented by Dr. Stephan Tsai, Associate Professor at IIT. The paper described a receiving system which will adapt its structure to optimize the reception of a fixed but unknown wave form.

#### Columbus

Chairman Mr. Harold Heckendorn  
Western Electric Co.  
6200 E. Broad St.  
Columbus, Ohio

Welcome to the ComTech Group.

The inaugural meeting was held on Oct. 20, in the new auditorium at Battelle Memorial Institute in Columbus.

Mr. Roger McSweeney, Assistant Chief Engineer, World Wide Communications Internat'l Telephone & Telegraph Co. and National IEEE Director of the ComTech Group spoke on the Subject "What Can Communication Technology Do For You?"

The following topics were covered:

Reasons for the existence of technical societies in general and of the IEEE in particular.

Groups as "Societies Within a Society."

The Communications Technology or "ComTech" Group.

What a ComTech Chapter can do for you and what you can do for ComTech.

In addition, Mr. Wm. Keister, Director of Electronic Switching Systems Engineering Center, Bell Tel. Labs., Holmdel, N. J., discussed "Computer Technology in Communications."

#### Connecticut

Chairman Mr. R. Alfred Gogolen  
The So. New Eng. Tel. Co.  
Vice Chairman Dr. Leslie S. Radnay  
Litton Systems, Inc.  
Secretary Mr. David E. Ostrom  
The So. New Eng. Tel. Co.

"Instant Communications Systems Concept" was the topic of a meeting sponsored by the Connecticut Chapter held Tuesday, Oct. 19, at the Univ. of Bridgeport Student Center.

Mr. Ken Guscott, Sr. Principal Eng., Westrex Communication Div. of Litton Industries in White Plains, N. Y., discussed the performance requirements of computer controlled high frequency communications systems.

Electronic Switching Systems will be discussed at a Connecticut Chapter sponsored to be held Tuesday, March 15, 1966 at the Yankee Silversmith in Wallingford, Conn.

#### Dallas

Chairman Mr. Hugh Tomlinson  
Vice Chairman Mr. Frank Reisch  
Secretary Mr. Curtis Ritchie

No new activities reported.

#### Denver-Boulder

Chairman Quintus Wilson  
Ball Bros. Research  
Boulder, Colo.  
Vice Chairman Richard C. Webb  
Colorado Instruments  
Broomfield, Colo.

Secretary Neal Kindig  
Univ. of Colorado  
Boulder, Colo.

No new activities have been reported.

#### Florida West Coast

Chairman Henry L. Wallace  
1285 Venetian Way  
Winter Park, Fla.

No activity reported.

#### Long Island

Chairman J. C. Hepburn  
RCA Communications, Inc.  
Vice Chairman Walter Arndt  
Airborne Instruments Lab.

No activity reported.

#### Los Angeles

Chairman W. L. Bacon  
Vice Chairman D. H. Potter  
Secretary/Treas. S. N. Shepherd

Meetings were held on Sept. 14 and Oct. 5, at the Pacific Tel. Co., 12th Floor, Auditorium, 740 South Olive, Los Angeles. The balance of meetings are scheduled for Sept. 14, Oct. 5, Nov. 10, Dec. 7, Jan. 11, Feb. 1, March 1, April 5, and June 7.

The following subjects will be covered at the proposed meetings:

1. Panel Discussion on Noise - White and Impulse, Causes, Detection and Measurement
2. Electronic Switching Calculations
3. "AUTOVON" Switching and Transmission
4. Long Range T Carrier
5. Communications Computers
6. Panel on CATV - Marketing, Engineering, Equipment & Design
7. Picture Phone and Touch Tone Dialing
8. Bell Labs Developments, projects and package design
9. Project Apollo

A Saturday trip to the U. S. Navy Missile Center at Point Mugu and a side trip to Dolphin Pools is planned for sometime in Nov.

The Program Committee has been a real task force for providing service. They are Maynard Hartsock, Jack Scrivner, Pat Welch, Bob Judd, Doug Potter, Jack Mosley and Jim Orton. Ideas and suggestions are welcomed.

#### Mohawk Valley

Chairman Earl Selover  
RADC Communications Div.  
Vice Chairman Clifford Dart  
New York Telephone Co.  
Secretary W. R. Burrows  
Raytheon Co.

Sponsored by the Mohawk Valley Section of IEEE, the 11th NAT-COM was held Oct. 11-13, 1965 at the Hotel Utica, Utica, N. Y. Nearly 300 communications and electronics engineers, many with their wives, were in attendance to hear papers under the theme: Communications--Challenger of Time and Space.

One of the technical highlights of the Symposium was the panel discussion on "The Impact of Satellites on Military and Industrial Communications" moderated by A. G. Kandoian, Vice President and General Manager, Communications Systems, Inc., Paramus, N. J. The other panelists were:

Eugene Ehrlich NASA Communications & Navig. Office  
Jay J. Cohen DCA  
James Larkin Vice President of ABC  
Thomas Greenish Exec. Vice Pres., Western Union Intl  
E. J. Istvan Dir. Intn'l Plan., Com. Satellite Group  
S. P. Brown Tech'l Dir., U. S. Army, Satellite  
Communications Agency  
W. F. Morrow, Jr. Deputy Dir., Communications  
MIT, Lincoln Lab.

The use of satellites created spirited discussion among the panelists and it was generally concluded:

- a) Some major points with relationship to satellite communications would greatly enhance the reliability of trans-oceanic communications with aircraft.
- b) It eventually will be possible to have long distance user to user communications without large and complex intermediary stations.
- c) The use of VHF transponders by NASA in some of their forthcoming experiments is expected to greatly reinforce the overall effectiveness of satellite communications.
- d) Communications with other satellites will draw on technology obtained in these early communications experiments.
- e) Both industry and military have a great need for the efficiency which satellite communications would provide because in both media, the communications explosion has or is on the verge of over-taxing current facilities.

The social side of the Symposium was highlighted by the Women's Program under the direction of Mrs. Robert Petrlak and the industry sponsored cocktail party and buffet plus a featured cast of Broadway entertainers.

#### Nebraska

No activity reported.

#### New Jersey Coast

Chairman Arthur H. Ross  
USAEL Ft. Monmouth, N. J.  
Vice Chairman Seymour Krevsky  
RCA-NYSL-N. Y.  
Secretary Peter Maresca  
USA Satellite Comm. Agcy.  
Ft. Monmouth, N. J.  
Treasurer Ron Whalin  
Bell Telephone Labs.  
Holmdel, N. J.

We are advised by the Secretary that the Chairman's name was inadvertently misspelled in our last issue. Please accept our apology for any inconvenience caused by the oversight.

#### New York

##### EXECUTIVE COMMITTEE - 1965-1966

Chairman V. T. McDonough (Vince)  
American District Telegraph Co.  
155 Sixth Avenue  
New York, New York 10013  
Vice Chairman W. M. Seufert (Wally)  
American Tel. & Tel. Co.  
195 Broadway (Room 1132)  
New York, New York 10007  
Secretary J. Jackson (Joe)  
Western Electric Company  
Department E1943  
Broad and Cedar Streets  
Newark, New Jersey 07102  
Treasurer J. R. Tusso (Joe)  
I.T.T. Export Corp.  
Send mail to: J.R.Tusso  
877 Tice Place  
Westfield, New Jersey  
Jr. Past Chairman G. Spiro (George)  
Bell Telephone Labs  
Holmdel, New Jersey  
Sr. Past Chairman A. Kohan (Al)  
American Tel. & Tel. Co.  
195 Broadway (Room 1858)  
New York, New York 10007

#### Chairmen of Standing Committees

Meetings & Papers	W. L. Shafer (Bill)	Bell Telephone Labs 463 West Street (Rm.1067) New York, New York 10014
Study Group	R. E. Sanner (Dick)	G.T.& E. Service Corp. 730 Third Avenue New York, New York 10017
Education	W. J. Carroll (Bill)	New York Telephone Co. Room 1300 140 West Street New York, New York 10007
Related Activities	F. E. Sellinger (Frank)	A.D.T. Company 155 Sixth Avenue New York, New York 10013
Publicity	D. J. Gillespie (Don)	New York Telephone Co. 117 East 167th Street Bronx, New York
Member-at-Large	J. J. Foley (John)	New York Telephone Co. 140 West Street New York, New York 10007

It is reported that the incoming Executive Committee is striving to duplicate the performance of the past year.

Meeting attendance is summarized as follows:

	1964-65		1963-64	
	No.	Attendance	No.	Attendance
Regular Meetings	7	172	7	383
Study Groups	18	1152	18	1146
Educational	18	1374	18	252
Inspection Trips	2	85	3	103

A comparison of the past year with the prior year indicates the superior record of last year.

Date	Lecture	Attendance	Prior Year
Oct. 14, 1964	"Heartprints and Other Body Sounds" by L. G. Kersta of Bell Tel. Labs.	18	114
Nov. 19, 1964	"New Development in High Speed Memory" by W. J. Bartik of Univac	14	68
Jan. 13, 1965	"The Pert/Cost System" by S. T. Rothfeld of I. T. T. Federal Elec.	23*	43
Feb. 17, 1965	"PICTUREPHONE" by Dr. T. V. Crater of Bell Tel. Labs.	24	40
Mar. 17, 1965	"Videx-Telephone Line Television" by P. Keller of ITT Industrial Labs. Ft. Wayne, Indiana	31	45
Apr. 14, 1965	"Operation of the Electronic Telegraph System (RCA-C)" by E. D. Becker of RCA Communications	42	38
May 12, 1965	"Computer Programs for Microcircuit Design" by A. Spitalny of United Aircraft	20	35

\*The MONITOR was seriously delayed, arriving at the homes of some members January 20!

#### Fall Series 1964-65

"Electronic Switching Communications Systems"

Registration: 161

As indicated, this was a popular subject with good publicity which was well received. The success of this series suggests a sizable audience exists when the topic is current and the publicity gets to the right

people. It is also the feeling of the Committee that the fall of the year is the best time to attract a large audience.

Winter Series

"Language: Written and Spoken - Electronic Identification and Conversion"

Registration: 20

It was realized that this subject would not draw as well as the fall series, but it is the type of subject we should include at least occasionally. The registration was further curtailed by late publicity, particularly in the MONITOR. The series was held in the Western Union cafeteria-mezzanine because of the small group size. The change resulted in some difficulties with lecture aide, but the smaller room works out much better for a group of this size. The material was well-presented and well-received by the audience.

Spring Series

"Engineering Education and Utilization"

Registration: 11

The difficulty seems to be again one of publicity. Because of space problems, the MONITOR cut back the material in the March issue and the April issue did not come out until after the series started. Direct mailings were made to members of the ComTech Group in New York, Westchester, and Northern New Jersey, and to the New York membership of the Management Group. This series is being jointly sponsored by the Management Group and Communication Technology Group.

EDUCATION COMMITTEE (extracted from report by J. L. Vossen)

The lecture series for 1964-65, "Engineering Applications of Computer Programming" was sponsored jointly with the New Chapter of the Computer Group. Coordination of the activities of the Education Committee and the G-C was often poor or non-existent. Based on this experience, the Committee recommends that joint sponsorship with other groups should be limited to "name lending." That is, the G-ComTech should bear the full responsibility (organizational, financial, etc.) for future lectures, but should solicit the use of another group's name for promotional purposes when course content is found to overlap the interests of other groups.

Fall Series: "Introduction to Programming"

This part was presented by Prof. T. R. Bashkow, Columbia University. The enrollment was 85. Three of the lectures covered FORTRAN syntax and the remaining three lectures covered the detailed programming of simple problems. Prof. Bashkow's presentation was excellent and was very well received.

Winter Series: "Design Applications"

This part was presented in three sections of two lectures each covering: "Component Design" (Miss M. Elizabeth Schumaker, IBM); "System Design and Manufacture" (Mr. Harry B. Randall, Jr., IBM); and "Circuit Design" including DC, AC and Transient Analysis (Mr. Thomas S. Lutz, IBM).

This part was also well received, especially the section given by Mr. Lutz on "Circuit Design." The enrollment was 71.

Spring Series: "Special Applications"

This part covered computer programs already built into machines (subroutines) as well as programs for various control operations. The topics and speakers were as follows:

Program Generators - SORT/MERGE Techniques  
H. Lorin, Manager of Specifications, Systems Programming  
Univac Division of Sperry Rand Corp.

Computer Uses in Production Engineering  
(Numerical Control & Automatically Programmed Tools, APT)  
Dr. Gastone Chingari, Manager of Applications Programming  
Univac Division of Sperry Rand Corp.

Linear Programming (Decision Making)  
A. Shapiro, Supervisor of Mathematical Programming  
Univac's System Programming Dept.

PERT/COST (The extension of PERT Scheduling techniques to include costs in major programs)  
V. Erskine, Supervisor of PERT/COST Projects  
Univac Division of Sperry Rand Corp.

Real Time/Time Sharing Computer Bases Systems - Their Functions and Design  
R. B. Batman, Univac Project Manager  
Ohio Bell Telephone Co., Cleveland, Ohio

Traffic Control (Traffic taken in the broadest sense - two and three dimensional vehicular traffic and non-material traffic such as communications)  
Carl Hammer, Ph. D.; Director of Scientific Computer Marketing  
Univac Division of Sperry Rand Corp.

The proposed program for 1965-66 is as follows:

Date	Subject	Speaker(s)
October 13	Stock Exchange Computer Arrangements	G. E. DuBois (I.B.M.) E. Osmann (N.Y.T.)
November 17	Status of Solid State Device Techniques in Radio Relay Systems	L. G. Abraham (Bell Tel. Labs)
January 19	Under consideration	
February 16	Under consideration	
March 16	Under consideration	
April 13	Under consideration	
May 11	Under consideration	

The subjects being considered for 1966 are as follows:

1. Small Desk Top Computer as an Aid to the Engineer
2. International Communications - Standards and Equipment
3. Satellite Systems
4. Picturephone or Commercial Video Communication Possibilities
5. Ink Jet Teletypewriter High Speed Printer
6. Wide Band Submarine Cable and Effect of Cables and Satellites on H. F. Radio Systems
7. Motor Vehicle Traffic Control in New York City
8. New Developments in Telephone Switching

The members of the Education Committee have established a series of 18 lectures entitled "Communications Transmission - A Changing Technology."

All lectures will be held on Tuesday evenings 7-9 P. M. in the "Little Theater", New York Telephone Co., (Main Floor), 140 West Street, N. Y. A text book entitled "Transmission Systems for Communications" will be provided for each participant.

The program is as follows:

Fall Series 1965 - Part I - Fundamentals

Date	Subject	Chapters in Text	Speaker
Oct. 19	Information Transmission	27, 28	Dr. Donald L. Schilling
Oct. 26	Limitations Due to Noise	7	" "
Nov. 9	Introduction to Digital Technique (Pulse Modulations)	24	" "
Nov. 16)	Introduction to Analog Modulation	4, 8, 19, 20, 21	" "
23)			
30)			

Winter Series 1966 - Part II - Systems Design

Jan. 18	Introduction to System Design	2, 3, 5, 6	N. A.
Jan. 25	Load Capacity, IM Req'mts	9, 10	A. R. D'heedene
Feb. 1	Feedback Repeater Design	11	" "
Feb. 8	System Layout & Analysis	12	" "
Feb. 15	Misalignment, Equalization and Regulation	13, 14	" "
Mar. 1	Design of AM Carrier System		N. A.

Spring Series 1966 - Part III - Design Applications of Wideband Systems

Date	Subject	Chapters in Text	Speaker
Apr. 12	Microwave Systems	17	N. A.
Apr. 19	Radio Propagation & Frequency Allocation	18, 22	N. A.
Apr. 26	Radio Systems Design	23	N. A.
May 3 )	Pulse Code Modulations	25, 26	N. A.
May 10)			
May 17	Wideband Data	28	N. A.

The Fall Get-Together was held at the Hotel Shelburne, 37th St. & Lexington Ave., New York City on Tuesday, Sept. 21, 1965.

A minimum of four field trips are planned for the coming season. A tentative list of these trips is as follows:

Oct. 1965	New Jersey Bell Telephone Co. Electronic Switching Exchange, Succasunna, N. J.
Nov. 1965	Metropolitan Area Airport
Mar. 1966	Columbia University Shipboard Laboratory
Apr. 1966	New Jersey Bell Tel. Co. Electronic Switching Exchange, Succasunna, N. J.

The March, 1966 trip to the Columbia University Shipboard Lab. may be held on a Saturday.

Mr. D. J. Gillespie, Chairman, Publicity Committee, reports that the Meetings and Papers Committee of the ComTech Group will present a talk by Robert L. Price of Emtech Research Products Corp. on "The Stored-Program Calculator As An Engineering Tool" at the New York Telephone Co. Little Theater, 140 West St., on Jan. 19, 1966 at 7:00 P. M.

Mr. Price will include in his paper a brief description of the internal organization and operating speeds for a typical stored-program calculator. Programming philosophy, logic and machine language will also be discussed. In order to demonstrate the utility of this type of device, the program written for a solution of a typical problem will be illustrated, as well as a discussion regarding the application of stored-program calculators to general types of engineering problems. Specific emphasis will be placed on man-machine interaction in problem solving.

There will be available a typical Mathatron desk top computer configuration which will demonstrate some of the principles discussed.

Mr. Price was born in Stamford, Conn. in 1937. He received the Bachelor of Elec'l Eng. Degree from Rensselaer Polytechnic Inst. After graduation, he joined the Westinghouse Corp. in the graduate student training program and subsequently moved to the Westinghouse Electronic Internat'l Corp. as a sales engineer. He joined Emtech Research Products Corp. in 1964 as a systems sales engineer. At the present time, Mr. Price is Manager of Systems Development for Emtech.

Mr. Gillespie further reports that the ComTech Group is sponsoring the following programs:

(I) IEEE SYMPOSIUM ON SWITCHED VOICE AND DATA NETWORKS  
Mondays, 7:00 P. M. Western Union Auditorium W. Bway & WorthSt.

The first complete exposition of communications networks for the transmission and retrieval of information presented to engineering and scientific personnel in Eastern United States will be given by the Defense Communications Agency (DCA) of the U. S. Dept. of Defense.

10/18/65	Defense Communications Agency/Defense Communications System Col. J. F. Gerstner, USA, Chief of Communications Services Div. of DCA.
10/25/65	World Wide Automatic Voice Network (Autovon) Lt. Col. A. Mark, USA, System Integration Div., DC5
11/1/65	World Wide Automatic Digital Network (Autovon) Lt. Col. R. A. Bourcy, USAF, Systems Integration Div., DC5

11/65	Engineering Management-Automatic Voice Network (Autovon)/Automatic Digital Network (Autodin) Mr. R. Levine, Tech'l Dir., Defense Comm. Eng. Office.
11/15/65	Systems Management-Defense Communications Col. L. Paschall, USAF, Asst. Director, DC5 Programs and Requirements
11/22/65	Defense Communication System Long Range Objectives/Research and Development Lt. Col. A. F. Arant, USA, Objectives Division, DCA

(II) TALKING COMPUTERS & ACCESS LINE SWITCHING  
Wednesday, 7:00 P. M. Carnegie Building 345 E. 46th Street

For many years, man has talked to machines using a language that the machine can understand. Now the tables are turned - machines talk to man in his own language. On Oct. 13, 1965, Messrs. G. E. Dubois, IBM Corp., and E. Osmann, N. Y. Telephone Co., will discuss the recently installed stock market quotation system at the N. Y. Stock Exchange.

Abstracts of Talks

The N. Y. Stock Exchange has recently completed a three year program to automate their manually operated stock ticker and telephone quotation system. Subscribing brokers may now dial one of two audible messages relative to any of the 1600 plus securities listed on the exchange. The Quotation Access Switching System (QASS) a specially designed system, is capable of handling 1015 calls per minute with a trunk holding time of 7 seconds each. The Voice Answer Back Unit (VAB) with a vocabulary of 256 words and an output capacity of 200 simultaneous messages, enables subscribing brokers to receive the latest market information. To maintain a uniform machine time a method was devised for altering the length of words to fit machine time slots.

In addition to discussions of QASS and VAB, tape recordings of the "computer voice" will be heard.

(III) COMMUNICATIONS TRANSMISSION - A CHANGING TECHNOLOGY  
Tuesdays, 7:00 P. M. N. Y. Telephone Co. Little Theater, 140 West St.

"Communications Transmission - A Changing Technology" is the subject of a series of 18 lectures being sponsored by the Education Committee of the ComTech Group, N. Y. Section IEEE. The series is divided into three parts. Each part will be presented by a recognized authority in his field.

Fall Series - Part I - Fundamentals

10/19/65	Information Transmission
10/26/65	Limitations Due to Noise
11/9/65	Introduction to Digital Technique
11/16/65)	Introduction to Analog Modulation
11/23/65)	
11/30/65)	

Speaker: Dr. Donald L. Schilling, EE Dept. Polytechnic Institute of Brooklyn

Beginning Jan. 18, 1966 Winter Series - Part II - Systems Design  
Beginning Apr. 12, 1966 Spring Series - Part III - Design Applications of Wideband Systems

North Jersey

Chairman	A. A. Roetken
Vice Chairman	J. Harvey
Secretary	G. K. Helder
Financial & Facilities Officer	M. Westheimer
Publicity	J. E. Unrue, Jr.
Membership	B. Mindes
Liaison & Nominating	R. G. Chipp

The North Jersey Chapter held its first meeting of the current season on October 5, 1965. The speaker was Mr. O. E. DeLange of Bell Telephone Laboratories. Mr. DeLange discussed "Coherent Light as a Medium for Broadband Communications." The inherent advantages and disadvantages of a coherent light transmission system over conventional systems, and how they affect the possibility of achieving a practical and economical light transmission system were discussed. The various components required for such a system were listed and the present state of development of each, along with consideration of the possible future developments, was described. Enclosed and protected transmission media as well as those open to the atmosphere were discussed and some experimental data concerning the losses and stability for each medium were presented. Mr. DeLange concluded his talk with a description of an experiment involving the transmission of television pictures and voice multiplex over a light beam.

On November 16, Mr. Frederick J. Altman of System Sciences Corp. spoke on "System Aspects of the Defense Communication Satellite Program." The final two meetings of the season are described below:

Date: February 15, 1966  
 Time: 8:00 P.M.  
 Speaker: Michael J. DiToro  
 Cardion Electronics, Inc.  
 Subject: Adaptive Communications  
 Place: Arnold Auditorium  
 Bell Laboratories, Inc.  
 Murray Hill, New Jersey

Date: April 19, 1966  
 Time: 8:00 P.M.  
 Speaker: F. T. Andrews, Jr.  
 Bell Telephone Laboratories  
 Subject: Cable Communications  
 Place: Communication Systems, Inc.  
 Paramus, New Jersey

Oklahoma City  
 Inactive

Philadelphia  
 Chairman: Mr. Keith Wilder  
 RCA Bldg. 1-5-1  
 No activities reported.

San Francisco  
 Chairman: Fred Beale  
 Lenkurt Electric Co.  
 Vice Chairman: Robert Howland  
 Pacific Tel. & Tel. Co.  
 Secretary-Treas.: C. G. Griffith  
 Lenkurt Elec. Co.

On the evening of Sept. 22nd, the ComTech Group held its first meeting of the year at the Paul Masson Mountain Winery. A barbecue steak dinner followed a period of wine tasting. After dinner, the chairman, Fred Beale, made an announcement concerning the remaining four meetings of the year and the technical subjects involved to the extent that they were known.

Dr. Ephrian Engleman, a physician, then introduced the other two members of the "Strafilcher String Trio," Craig Vittetoe, a teacher and writer; and Chalmers Smith, an attorney. A guest violinist, Elizabeth Breed, joined the trio for an outstanding performance of the Beethoven String Quartet, Opus 18. There were 89 persons in attendance.

The next meeting will be held on December 1st, at 8:00 P. M. at Lockheed Auditorium, Bldg. 202, 3251 Hanover Street, Palo Alto, Cal. It will be preceded by a 6:15 dinner at Rick's Swiss Chalet, 4085 El Camino Way, Palo Alto.

The subject is "DATEL Service of ITT World Communications, Inc.," and the speaker will be Kenton T. Wilder of ITT World Comm.

The meeting following the one in December will be held on the night of January 26th.

Seattle  
 Chairman: Dale O. Shuck  
 3803 SW 107th St.  
 Seattle, Wash.

No activity reported.

Shreveport  
 Chairman: Robert W. Baine  
 Interstate Elec. Co.  
 Shreveport, La.

Congratulations and welcome to our group.

Southeastern Michigan  
 No report

Syracuse  
 Inactive

Toronto  
 No activity reported.

Twin Cities  
 Chairman: Norman W. Parus  
 9349 Penn Ave. S.  
 Minneapolis, Minn. 55431  
 Vice Chairman: Robert R. Smith  
 6980 Laura Lee Lane  
 Eden Prairie, Minn. 55345  
 Secretary: Norman F. Priebe  
 2276 Highcrest Dr.  
 St. Paul, Minn. 55113

Other officers are George Baldy, Membership Chairman; Robert Egema, Program Chairman; and Harold G. O'Brien, Section Representative.

The first meeting of the season was held at Macalester College, St. Paul, Minn. in the new Olin Science Hall. Dr. Sherman Schultz of the Macalester faculty conducted a tour of the new astronomical observatory and the planetarium. Prof. Schultz then presented a planetarium show in which he convincingly demonstrated the efficiency of a modern planetarium as a tool for teaching astronomy. The meeting was preceded by dinner at the Lexington Restaurant.

Two additional meetings are tentatively scheduled for the end of November and the end of January. Further details will be published in the Twin Cities Section "RADIATOR."

Washington  
 Chairman: Merle E. Floegel  
 Satellite Communication Office  
 FCC

Principles of the ESS - A Programmed, Self-Diagnosing Electronic Telephone Exchange was presented by Alex. Feiner, Head Electronic Switching Networks Dept., Bell Telephone Labs. on Dec. 7, 1965 at PEPCO Auditorium, 10 & E Streets, NW, Washington, D. C.

In 1954, a small development group was organized at the Bell Telephone Labs. to explore the applicability of electronic technology to telephone switching. Mr. Feiner, a member of the original team, will describe the history of this project and explain the organization of the system.

The high speed of the electronic components permits a complete concentration of functions and leads to an organization consisting of a logic unit assisted by two types of memories. One of the memories contains all the intelligence of the office in the form of a stored program of more than 100 thousand words; the other is used for keeping of call data and other temporary records. The stored program organization endows this office with a unique flexibility that will permit to offer economically new services; some of these will be demonstrated at the end of the talk.

A. Feiner is responsible for the development of switching networks, trunks, and scanners, and for transmission aspects of No. 1 ESS. Since joining Bell Labs. in 1953, Mr. Feiner has been associated with

various phases of electronic switching techniques.

Born in Vienna, Austria, Mr. Feiner did his undergraduate work at the Vienna Institute of Technology. He received the M. S. degree in Elec'l Engineering from Columbia University in 1952. Mr. Feiner is a member of Sigma Xi.

MEMBERSHIP COMMITTEE FORMED

Wm. C. Burnett  
 Southern Bell Telephone  
 P. O. Box 2211  
 Atlanta, Ga. 30301

Wm. C. Burnett is establishing a comprehensive Membership Committee for the ComTech Group. The committee is being so formed that it will operate both horizontally and vertically in promoting membership in ComTech.

The horizontal operations will be on a geographical basis; thus a representative in each IEEE region will work with and through the sections in his region. Promotion activities will include the naming of a worker in each section (and in subsections where appropriate), notices and stories in section publications, announcements at meetings, and close liaison with the section membership committee.

The vertical operations will be in industry groups such as education, military, manufacturers, and telephone, with the effort being directed through corporate or organization channels. Because faculty influence students and students are the members of tomorrow, promotion activity on the campus is deemed of such importance that three committeemen will share this responsibility.

Other committeemen will work with those delinquent in dues, will establish liaison with the Chapters Chairman, will do promotion at national meetings, and will strive to bring the technical committees to full membership in ComTech.

The plan is for each member of the committee to have a specific responsibility.

The vice chairman will be Wm. J. Roberts, Jr., Mountain States Telephone, Denver, who last year so successfully increased membership in ComTech among the members of the Wire Communication Committee. The secretary will be Claude E. Munsell of General Telephone and Electronics, New York.

As of late October, about 20 ComTech members had agreed to serve on the membership committee. The full committee, which will number about 25, will be reported in the next Newsletter.

Despite being incomplete, the committee is hard at work. One activity has been a personal letter to each of 135 ComTech members who reported were delinquent in Institute dues. Regional directors and section chairmen aided this follow-up.

Organization 1965-66

OFFICERS

Chairman - Wm. C. Burnett, Southern Bell  
 Tel. & Tel. Co. Atlanta, Ga.  
 Vice Chairman - Wm. J. Roberts, Jr., Mountain  
 States Tel. Co., Denver, Colo.  
 Secretary - C. E. Munsell, General Tel. &  
 Electronics Corp. New York, N. Y.

REGIONAL REPRESENTATIVES

Region 1 R. C. Benoit, Rome Air Development Center,  
 Griffiss AFC, New York  
 2 P. M. Kelly, Philco Corp., Arlington, Va.  
 3 W. L. Sullivan, Southern Bell Tel. & Tel. Co.  
 Atlanta, Ga.  
 4 B. L. Traeger, Michigan Bell Tel. Co., Detroit  
 5 W. S. Hazlett, Southwest. Bell Tel. Co., Houston  
 6 F. S. Beale, Lenkurt Elec. Co., San Carlos, Cal.  
 7 G. Y. R. Allen, Osborne Elec. Co., Ltd.,  
 Toronto, Canada  
 8 J. W. Halina, ITT Europe Inc., Brussels 1, Belg.

SPECIFIC REPRESENTATIVES

Promotion P. D. Lattner, Illinois Bell Tel. Co., Chicago, Ill.  
 Delinquents A. R. Ross, Comm/ADP Lab., Ft. Monmouth, NJ  
 Chapters J. E. Frank, Comm. Systems Inc., Paramus, N. J.  
 Tech'l Committees - B. S. Quell, Michigan Bell Tel. Co.,  
 Southfield, Mich.

INDUSTRY KEY MEN

Education (East) - D. L. Schilling, Polytech. Inst. of Brooklyn, NY  
 " (Midwest and Northwest) D. E. Clark, Automatic Elec.  
 Labs., Inc., Northlake, Ill.  
 " (Southwest) H. A. Spuhler, Texas Tech., Lubbock, Tex.  
 Military - L. R. Shucavage, Comm/ADP Lab., Ft. Monmouth, NJ  
 Manufacturers - D. E. Harrell, ITT Communications, Raleigh, NC  
 Railroads - C. O. Jett, Union Pacific RR Co., Omaha, Nebr.  
 RCA - W. E. Geen, RCA Communications Inc., New York, N. Y.  
 General Electric -  
 Bell System - Alex. Kohan, American Tel. & Tel. Co., New York  
 Other Telephone - C. E. Munsell, General Tel. & Electronics  
 Corp., New York, N. Y.  
 Bell Labs. - G. K. Helder, Bell Tel. Labs., Murray Hill, N. J.

It is impossible at the state to cover all industry groups, and so certain ones were selected arbitrarily. In time, other industry groups will receive intensive treatment. However, if anyone wishes to work within a particular group, he should inform Wm. C. Burnett, Committee Chairman.

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 Secretary Lou Pollack  
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 Altman, F. J.  
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Technical Director  
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Browne, G. W. Sperry Gyroscope Company  
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Brunette, G. Rome Air Development Center  
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1965-1966 Membership Roster

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