

Vol. 7, No. 10
June, 1959

The PULSE *of*

LONG ISLAND



IDLEWILD TRAFFIC CONTROL CENTER

SATURDAY—JUNE 6, 13, 20, 27



We suspect that AIL scored a "first" at the IRE Show—since this was probably the first time that an exhibitor has ever used the convention-goers as subjects for a scientific experiment. Win Sullivan, Howie Abrams, and Bill Carberry have been working with an interesting device that you may have seen at the Show.

TISSUE RESISTANCE MONITOR

Over the years there has been a good deal of psycho-physiological literature concerning changes of skin resistance due to the effects of physical or psychological stress. The Department of Medical and Biological Physics has developed a Tissue Resistance Monitor (Figure 1) for the unambiguous measurement of skin resistance.



FIGURE 1

Our method of measurement fulfills a need for an accurate and reproducible measure of subjective response in psychiatry, psychology and other fields relating to stress reaction.

Skin resistance can be changed during a variety of situations; alertness, anxiety and stress are generally accompanied by resistance decreases; drowsiness and sleep are accompanied by resistance increases. The Tissue Resistance Monitor can sensitively measure such resistance changes since the instrument's nine expanded ranges are sensitive to 0.25% of full scale resistance.

The IRE show afforded us the opportunity of measuring the resistance levels of a large group of people. The experiment consisted of subjects placing their palms on specially designed electrodes. A graded series of response-arousing questions such as, "Can you mentally multiply 35 x 45?"

"Do you really think you know something about engineering?", "Are you anxious about the responses shown during the previous questions?" The reactions to these questions were recorded for analysis back in the laboratory.

Although the analysis is not yet complete, the conclusions we have arrived at so far are:

1. There are three types of reactions: Hypersensitive, normal and "tranquil."

2. Neither the length of time at the show nor the time of day had appreciable effect on the strength of responses obtained.

3. The average level of resistance obtained was in the range of 25-50 k ohms.

Figure 2 is an example of the hypersensitive response in the order of magnitude of 5%. The chart scales are as indicated and the skin resistance change is demonstrated quite nicely at every presentation of a question. The "tranquil" reaction, where no discernible response is indicated, is in the order of magnitude of 1% or less. A subject showing this latter type of response was checked to see if his heart was still beating.

The booth attracted large and interested crowds. This attendance enabled us to test 200 subjects in the four days at the show, 50 of whom were women. In Figure 3, the young lady had just been asked the question, "Do you cheat on your income tax?" As you can see, the experiment created a good deal of amusement for the subject as well as the spectators.

For the most part we had little difficulty in obtaining volunteers. However, there were times when we had to coax some individuals to participate. The reasons given for their initial hesitation were: 1. they were afraid of getting shocked or 2. they were frightened by the gauze electrode pads in our sparkling glass container.

With the data obtained from these experiments much will be learned about the variability of response to certain situations



FIGURE 3

where a measure of subjective response is indicated. At the present time we have several Tissue Resistance units in field use, one of which is in a U. S. Navy project concerned with "Man in Confinement."

Among other efforts by the Department of Medical and Biological Physics some of our major projects include:

1. An instrument for measuring the response of the pupil of the eye, the amount of contraction or dilation, and the dynamics of these responses relative to a host of physiological, psychological and pharmacological stimuli.

2. A combination of microscopy and electronics to produce a microscanner capable of sensing the sizes and absorption of the nuclei of cells, particularly applicable in the fields of cancer and malaria detection.

3. A device employing a technique from track-while-scan radar, to detect fetal heart rate. This is useful to obstetricians in learning about the status of the fetus prior to or during delivery.

4. The development of a system for monitoring the electrocardiogram during exercise. This system, initially developed for use in aero and space medicine, has been so successful as to merit further study for inclusion in routine cardiology.

5. A study project to investigate the use of computers as aids in the diagnosis of heart disease. This work includes the entering of cardiac variables on magnetic tape, with subsequent signal transformation into a format suitable for computer data analysis. The aim of this project is to provide the cardiologist with sufficient quantitative information upon which to base a diagnosis.

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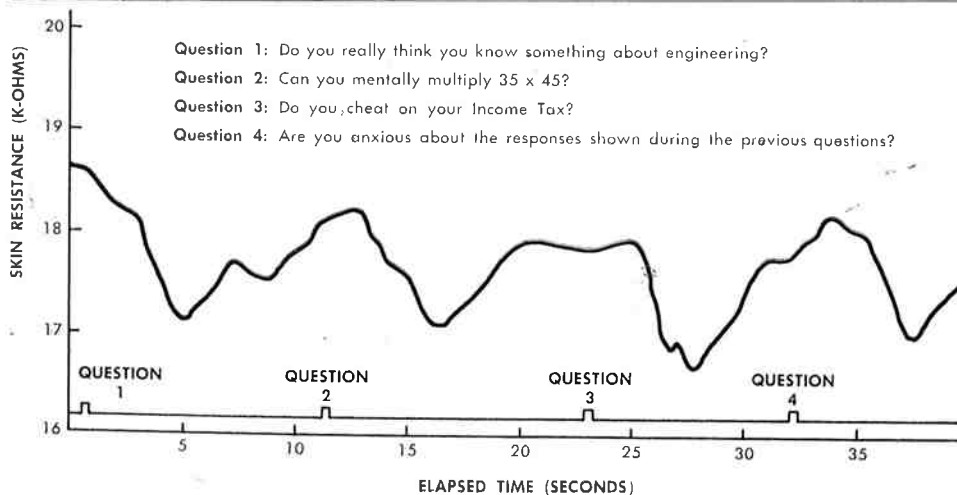


FIGURE 2

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The PULSE

IDLEWILD FIELD TRIP

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You'll see the traffic pattern over these many metropolitan areas. You'll learn the routing methods and how continuous monitoring is used to avoid air-to-air collisions and minimize congestion in this busy area. You'll see these zealous guardians of air safety at their daily tasks, plus many other interesting things at this busy air terminal.

For this behind the scenes tour send a card requesting your reservation to Mr. R. Klose, Filtron, Inc., 131-15 Fowler Avenue, Flushing, L.I., N.Y. indicating your first and second choice date or that you have no preference. Dates are June 6, 13, 20 and 27. It's first come, first served and limited to IRE members only.

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NEW ENGINEERING CENTER??

Herbert S. Kulik

Each and every industry has its own particular requirement for raw material. The steel mills thrive on iron ore and coke, the stockyards consume cattle and pigs, the electronic industry subsists on trained engineering talent.

Electronics, today considered very big business, hardly existed before the nineteen forties. In its early stages, New York City with its relatively large reservoir of engineers, provided the spawning area for many of today's leading electronic firms. As these companies grew, many were forced to move to Long Island to obtain needed room for expansion. Their engineers, tiring of commuting to work, soon followed in their wake. As the pleasures of "country living" became known more and more engineers bought homes in suburbia until companies which had remained in the metropolis were forced to relocate in Long Island so that they could compete for a labor force. This process still continues and appears to be irreversible.

Presently, there are well over 3700 electronic engineers living in Long Island. They are employed in some of the world's outstanding electronic and aviation corporations. Superficially the electronic industry seems well established. Unfortunately this is not entirely true. A serious flaw exists in this structure. It is a deficiency which must be recognized and corrected at once if atrophy and gangrene are to be avoided.

This flaw occurred when the electronic companies and their engineers transplanted to Long Island without taking with them the institutions of education which play so important a role in maintaining the vitality and competence of the technical community.

In an industry in which new ideas become obsolete almost as soon as they are borne, in which new components and techniques are being developed at a truly fantastic rate, it is an absolute necessity for the en-

gineer to devote a certain amount of his time to "keeping up with the state of the art." This absorption of information, this indispensable fertilization of the brain cannot be accomplished by osmosis or by reading magazines. It requires attendance at a graduate school of engineering and participation in the activities of the various Professional Groups of our Long Island I.R.E. section. And now let us examine the facilities available for these purposes.


Long Island, the cradle of the electronic industry, can boast of many things. New parkways, beautiful beaches, thousands of modern homes, very high per-capita income, tremendous shopping centers, wonderful waters for boating and fishing. In the midst of all of this plenty there is not one first rate graduate school of engineering or a center at which an Engineering Society can hold its professional activities.

Although some graduate courses are available through Brooklyn Poly's extension program at the Mineola High School or at Adelphi or Hofstra the engineer who wishes to pursue a well integrated graduate course of study at night is forced to seek this in one of the colleges in New York City. Only those who have attempted this and survived are qualified to testify to the stamina and fortitude required. How many more engineers would attend graduate school were the traveling problem eliminated by the existence of better graduate school facilities on the Island is not known—however experience and reason tells us that the number must be large.

The lack of graduate facilities on Long Island has serious consequences. The existing engineering talent is not being developed to its highest degree of proficiency. This not only reduces the absolute potential of our local engineering man-power—it also makes Long Island less attractive to the young engineer seeking employ-

(Continued on Page 12)

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MEETING NOTICES

FIELD TRIP

Saturdays, June 6, 13, 20, 27

IDLEWILD TRAFFIC CONTROL CENTER

PGEC

Thursday, June 4, 1959 at 8:15 P.M.

"DIGITAL COMPUTER FOR SWITCHING APPLICATIONS"

Dr. Samuel Lubkin

Remington Rand Building, 10th Floor Auditorium

315 Fourth Avenue, New York, N.Y.

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Thursday, June 11, 1959 at 8:00 P.M.

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just how long I'm not so sure.
And though you'll swear it could
not be

I times R may not be E.

Dear God on high what would we do
if we didn't place our trust in
You?

Commentary on Edwin H. Land's article
on "Experiments In Color Vision" which
was printed in the May 1959 edition of
Scientific American.

—Herb Kulik.



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ON THE SPOT . . .

By Norm Potter

John L. Heins (VA '32), Chief Electronics Engineer Missile Systems Division of Republic Aviation Corp., first became interested in radio in his native W. Islip. An ardent Ham from 1924 to date (W2AV), he was chagrined to find smugglers off the coast using his call letters and frequency. The FRC told Heins that they were helpless because a direction finding system did not exist in the 4 to 6 megacycle band. In his third year of Electrical Engineering at Brooklyn Poly, Heins immediately set about accomplishing the then impossible, so impressing Government officials that the college junior was offered an extraordinarily good job with the U. S. Department of Justice. This \$50 a week job (at a time when the average engineer was earning \$15 a week) convinced Heins that he had better skip his last year of college and seize the opportunity.

His first responsibility was to set up an East Coast DF network to combat smugglers. He was subsequently loaned to the Royal Canadian Mounted Police to design and supervise the Maritime Division of communications and DF systems.

Heins came back to L. I. in 1941 as a "Blind Landing Engineer" with Sperry. He designed a 2600 megacycle and 5000 megacycle ILS, the first with direct crystal control. In '44 Heins became Sperry Radio Department Head responsible for shipboard and airborne microwave communications, ILS, Omni, electronic counter-measures, missile guidance receivers and destructor systems, R & D flight and field tests. He was the first to go into the FM area for railroad radio.

He moved from Sperry to Federal Telecommunications as Executive Engineer in charge of the Great River, L.I. Lab, working on many projects which are still classified. One of his accomplishments which can be mentioned was his development of a method for checking, in 10 seconds, a time source with an accuracy of one part in a billion.

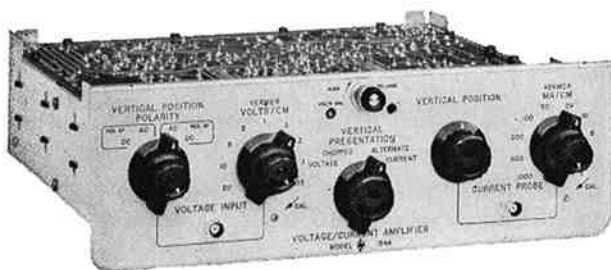
In 1955 he became Chief Engineer for Murray Mfg. Corp., and in '57 Assistant to the President at Control Instrument Corp., a subsidiary of Burroughs.

In 1958 he moved to his present position with Republic Guided Missiles where he presently has complete

(Continued on Page 8)

NEW INSTRUMENTS

DISPLAY V AND I WITH THE -hp- 154A

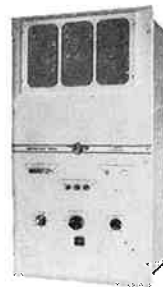


We are pleased to present a versatile dual-channel amplifier designed for use with the **Hewlett-Packard** Model 150A/AR Oscilloscope. This new instrument, the -hp- Model 154A Voltage/Current Dual Channel Amplifier, provides a clip-on current probe for one channel and a high impedance voltage probe for the second channel. By means of electronic switching between channels, either by alternate sweeps or by 100 KC chopping, direct comparison of voltage and current waveforms may easily be obtained. This happy marriage of voltage and current probes now permits an unusually rapid and convenient means for displaying phase angle, transients, power admittance, impedance and similar phenomena. Of course, either the current or voltage channel may be used independently.

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FREQUENCY OUTPUT	360-440 cps, $\pm 1\%$ regulation
POWER OUTPUT	1 KVA
SIZE	37" x 17" x 15" (less than 6 cu. ft.)

rmc

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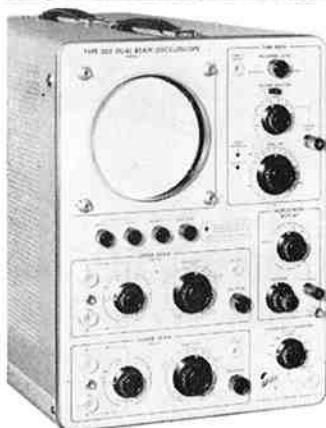
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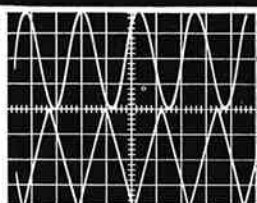
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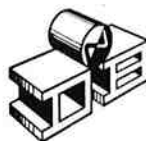
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BROOKLYN POLY TO MOVE TO LONG ISLAND

For the past few years Brooklyn Polytechnic Institute has been offering much welcomed graduate courses through an extension program presently operating at the Mincola High School. Realizing that this set-up is inadequate for this area Brooklyn Poly is considering the establishment on Long Island of a self-sufficient and contained graduate school of engineering.

In a recent interview Dean Charles Schaffner stated that this graduate school would have a full time staff and would take care of both evening and full time graduate students. The School could be expected to offer course of study in the following fields — electronics, aeronautics, rocket propulsion and nucleonics. Dean Schaffner further stated that the Microwave Research Institute, operated by Brooklyn Poly, would be moved to the site of the new graduate school in line with the policy of making this school a center of research work in the electronic field.

According to Dean Schaffner Brooklyn Poly intends to break ground for the building within the next six months. The site for the school has not yet been finally selected. It is the hope of Brooklyn Poly to acquire 25 acres for this purpose. The locations being considered lie between Mitchel Field and Huntington and it is felt that a school in this vicinity would service students now out of convenient reach of the schools in the metropolitan area.

ON THE SPOT

(Continued from Page 6)

technical and administrative responsibility for all electronics development and engineering. In addition to his other duties, he personally conceived a new and startlingly original Air Defense System. He holds many patents and is the author of a number of technical papers.

• RANDOM PULSES •

NORM POTTER



DR. REINHARD K. HELLMANN (M '50), Assistant V.P., Hazeltine Electronics Division, has been conducting exploratory meetings with the Long Island Electronic Manufacturers' Council to determine areas of common interests with Long Island IRE. Specifically it was felt the two groups could work together to promote industrial importance of L. I. in the national electronics picture. Further, LIEMC can logically support the 1960 Symposium through exhibits, can cooperate with IRE in planning an Engineering Center, etc.

Dr. Hellmann has been requested by J. Gregg Stephenson (SM '50), new L. I. Chairman, to remain as Liaison Representative of the Section with other technical bodies including LIEMC.

STANLEY I. KRAMER (SM '55) has been appointed Chief, Electronics Division of the Fairchild Astrionics Division, Research Department.

MORTON KRONENGOLD (M '56) in early May resigned as Engineering Manager of Telechrome Automation Division in Amityville to accept the post of Director of Engineering for Centronix in Miami, Fla. Formerly Supervisor of the Instrumentation Department of the Fairchild Engine Division, Kronengold assumed his new duties late in May. His family will remain in this area until the close of the school year.

ROBERT C. CONSTABLE (M '55) is Project Engineer for Teletronics Laboratory in Westbury. His principal project, after receiving his BEE in '52 from Brooklyn Poly, has been the design and development, under supervision of Robert S. Marston (M '44), President, of an automatic electronic inspection device that can inspect beer bottles immediately after washing. After a successful demonstration and test, the first machine, which can inspect a flow of empty cleaned bottles at the rate of 500 per minute, has been installed at the Ballantine brewery.

A native of these parts, Constable served in the USAF and after special training was NCOIC setting up and operating a transmitter station in Japan and later a floating aircraft radio repair shop. After the war he worked for the Underwriters Lab testing electrical components, and for the Atomic Energy Commission in developing a new device to safeguard AEC personnel.

ROBERT C. LOCKWOOD (SM '57), V.P. and Chief Consulting Engineer of Instruments for Industry, has recently been assigned a patent on microwave transmission networks which has increased the upper limits of band width for flat gain response.

ALAN L. RICH (SM '57) is Senior Research Engineer, Defense Products Division for Fairchild Camera & Instrument Corp. Formerly he held a similar title with Teletronics in Westbury. Born in Brooklyn, he served as Bombardier Cadet in WW II, later graduating from Pratt Institute in '49 in Electrical Engineering.

As a civilian, Rich taught at the Postgraduate General Line—USN Academy, Newport, R. I. The Korean War took away his students, reducing him to writing texts and course outlines. He resigned his post to work in the design and development of radar test equipment in the Laboratory for Electronics, Boston. In '54 he returned to L. I. to work for Arma, first in research, then in the digital computer group.

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Proposal for Mismanagement of Weapons System 000-L

1. GENERAL.

A detailed reference to the large number of programs which we have mis-managed would be beyond the scope of this proposal (see report 789-2, AF Board of Inquiry; see also report of Congressional Investigation Committee, 1209-A). We feel, however, that the experience gained from these miserable failures puts us in a strong competitive position since it is unlikely that these mistakes will be repeated. Our competitors may have a greater number of failures, but we would like to point out that our errors were made on larger and more important projects. Furthermore, we have absolutely no experience in the specialty areas required for this design and will therefore approach the problem without prejudice.

2. ORGANIZATION.

We have reviewed this question carefully and find that we are unable to determine the precise instant of time at which the customer desires to see the organizational structure, and are therefore at a loss as to how to present it. We have investigated the use of high speed movie cameras and magnetic recorders, as means for presenting a changing organization, but feel that these do not meet the requirements. We suggest a time during the interval from 0200 to 0700 on a Sunday would be best as experience has shown that the rate of change is at a minimum during this period.

We have found on recent proposals that our key personnel received offers from one of our competitors a few days after the submission of a list of personnel. Since there seems to be evidence of a security leak in the customer's organization, we request that a need to know be established before this information is supplied.

3. TECHNICAL APPROACH.

Our plan for this project is to hire engineers from the companies which lose the competition. Our technical approach will, therefore, be determined by these people and can be obtained from our competitors' proposals. We do have a few guiding principles. We have found that on a project of this nature, about 12-18 months are required to catch up with the art. This time is spent in visiting other companies, universities, and test sites and in reading classified reports and Aviation Week. This period is followed by a six months' study phase. At the end of this time it is usually desirable to start traveling again because of the extremely rapid changes that take place in the State-of-the-Art.

4. SCHEDULE.

In order to improve the appearance of our proposal the art department has made up a seven color schedule using stereoscopic plexiglass overlays. The dates in this schedule represent a weighted average between the estimates of the Research & Sales Divisions (they are the Sales Division figures). In any event, company practice is to terminate a project when the personnel are needed on a new and more profitable contract.

5. SUBCONTRACTS.

It is a firm company policy to never let a dollar get out of the house.

6. COST INFORMATION.

Engineering—we do not plan to spend much here. We have found that engineers make changes, and this reduces profits.

Facilities—this is a large item. We view this contract as an excellent opportunity to build up our plant.

Testing—no charge has been put in since we do not plan to test. In the past, test programs have shown up faults and caused cancellations of contracts years before the mistakes would have been discovered in the field.

Entertainment—this item was inadvertently omitted from the request for proposal; we have added it.

7. CONTRACT FORMS AND PROFITS.

An exhaustive study will be made during the first six months of the contract to consider these factors. All of the modern techniques of operational analysis, game theory, and high speed computing will be applied to the problem of profit optimization.

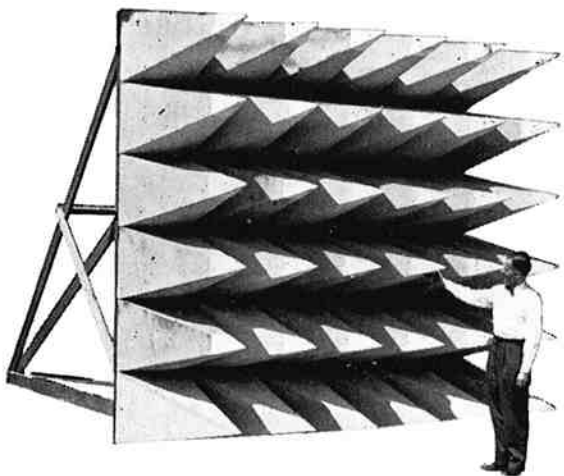
Key points in this study will be legal loopholes, tax dodges, and evasively written clauses. It is expected that several nationally known consultants will be retained for this work due to the overriding importance of the problem.

8. PHYSICAL RESOURCES.

An excellent survey of our physical facilities is contained in the Receiver's Report prepared during our most recent bankruptcy proceedings. A copy of that report is appended.

9. ADDITIONAL FACILITIES REQUIRED.

It is our belief that an important project such as this should not be carried out in our shabby plant. We plan to use government furnished facilities exclusively. We would like to point out that several directors of the company have excellent property which they would be willing to sell to the government for the erection of these facilities.



50 Mc

Eccosorb CHW is mounted on a metal screen wall. Tests at RCA, Cherry Hill, showed less than 2% reflection at 50 Mc and below 1/2% from 70 Mc to microwaves.



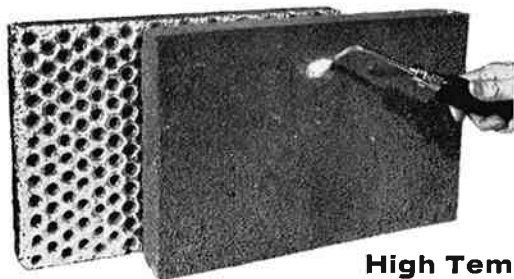
Caps

These fit over radiating antennas to terminate them in "free-space". They are lined with an appropriate Eccosorb. Cap at left is for Bell Labs; at right for GE.

Eccosorb

Microwave UHF-VHF Absorbers

50 Mc thru 50,000 Mc

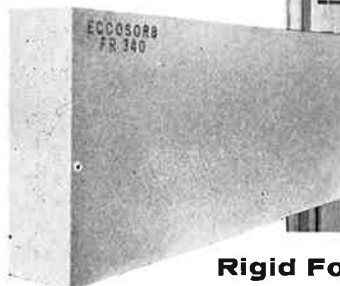
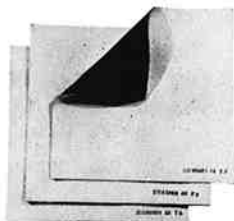


High Temp.

Eccosorb HT will withstand 1200°F. and absorb over 98% of incident energy. It is used where high power levels are involved.

Flexible

Eccosorb AN is extremely thin, light in weight and broadbanded. It can be draped over objects or applied to compound-curved surfaces.



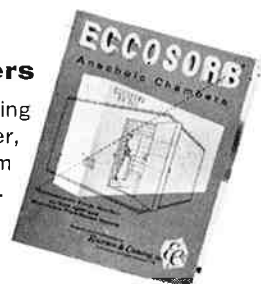
Rigid Foams for Darkrooms

Applied to the walls of a room, Eccosorb FR transforms it into an effective antenna test range. A complete room installation made by — and in use at — North American Aviation, Columbus, Ohio.

Anechoic Chambers

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NEW ENGINEERING CENTER???

(Continued from Page 3)

ment in an area where he can continue with his education. A graduate school, in addition to improving the caliber of our engineers and bringing more engineers into our labor pool, would by its very existence generate new companies and attract more business to this vicinity. Is there any reason why a "Long Island Institute of Technology" would fail to benefit Long Island any less than M.I.T. has benefitted Boston or Stanford University has benefitted the San Francisco peninsula? I think not.

In addition to the 3700 I.R.E. members on Long Island there are approximately 5500 members of other professional engineering societies. These groups have many problems similar to ours. Recently a movement has been started to coordinate the activities of these engineering societies in the hope that a unified effort can be made to solve these mutual problems. The first exploratory meeting was held on January 29, 1959 under the temporary chairmanship of Mr. S. Uman of the N. Y. State Society of Professional Engineers. Dr. R. K. Hellman, our past chairman, represented the I.R.E. at this meeting. One of the joint projects considered was the acquisition of an Engineering Center on Long Island that could serve as the focal point for the activities of all of these societies and which might also become the nucleus of a Long Island graduate school of engineering. This center, besides serving to attract more of us to the meetings of our own Professional Groups would undoubtedly broaden our scope by making it simpler to attend the meetings held by other Professional Societies.

Although the plans for this center are far from being solidified we can hope that the building will contain a technical library, meeting rooms, office and secretarial facilities, exhibit rooms and possibly even club-type accommodations.

Representatives of the various en-

gineering groups met for a second time on May 7, 1959. Because of the recent death of Mrs. Uman the meeting was presided over by Mr. Irving Deutsch of the N. Y. State Society of Professional Engineers. Our new chairman, Gregg Stephenson, attended the meeting on behalf of the I.R.E. Also at the meeting was Dean Charles Schaffner of Brooklyn Polytechnic Institute.

At this meeting it was decided that it would be necessary to work out an official relationship between the different engineering groups before further action could be taken concerning the erection of the engineering center. All present at the meeting agreed to cooperate in the study and preparation of a constitution which would eventually have to be approved of by the membership of the various societies. Mr. Jerome Barfus of the American Society of Tool Engineers was given the responsibility of setting up the Constitution Committee. It should be emphasized at this point that these negotiations are in a very preliminary state and that no commitments other than that of interest have been made.

As the I.R.E. is by far the largest of all of the participating societies it is felt that the Pulse can serve a very useful purpose, not only in keeping its readers informed of this activity, but also in the gathering of data which will prove useful in determining more precisely the needs, desires and requirements of the Long Island engineer. Accordingly, you are being requested to answer the questionnaire appearing on page 16 and to mail the completed reply to Herb Kulik, 17 Arbor Lane, Huntington, L.I., N.Y. A really good response to this questionnaire will demonstrate your interest and, besides encouraging those who are personally devoting so much effort to this project, your enthusiastic cooperation here can be invaluable when support and backing for the venture are sought.

A. I. E. E. LECTURE ON ESP

In the past few years there has been an increasing amount of overlap in the areas considered of interest to the I.R.E. and the A.I.E.E. This was strongly emphasized by the title of the recent series of lectures sponsored by the Communication and Basic Science Divisions of the New York Section of the A.I.E.E., "What Are Communications Doing to Civilization."

One of the more unusual of the lectures, devoted to Extra-Sensory Perception, was given by the noted Dr. J. B. Rhine who is the Director of the Parapsychological Laboratory at Duke University.

As most of our readers are aware, the field of Extra-Sensory Perception is quite controversial. Dr. Rhine devoted much of his lecture to a discussion of his methods of experimentation which are designed so that his results will stand up under the close scrutiny of the scientific community. Although he himself is convinced that people can communicate with each other by E.S.P. Dr. Rhine could offer no physical explanation or hypothesis to explain this phenomena. Nor could he offer any hope that this method of communication could ever be controlled or applied in any practical manner by the engineer such as has been done with the telegraph, the telephone or with radio.

Somehow at the end of the lecture I was considerably less inclined to believe in the possible existence of E.S.P. than in the beginning of the lecture. This however does not mean that Dr. Rhine failed to deliver a most interesting, stimulating and well received talk. His problem, like that of many other speakers asked to survey an entire field, was that a lifetime of work cannot be compressed into an hour and a half lecture. Nevertheless in spite of this type of inevitable shortcoming talks such as these are quite valuable in broadening the out-look of the engineer and The A.I.E.E. should certainly be congratulated for the imagination shown in setting up this series and Dr. Rhine must also be commended for the courage displayed in presenting the work which he has done in such a nebulous field before the eyes of the severely practical engineers.

—HSK

June, 1959

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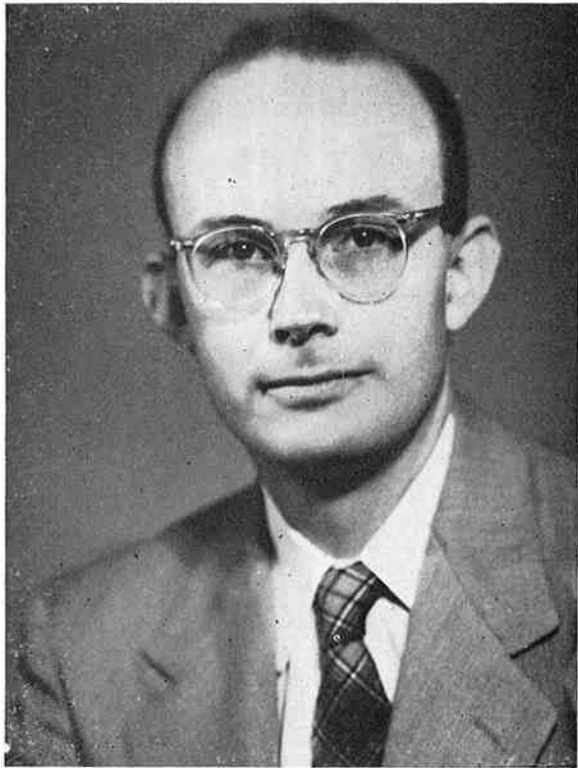
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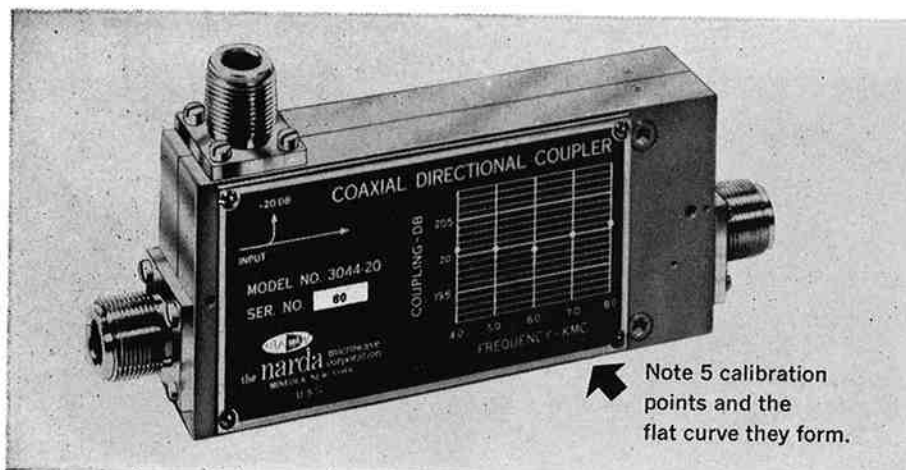
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2000-4000	20	3042-20	1.15/1.2	20	1000	200	10	
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QUESTIONNAIRE

Please mail your completed reply to HERBERT S. KULIK, 17 Arbor Lane, Huntington, L.I., N.Y. It is not necessary to identify yourself although all information received will be treated with the utmost confidence. The next issue of Pulse will contain an analysis of the data obtained from our readers. Thank you for your cooperation.

Name: Age:

Home Address:

How long have you lived here:

Previous Address:

Did you take any graduate courses last year?

Where did you take them?

Have you ever been deterred from taking courses by excessive travel time?

Do you favor a Long Island graduate school of engineering?

Where should it be located geographically?

Would you plan on attending this school?

Is your goal primarily graduate courses or obtaining an advanced degree?

Are you a member of any I. R. E. Professional Groups?

How many I. R. E. meetings did you attend last year?

Do you favor a Long Island Engineering Center

Where should it be located geographically?

Should this center contain the following facilities:

Technical Library Exhibit Hall Club Facilities

Engineering Museum Recreational Facilities Radio or Television Station

Should the Long Island section of the I. R. E. join with other Professional Engineering Groups in establishing this center?

Should this center be affiliated with the graduate school?

Would you be willing to contribute for this center?

Additional Comments: