

ORLANDO SECTION NOTES



Volume VI, No. 2

October, 1970



WARREN A. BIRGE TO DISCUSS OPTICAL TRANCEIVERS AT MTT GROUP MEETING

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"If I had my way, things would be different." How many times have we heard this statement? Why don't some people ever get their way? The reason is clear; these people don't take the time to present their ideas to those people who could be effective in doing something about them. Think about the number of minority groups who always seem to get their way. Why are they so effective in achieving their goals? Because they have a cause, they believe in it and are dedicated to seeing it through. These groups are comprised of individuals who have a common goal and recognize that individually they have little chance of being heard.

Now how does this apply to electrical engineers? For many years since World War II we have been riding a crest of engineering demands whereby the number of job opportunities far exceeded the number of qualified engineers. As a result we have operated as individuals and have not felt the need for a strong professional organization comprised of dedicated people with a common goal.

Times have changed! We used to joke about "Engineers — high paid migrant workers." It's not so funny now. We see many of our colleagues out of work with no medical benefits, complete loss of pension vestments, and unprepared to enter a new field after specializing for 20 to 30 years to meet the demands of industry and the government.

This may all be true but what can we do about it? The solution is not simple nor can all the answers be developed by any individual. It is time for a strong **professional organization** which can address these problems, develop workable solutions, and finally follow through an implementation.

The IEEE can be restructured to be that organization. It already has a membership of 160,000 and would probably double in membership if it became an effective organ towards protecting and enhancing the socioeconomic well being of electrical and electronics engineers.

Notice, I said "the IEEE can be restructured." The present charter relates to a society which is primarily concerned with the dissemination of technical information. Before the IEEE can be effective as a professional society, the charter must be modified and the objectives of the society must be formally expanded. These changes will not come about as a result of a handful of letters, nor will it come about with a mass resignation of its members. The only effective means is to work from within the organization at the grass roots level which is the Section membership.

What can you do? Get involved! That doesn't mean you must become a Ralph Nader. Each person can be effective in his own way and the way may not become evident until you get involved. How do you get involved? Again, simple!

1. ATTEND IEEE MEETINGS, especially the section sponsored meetings which are aimed at the broad needs of the engineer regardless of his specialized discipline.
2. Attend the Executive Committee meetings held the first Wednesday of each month at 7:30 p.m. in the Hewlett-Packard Building.

3. Call one of the officers or any member of the Executive Committee and let him know your feelings.

Remember, the Section Officers and the Executive Committee need direction from the membership. Let's see you and hear from you on any matter. Don't stand by and let the other guy do it.

"For the many . . . when they meet together may very likely be better than the outstanding few, if regarded not individually but collectively. . . . For each individual among the many has a share of virtue and prudence, and when they meet together, they become in a manner, one man, who has many feet and hands and senses . . . for some understand one part, and some another, and among them they understand the whole." — Aristotle in Politics.

Joe Pullara, Chairman, Orlando Section

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Microwave Theory & Techniques—G-17

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MTT GROUP MEETING

Tuesday, October 20, 1970

GOLD KEY INN

Social Hour 6:15 p.m.

Dinner 6:45 p.m.

Meeting 8:00 p.m.

(Genesys Bldg. — Orlando Central Park)

Subject

**OPTICAL COMMUNICATIONS SYSTEMS FOR
LOCAL DATA DISTRIBUTION**

by

WARREN A. BIRGE

ABSTRACT

**OPTICAL COMMUNICATIONS SYSTEMS FOR
LOCAL DATA DISTRIBUTION**

The application of gallium arsenide laser diodes and light emitting diodes to short range, medium bandwidth commercial data distribution systems will be reviewed. Modulation and detection techniques and selection of key system parameters will be described. Predicted performance under a variety of atmospheric conditions will be discussed. The talk will be based upon work being performed under contract to the DATRAN Corporation.



ABOUT THE SPEAKER

WARREN A. BIRGE

Mr. Birge holds the Bachelor's degree with honors in Physics from the Johns Hopkins University, and the Master's degree in Electrical Engineering from the University of Florida. He has done additional graduate work in mathematics at Johns Hopkins.

Mr. Birge's professional career includes employment at the Nuclear Instrument and Chemical Corporation, Chicago, Illinois, the Argonne National Laboratory, Lemont, Illinois, the Link Division of General Precision, Inc., Palo Alto, California, and the Martin Marietta Corporation, Baltimore, Maryland and Orlando, Florida. His technical and management activities have included computer memory systems, display devices, navigation and guidance systems, pseudo-noise correlation techniques, precision internal timing devices, high resolution radar techniques and phased array antennas, and laser/electro optic devices and systems. He is currently Program Manager for development of the DATRAN Optical Transceiver.

Mr. Birge is a Senior Member of the IEEE and a member of the Optical Society of America.

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* * *

Electronic Computer—G-16

Secretary:	George Kirby	NTDC B. 646-5585
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Vice Chairman:	To be elected	

FALL SEASON FIRST MEETING IS SCHEDULED
FOR NOVEMBER 1970

* * *

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The newly elected officers are with Southern Bell Telephone and Telegraph Company. In order to assure satisfying the needs of all Communication Technology members within the Orlando Section, the new officers encourage suggestions for topics and speakers during the coming year.

**NOTICE TO THE ELECTRICAL ENGINEER CONCERNED WITH HIS
PROFESSIONAL INTEGRITY AND ECONOMIC WELLBEING**

Dr. V. Galindo

The present disastrous economic situation that exists in the engineering "profession" has caused many electrical engineers to realize that there is an **urgent** need for an organization to represent effectively the economic and professional wellbeing of the engineer in addition to the role of collecting and disseminating technical information. These electrical engineers further realize that the organization that should perform these functions is the IEEE. This organization is owned by the engineers and it must serve their needs.

It is therefore most urgent that the IEEE membership get together as soon as possible to formulate the appropriate objectives and means to achieve them.

The national Administrative Committee of the Antennas and Propagations Group should and must hold a **special evening session** during the 1970 IEEE/G-AP Symposium at Columbus, Ohio, September 14-16. Prominent National IEEE officers should be invited to observe with the intention of holding a similar session at the IEEE National Convention in March, 1971.

The National Administrative Committee of the Microwave Theory and Techniques Group has planned such a meeting for their 1971 IEEE/G-MTT Symposium in Washington, D. C. Discussion at the 1970 MTT Symposium elicited enthusiastic support.

Many local chapters of Antennas and Propagation, Microwave Theory and Techniques, and other groups have discussed and enthusiastically supported a second equal role for the IEEE.

A suggested format for such meetings should be on the theme:

"The Role of the IEEE in Improving the Professional Integrity and Economic Wellbeing of the Electrical Engineer — NOW!"

A few of the suggested programs that the IEEE could undertake and that should be discussed are:

- a) Pension Funds with immediate vesting.
- b) A program wherein the IEEE would take an active role in influencing the policy of the Federal Government and Industry; especially in such areas as smoothing the transitions between major changes in budgeting and retraining the engineers affected by the transitions.
- c) Cumulative seniority and fringe benefits that are company independent.
- d) Company profile information and a company "advisory" service — published in the spectrum, for example.

The purpose of holding discussion meetings is to:

1. Consider the above and other goals for the IEEE.
2. To generate support for a needed change.
3. To act NOW to implement this change.

For the past twenty-five years your Editor has watched the microwave industry grow and prosper. True there were minor dips but the trend was always up. Microwave antenna engineers were always at a premium. Salaries were going up and up. Then like the stock market everything collapsed. Companies that were hiring every engineer in sight were now having huge lay-offs. Unlike past recessions which hit one area but not another, this time the job situation is bad all over the country. Those who want to teach, graduate students, recent graduates with and without advanced degrees, summer employees, etc., were all in the same fix. You sent out resumes and no replies.

Why? What happened? What does the future hold for us? The answers are complex and your Editor doesn't claim that he knows the answers but I'll give you my thoughts on the matter.

For years the military budget grew and grew. As it grew so did the electronics and our microwave industry. The electronics content of our ships, our planes, our satellites and every weapon we could name, increased. With such a rising market companies were continually striving for larger and larger shares of the growing market. New microwave companies were starting and prospering even though all they had to offer were the products they learned to make at their former employers. They even, at times, went after their former employers' customers. But still everyone prospered because the market provided orders for all.

So what happened to this rising balloon? It burst. The cost of the Viet Nam war precluded the development of new weapon systems. Cuts in the DOD budget meant slow-downs and the elimination of some programs. Overruns on some procurements drained money from others. Problems on the home front, our environmental problems, welfare and crime, are competing for the same dollars we want. It was bound to happen.

But what hurts most is the suddenness with which it happened. No planning. No gradual withdrawal. The government which for years caused our industry to grow should have done something to soothe the pain. Engineers should be retrained to work on some of our other national problems. But still nothing is being done.

Here is an opportunity for IEEE to step in and help. It's a new role for IEEE. So far all we've heard from headquarters are some discussions. If you want IEEE to step in and try to help, write to headquarters in New York and give them your views. It's my prediction that if IEEE doesn't act soon the total membership will fail to increase for the first time in years; in fact we may even see a decline. Like the stock market, like the job situation, without some attempt to reverse the tide, IEEE itself may also suffer. I hope we do something before it's too late.

H. N. Chait, Editor
 Aerospace Corporation Newsletter
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POWER – G-31
INDUSTRY & GENERAL APPLICATIONS – G-34

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ORLANDO SECTION NOTES



Volume VI, No. 3

November, 1970



By James L. Gay
"CONCENTRATION"

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	Jim Walter	838-2071

CHAIRMAN'S CORNER



JOE PULLARA

Our first Section Meeting on 30 Sept. 1970 was a qualified success. The program was considered excellent by those who attended. The preparations were very good, and we were very honored and pleased to have Chuck Cambias, our Region III Director, address the Orlando Section. Unfortunately the key ingredient needed to make a good meeting was lacking, YOU. Would you believe only 6 percent of the Orlando membership turned out

for the meeting? It's very difficult for me to understand why we had such poor attendance for such a timely and important meeting, which was designed to address the controversial issue, "What Does IEEE Have to Offer?" I can't believe that 94 percent of the membership fully understands the IEEE and has no opinions or suggestions for improvement. I am left with the opinion that 94 percent of the membership doesn't really care what happens to the engineering profession. Perhaps this indifference reflects the state of our engineering economy in the Orlando area. A similar meeting was held in San Francisco and the auditorium wasn't large enough to hold the crowd. Don't wait until it's too late to get involved in your society. We have an excellent base which CAN be expanded to meet the demands of the profession today. Let's hear your voice. Write to me, call me, and most important come out to the meetings.

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Vice Chairman:	Paul Little	NTDC B. 646-4483
Secretary:	Gerhard Bergman	Dynatronics B. 323-1620

Election of officers will be held at the November meeting. Members will be notified by mail. Also consult your company bulletin board.

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MTT GROUP MEETING**Tuesday, November 17, 1970**

GOLD KEY INN

(Genesys Building — Orlando Central Park)

7100 S. Orange Blossom Trail — Orlando

Social Hour	5:45 p.m.
Dinner (or from menu).....	6:15 p.m.
Program	7:30 p.m.

“Parametric Amplifiers — Their Improvement and Application”**ABSTRACT**

The characteristics of both broadband and narrowband paramps will be discussed briefly. Emphasis will be placed on the narrowband tunable paramp. How to improve noise figure, stability, and size will be discussed along with a demonstration of techniques for fast repairs of field units with actual operable equipment. Systems applications and the effects of adjacent devices, i.e., circulators, switches, etc., will be discussed. A question and answer session will follow the presentation.

ABOUT THE SPEAKER

Beryl Barber is the president of Sonoma Engineering and Research, Inc., at Santa Rosa, California. He obtained the B.S.E.E. and M.S. from Kansas State University. He joined the Varian Corporation in 1961, and was engaged in the research and development of parametric amplifiers along with many other devices both high and low power. In 1963 he joined Melabs at Palo Alto, as the Branch Manager of the Microwave Semiconductor Group, where he continued to work with parametric amplifiers. In 1966, Mr. Barber formed the Sonoma Engineering and Research Company at Santa Rosa, which has many microwave devices as product lines. Recently (February 1970), Mr. Barber's company acquired the entire parametric amplifier facilities of Melabs.

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Volume VI, No. 4

December, 1970



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CHAIRMAN'S CORNER



JOE PULLARA

Jim Gay (Vice-Chairman) and I were honored and pleased to attend a reception on November 7 given by Region III for the IEEE Board of Directors who were meeting in Hollywood Beach, Florida. This Board is comprised of the highest elected international officers of IEEE including all Region Directors from within and outside the USA. I took advantage of this opportunity to speak with Dr. Granger (President of IEEE) and Dr. Mulligan (President-elect of IEEE) regarding expanding the charter of IEEE into areas which will make it more of a Professional Society. I presented Dr. Granger with a petition to this effect drawn and signed by over 50 engineers from the Naval Training Devices Center which was enthusiastically accepted and discussed.

Prior to the reception, the officers of all Florida sections, from Daytona Beach south to Miami, met for 4 hours. The agenda of this meeting included items ranging from speaker exchanges to discussions on the need for a stronger professional society. Without exception, the consensus of opinion regarding IEEE's need to expand its chartered activities to satisfy the "other" needs of engineers were in general aligned with the opinions expressed by your chairman in the October issue of the Orlando Section Notes.

As a result of these meetings I was left with the strong impression that there is a very strong movement, at least nationally, to expand the role of IEEE. I am also convinced that under the leadership of Dr. Mulligan we will see some significant changes in 1971.

As an example, IEEE has made a detailed study of the Portable Pension Plan and has presented a detailed report of this study in the November issue of Spectrum. Although the results of the study show that it is not feasible for IEEE to implement such a pension plan, the results of the study have been turned over to the Engineers Joint Council for consideration and possible action. The Engineers Joint Council includes engineering societies of all disciplines and is in an excellent position to recommend and actively support legislation needed to implement a meaningful Portable Pension Plan. I feel that such a plan will be instituted within the next two years thanks to the efforts and enthusiasm of the IEEE members.

JOHN F. MORRISON — LIFE MEMBER OF IEEE

Effective January 1, 1970, Mr. Morrison will become a Life Member of IEEE, "a status reserved for those who have had a long association within both the profession and the IEEE."

Mr. Morrison, who was elected to the Grade of Fellow in 1951, is currently the Bell Telephone Laboratories Resident Manager for the SPRINT Program at Martin Marietta in Orlando. His career in Engineering began in 1923 when he was an Engineer for Federal Telephone Company in Buffalo, New York. Since that time he has written 15 papers on broadcast transmitters and antennas; he is referenced 5 times in the Radio Engineers Handbook — Terman; and has received 7 patents. Mr. Morrison has served in many IEEE offices both on the section and international level.

Mr. Morrison resides with his wife Sue in the Bay Hills area and has been a resident of Orlando since 1963.

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Electronic Computer—G-16

Nominated Officers

Chairman:	George Kirby	NTDC B. 646-5585
Vice Chairman:	Paul Little	NTDC B. 646-4483
Secretary:	Gerhard Bergman	Dynatronics B. 323-1620

DECEMBER MEETING

Check Your Bulletin Board

JANUARY MEETING

MINI-COMPUTERS
by
Westinghouse

This Will Be a Joint Meeting With ASME on
21 January 1971

Microwave Theory & Techniques—G-17

Chairman:	T. R. Page	Martin Marietta B. 855-6100 X3197
Vice Chairman:	J. M. Schuchardt R. 671-4877	Martin Marietta B. 855-6100 X4514
Secretary:	J. R. Thornton R. 647-7309	Martin Marietta B. 855-6100 X3318

Communication Technology—G-19

Chairman:	Tom Wallace R. 422-2524	S.B.T. & Tel. Co. 241-9031
Vice Chairman:	Bill Miller R. 295-3369	S.B.T. & Tel. Co. 422-9047
Secretary:	Harold Lindsey R. 293-5665	S.B.T. & Tel. Co. 423-7071

KISSIMMEE BAR-B-Q

Theme
"THE ROARING 20's"

Place
COMMUNITY HALL, KISSIMMEE

Date
29 JANUARY, 1971

Tickets Will Be Available 10 January, 1971

Aerospace & Electronic Systems—G-10

Chairman:	Robert Marshall R. 855-2543	Martin Marietta B. 855-6100
Vice Chairman:	Robert Mallison	Martin Marietta B. 855-6100
Secretary:	William W. Warren	Martin Marietta B. 855-6100

POWER — G-31

INDUSTRY & GENERAL APPLICATIONS—G-34

Chairman:	Dean Hall R. 294-8429	The Coca-Cola Co. Foods Division B. 967-1131
Program Chairman:	Tom Moulton R. 682-3288	Wellman-Lord, Inc. B. 646-5011
Secretary:	Ronald E. Meade R. 671-2525	Florida Power Corp. B. 644-6142

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ORLANDO SECTION NOTES



Volume VI, No. 6

February, 1971



CARL BLAKE
1971 MTT National Speaker
to address Orlando MTT Group on
Application of Solid State Microwave Power Sources

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Published Monthly by the Orlando Section except during the months of July and August.

Inquiries concerning advertising and/or announcements should be forwarded to Mr. J. C. Pullara, 1104 Glen Arden Way, Altamonte Springs, Fla.

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CHAIRMAN'S CORNER



JOE PULLARA

submit a candidate for this honor.

National Engineers Week is scheduled for the week of 20 to 27 February 1971. The Central Florida Chapter of the Florida Engineering Society in cooperation with more than 15 other local engineering societies is planning a series of activities aimed at drawing attention and recognition to the engineering profession. These activities include spot television and radio announcements, newspaper articles and a speakers bureau. This year the week's activities will be kicked off with a Banquet during which a local engineer will be honored as the Engineer-of-the-Year. All of the 15 engineering societies are invited to submit

J. W. Dees and his Awards Committee have selected Dr. James J. Regan of NTDC as the IEEE candidate for the FES Engineer-of-the-Year honor. As in the past, our candidate is the Orlando IEEE Engineer-of-the-Year and he will be honored as such at the Annual Banquet in June. It may be of interest to note that IEEE has submitted a winner four times out of the seven years the award has been given. I believe we have a winner again this year. Come out to the banquet and support your candidate. Check the announcement on page 5 for details.

A nominating committee to select the Orlando Section Officers for next year was appointed. The committee is comprised of Melvin J. Taylor, Chairman; James M. Walter, Jr., Harold Rosenblum and Dr. W. Bruce Mathews. Nominees selected by this committee will be presented in the March issue of the Section Notes. It should be noted that any Orlando Section member can be nominated for a section office by submitting a petition (signed by 15 section members) to me on or before 15 April 1971.

I'd like to draw your attention to the advertisements carried in the Orlando Section Notes. These ads make it possible to provide this high quality monthly publication to all of our members in the Central Florida area. May I suggest that you let these sponsors know that you have seen their ads and you appreciate their support of our activities. If you know of any other prospective clients please let me know.

Several Group Chapter Chairmen have indicated that attendance at their meetings is poor in spite of excellent subjects and speakers. These men go to great lengths to provide interesting programs. The success or failure of these meetings depends on your attendance. When the attendance is low the Officers naturally assume they have failed you. You elected them to an office, entrusted them with a responsibility and then don't bother to take advantage of the fruits of their labors. I urge all of you to take an interest in your technical groups and section; attend the meetings and let us know your preferences.

Electronic Computer—G-16

Chairman:	George Kirby	NTDC B. 646-5585
Vice Chairman:	Paul Little	NTDC B. 646-4483
Secretary:	Gerhard Bergman	General Dynamics B. 323-1620

PROGRAM

Thursday, February 18, 1971

7:30 P.M.

Genesys Building, Orlando Central Park, 7300 Lake Ellenor Drive
"ARTS III, AUTOMATED RADAR TERMINAL SYSTEM"

Mr. Jim Seaborn

Resident Manager, UNIVAC, Government Systems, Tallahassee, Florida

MEET THE SPEAKER DINNER

Gold Key Inn, 7100 S. Orange Blossom Trail

Cocktails 5:45 P.M.

Dinner (Order from Menu)..... 6:15 P.M.

Please call one of the officers for reservations no later than 4:00 P.M., 17 February 1971.

ABSTRACT

By late 1971, the ARTS III Air Traffic Control System will have been installed into some of this country's busiest airports. As prime contractor for ARTS III, UNIVAC provides overall systems management and coordination. Mr. Seaborn will present a description of UNIVAC's computer and how it interfaces with the Beacon, Radar, and display systems.

P.S. — Attendance at the Dinner Segment is not required for attending the Program Segment.

ENGINEERS' WEEK DINNER

Saturday, February 20, 1971

Hilton Inn — South

Dinner — Dancing — Awards

Speaker to be announced

SOCIAL HOUR 6:30 P.M.

DINNER BUFFET 7:30 P.M.

DANCING 9:00 P.M.

Tickets \$6.50 Each (Tax & Tip Included)

Contact: Jim Wiltse — 855-6100, X2932

Jim Schuchardt — 855-6100, X4514

Engineers' Week Theme:

"Engineering . . . To Improve the Quality of Life"

Microwave Theory & Techniques—G-17

Chairman:	T. R. Page	Martin Marietta B. 855-6100 X3197
Vice Chairman:	J. M. Schuchardt R. 671-4877	Martin Marietta B. 855-6100 X4514
Secretary:	J. R. Thornton R. 647-7309	Martin Marietta B. 855-6100 X3318

"APPLICATION OF SOLID STATE MICROWAVE POWER SOURCES"

By Carl Blake

Leader, M.I.T. Lincoln Labs Phased Array Group
(1971 National M.T.T. Speaker)

The current state-of-the-art of microwave power transistors, avalanche diodes and of transfer electron devices will be reviewed. Device characteristics and special features or limitations of each class of device will be presented. Examples of present-day commercial and industrial applications will be cited. An assessment of the future impact of these devices on the microwave industry will be postulated.

Tuesday, February 16, 1971

Technical Program — Genesys Building (Orlando Central Park)
Dinner & Social Hour — Gold Key Inn

Social Hour	5:45 P.M.
Dinner (order from menu)	6:15 P.M.
Program	7:45 P.M.

Aerospace & Electronic Systems—G-10

Chairman:	Robert Marshall R. 855-2543	Martin Marietta B. 855-6100 X3853
Vice Chairman:	Robert Mallison	Martin Marietta B. 855-6100 X4593
Secretary:	William W. Warren	Martin Marietta B. 855-6100 X2524

"AIR POLLUTION SENSING SYSTEM"

By John Bryant

Environmental Protection Agency, Division of Air Quality
Cincinnati, Ohio

Discussion Highlights: Types of Pollutants; Sources and Usual Levels; Measurement and Transmission Methods and Devices; and Corrective Measures.

Tuesday, February 9, 1971

Gary's Duck Inn

SOCIAL HOUR	6:15 P.M.
DINNER	7:00 P.M.
PROGRAM	8:00 P.M.

Dinner: Steak & Lobster — \$4.25 Complete

Please call one of the officers for dinner reservations prior to noon
Monday, February 15, 1971.

POWER – G-31
INDUSTRY & GENERAL APPLICATIONS – G-34

Chairman:	Dean Hall R. 294-8429	The Coca-Cola Co. Foods Division B. 967-1131
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Communication Technology – G-19

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