



# THE SCHOOL OF TECHNOLOGY TECH NEWS CITY COLLEGE OF NEW YORK

VOL. XIII — NO. 3

WEDNESDAY, NOVEMBER 2, 1960

222

BY STUDENT FEES

## New Tech Building Named For Steinman

By WILLIAM MARIS

City College will name its new 9,000,000 School of Technology building in honor of the late David Barnard Steinman, an alumnus of the class of 1906, it was announced by Dr. Buell G. Gallagher, president of the College.

Dr. Steinman, who died on August 21, 1960, at the age of 73, was one of the world's most renowned bridge designers and engineers. He designed more than 400 bridges throughout the world, including the Henry Hudson Bridge in New York. Eight of his structures won awards for their beauty.

Dr. Steinman designed the Mackinac Straits Bridge, linking Michigan's upper and lower peninsulas. Built at a cost of almost \$100,000,000, it is the longest suspension bridge in the world, stretching five-miles from anchor block to anchor block.

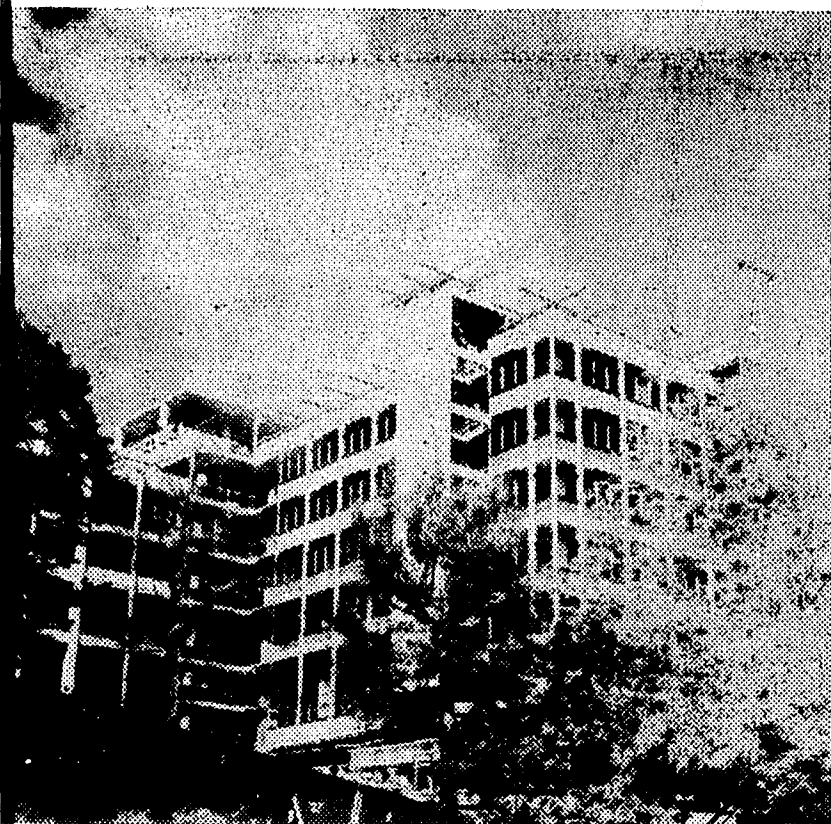
Dr. Steinman's other works include the Thousand Islands

summa cum laude from the City College and received his civil engineering degree and his doctorate from Columbia University. He also held nineteen honorary degrees from universities in Belgium, France, Italy, India and the United States.

He received City College's Townsend Harris Medal for distinguished professional achievement as well as its Alumni Service Medal.

### An Educator

He taught civil engineering at the University of Idaho from 1910 to 1914, and was a member of the faculty at the City College of New York for three years, from 1917 to 1920. As associate professor of civil and mechanical engineering, he was a member of the first faculty of CCNY's School of Technology which was established in 1919. He was instrumental in the establishment of the new school and prepared the structural de-



Steinman Hall, to be named when it's completed.

bridge over the St. Lawrence River; the Carquines Strait Bridge in California, the longest cantilever span in the United States; a suspension span at Adrianapolis, the largest bridge in South America; and the Kingston-Rhinecliff Bridge over the Hudson. Dr. Steinman also directed the modernization of the Brooklyn Bridge.

Dr. Steinman was graduated

sign for the technology building now in use and known as Goethals Hall.

Dr. Steinman was the founder and first president of the National Society of Professional Engineers. He also founded the David B. Steinman Foundation for grants in education.

In addition to his technical writings, he published two vol-

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## TIIC...

By LINDA GROSS

Professor Bronstein spoke to the Technology Intersociety Interfraternity Council, asked out its problems (which are numerous), and informed the organization of his plans for the future success of the Council. It is his opinion that one of the

largest problems of TIIC (and for that matter most other North Campus groups) is, that they have lost contact with the Department of Student Life since its establishment on the South Campus. Since TIIC is

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## ECMA Award:

# Vector Editorial Wins National Award

By MAURICE BLUESTEIN

This year's annual convention of the Engineering College Magazine Association (ECMA) found our own VECTOR taking first prize for the best editorial. The entry entitled: "Better Mousetrap Society" was written by the then co-editor-in-chief, Steve Shepard and appeared in the May 1960 issue. A reprint of the editorial appears in this issue of TECH NEWS.

## College Gets LGP-30

By HENRY D'ARCO

In the latter part of November, faculty members of CCNY will have at their disposal a Royal McBee LGP-30 digital computer. The computer will be the first of its kind ever to be owned by our alma mater. The significance of this addition again proves that CCNY action and not words is the motto. This sort of approach has made it possible for CCNY to be considered one of the best engineering schools on the east coast by numerous educators.

The new computer arrived last week and full scale operation will probably take place in late November. Mr. Demos Eitzer of the Electrical Engineering Dept. will be supervising the operation of the computer and he is responsible to Dean Hyman. Mr. Eitzer has revealed that some time in the future a series of lectures will be held so that interested students may have an opportunity to learn the basic principles governing the computer operation.

The digital computer will be temporarily housed in the servo laboratory in Harris Hall next to the existing analogue computer and when the new tech building is completed, both units will be transferred to one of the new laboratories. This computer lists for \$50,000, but the Royal McBee Company has allowed

the College to purchase it at a substantial discount.

### Computer Operation

Electronic computers fall into two broad groups: analog type and digital type. The function of both types are to find solutions to mathematical equations quickly and accurately. The analog type is actually a model of the system and all of the variables are represented by various voltages within the computer. Thus, in such a computer the dynamic equations which represent the system that is to be studied are set up analogously on the computer and the dynamic equations are then solved. The digital computer operation depends on the manipulation of digits. The analog type has the ability to do integration and differentiation by operating on various voltages while the digital computer can perform these operations only if they are first approximated by some numerical means so that computation involves the basic arithmetic operations.

The Royal McBee LGP-30 digital computer is a compact unit approximately desk size and requiring only a power outlet for its operation. The computer is made of four basic units as shown in fig. 1. The memory unit is the heart of the computer which has the ability to

(Continued on Page 2)

## \$10,000 Award Program

This national competition, exclusively for engineering undergraduates, represents the 14th annual offering of awards and professional recognition for student papers on welded design. This is an opportunity for undergraduates to deal with a problem in which they can have decision-making, creative, design experience. As such it can be an important complement to the mathematical and scientific aspects of an engineering education.

Awards, this year, have been significantly increased in both size and amount. In each of the two non-competing divisions of the program, Machines and Structures, a total of 23 awards worth \$5,000 will be made. The top award in each division is

\$1500, ranging down to ten sixth awards each worth \$50.

These cash awards and recognition will go to the students submitting the best papers explaining how the efficient application of welded steel to the design of a machine or structure, or part thereof, has or can contribute to its improvement or reduction of its cost. Only resident, undergraduate engineering students are eligible to submit papers. The new rules for the 1960-61 competition incorporating many important changes from previous years have been written and reviewed with the help of a rules committee consisting of the deans of engineering of 13 engineering schools.

The closing date is June 26, 1961.

There were 52 U. S. colleges and universities represented at the convention which this year was held at Ohio State University, Columbus, Ohio, October 13 through 15. In addition to the 150 school representatives, present were Mr. Robert Mof-fett, Assistant Editorial Director, McGraw-Hill Publications, along with the editor of "Machine Design" and a representative of the steel industry journal. VECTOR was represented by Steve Shepard, present Advisory Editor, Ed Kiburis, Editor, Ed Rosenthal, Industrial News Editor, and Mike Epstein, Circulation Manager.

The purpose of the conference is to draw together the staffs of the engineering college magazines for symposiums relating to magazine publication, for a discussion of general problems of publishing, and for recognition of work well done during the past year. The three main discussion groups dealt with editorial content (type articles to be used, that is, level of technicality), business and circulation, and layout and art. VECTOR representatives attended all three and were able to discuss mutual problems with the other engineering editors.

Some of the categories for awards, for which the magazines nominate themselves, and in many of which VECTOR entered, are best technical article, best non-technical article, best editorial, best single issue, best over-all issues, best recurring feature, best cover, and best layout. The magazine judged the best over-all was the "Marquette Engineer" of Marquette University. The judges were the three aforementioned members of the publication world and three college professors, including Frank Gill, ECMA critic and on the staff of Wayne State University. The VECTOR editorial was judged best by significance of content and style, and was awarded a plaque.

VECTOR's Steve Shepard commented that the exchange of views between the many editors was very enlightening. He particularly noted that about 75% of the editors of college engineering magazines get paid for their efforts. He cited as an example, the fact that the editor of the "Georgia Tech Engineer" receives \$85 per issue; that's right, eighty-five!

(Continued on Page 6)

## A Profile: Dr. Whitford

By JOY COFSKY

Dr. Robert H. Whitford is the Technology librarian at our college. He has completed 35 years of service to the college.

After receiving his Baccalaureate degree from The City College in 1930 he earned a graduate M.E. degree here. He later received 2 degrees in library science and a Doctorate in Education from Columbia University.

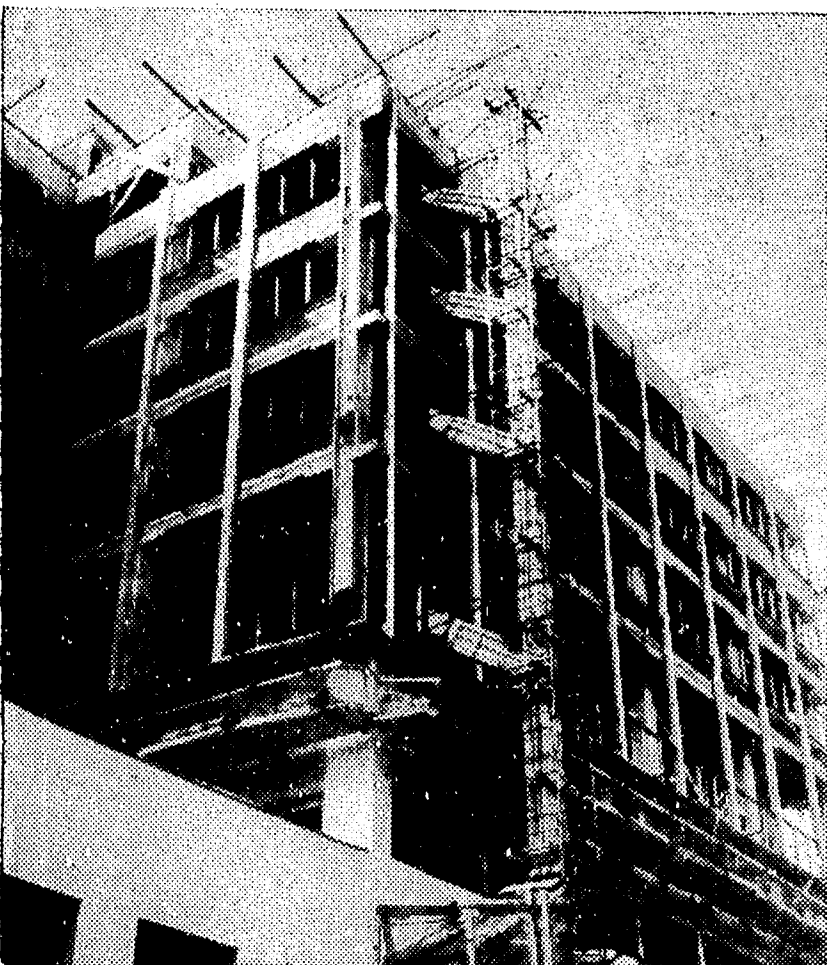
Dr. Whitford has been the Secretary of the Engineering



Dr. Whitford pictured here among his frequent companions — the books of the Tech Library in Great Hall.

Alumni for the past thirteen years. He is an A.S.M.E. affiliate, and a member of A.S.E.E., the American Physical Society, and several library organizations. He is also a member of Beta Phi Mu, Phi Beta Kappa Delta Pi, Delta Pi Epsilon, and Tau Beta Pi which are all honor societies. Dr. Whitford received the Alumni Service medal in 1955.

After 35 years of service to the college, Dr. Whitford could retire, but he wants to stay here for several more years, "unless another opportunity comes along." On August 8, 1959, he married Dr. Lilian Lucile Stevens.



Exterior of Tech Building started.

## Mr. Charles Klung An Asset To CCNY

By LANCE ARGAMBAU

Mr. Charley Klung is a rather unusual addition to the C.E. Dept. Mr. Klung explained to us that he was the only member of the faculty not to have a degree. Mr. Klung has not attended high school. In fact Mr. Klung cannot read or write. However Mr. Klung is an expert in his particular specialty, materials testing. In order to accommodate an enlarged class in materials testing, the C.E. Dept. decided to add additional lab sections. Mr. Klung is a living lab.

"Here, watch this," he grunted, as he picked up a 2" steel bar. "Where would you like me to break it?" As we watched with great anticipation Mr. Klung placed one end of the steel bar between his teeth, holding the other end with his left hand. "If you watch closely you'll notice that my ears turn red when I go over 20,000 P.S.I. and when I hit ultimate stress my lower lip begin to quiver." By this time the steel bar had enlarged by about .00375" and his ears glowed a cherry red. At this point he motioned for us to stand away from his desk. "You never can tell, he cautioned, I

have a loose filling in my front tooth, and it might come flying out." His lower lip was now quivering. He ranted. He grunted. The 2" bar came flying apart with a perfect 45 degree shear rupture. "Not much internal friction in steel bars these days."

After this amazing exhibition we asked Mr. Klung how he acquired his unusual skill. "I really donno, as a kid I used to break chicken bones with my mouth. Then one day mama came home with a T-bone steak. Late that night when none was watching I stole down to the kitchen and put it into my mouth. I crunched and nothing happened. Then I had an inspiration. I grabbed it with my feet and pulled. It felt wonderful. I suddenly, that instant, I knew what I wanted to do for the rest of my life. I went around the house in a mad frenzy breaking things. Of course I did have to make some adjustments to college life. I use my hands now.

Mr. Klung is only a temporary member of the C.E. faculty. When the new tech building opens in 1970 he will be replaced by a machine.

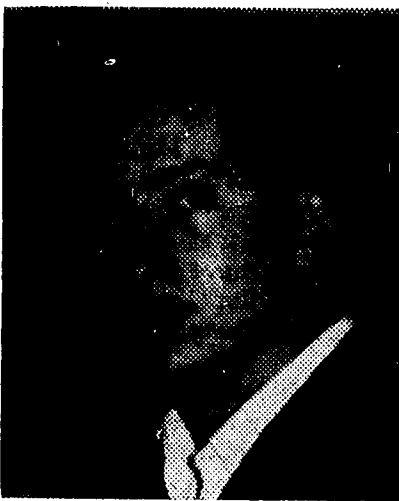
## A Test Problem

By RONALD MOSKOWITZ

The development of components for industry and the military that meet increasingly more rigid requirements has been accompanied by the associated problem of developing adequate test equipment. A rule of thumb adopted in industry is that the accuracy of the test equipment used be at least 10 times as accurate as the unit under test.

Described below is a solution to a problem that arose in the development of special high temperature synchros. A synchro receiver is an electro-mechanical device that gives a mechanical output (shaft angle) for two electrical inputs. One electrical input is a reference voltage applied to the rotor winding and the other is elec-

trical information applied to the stator winding from a transmitter synchro. This electrical information determines the magnetic axis of the stator with which the rotor mechanically aligns itself. An important characteristic of a synchro is its



MR. MOSKOWITZ

static accuracy. Static accuracy may be defined as the difference between the angle that the rotor shaft assumes and the angle that the electrical information commands. This error is of the order of several minutes of arc for a precise synchro although new developments in solid state and ceramic synchros permit errors as low as a few seconds of arc.

A Conventional synchro is tested at an ambient of room temperature. The unit is mount-

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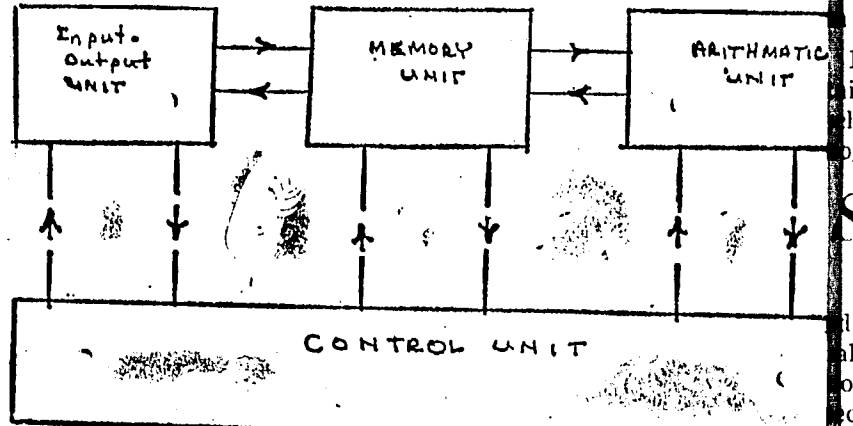
## New Computer . . .

(Continued from Page 1)

store information. The information is stored in the form of a code. The input and output unit is an electric typewriter (Flexowriter) where coded information is typed in and decoded results are typed out. The arithmetic unit performs all of the arithmetical computations and can be considered a desk calculator. The control unit synchronizes all of the operations which take place so that they occur in the proper sequence.

### Solving a Problem

With some surface knowledge of the basic units of the LGP-30 we may be able to understand the procedures which take place in a typical operation. Let us



take a simple mathematical equation,

$$(a)(b) + (c)(d) = e$$

By using the electric typewriter we may feed to the memory unit, in coded form, the numbers, a,b,c,d, and the necessary instructions for the computation. We would next instruct the control unit to follow the instructions stored by the memory unit. Thus the control unit will then feed numbers to the calculator unit and command it to perform certain arithmetic operations. Once that has been accomplished it then brings the result back to the memory unit

and commands the output unit to type out the results. Such calculations can be obtained approximately ten milliseconds. It becomes evident that feeding the computer with coded information will take more time than the actual calculation. Therefore for the quickest results it seems that the operator should be thoroughly familiar with the code of the computer. Thus engineers and scientists who desire some quick calculations to be made must depend on a trained operator.

Fortunately this problem has been overcome because algebraic languages have been developed. One such language known as the Act 1a language

can be fed into the LGP-30 and it will be translated into the LGP-30's code. Therefore scientists and engineers through familiar with this algebraic language will have no problem operating the computer.

Students who wish to become familiar with the algebraic language will have an opportunity to do so at CCNY. As already mentioned Mr. Eitzer's planned lectures for students plans to introduce them to the Act 1a language. The lecture will be announced by the Electrical Engineering Department at some future date.

## Tech Library Plans Move

Good News for Technology Students! Either on or before the opening of the New Technology Building, the Tech Library will be transported into new surroundings, namely, the second floor and mezzanine of the Tech Building. The new library will accommodate 392 to 456 students, and will measure 114 feet by 84' plus the area of the mezzanine. The old library, now occupying the Great Hall in Shephard, measures 88 by 88'. The extra space will liberate many of the tables which cannot be used because they are covered by other tables, and will alleviate the problem of overcrowding which often occurs. The only furniture from the old library to be used is the tables, as they are still sturdy and very usable. At present, the school plans to have them reconditioned before they are moved.

After the Tech Library is moved, the Great Hall will be restored to serve its original

function, which is to house major school functions, ceremonies etc. At present it is the largest single area in the school.

At present, the library receives mainly British and American publications for reference as well as periodicals pertinent to the undergraduate course study. As the graduate program is enlarged, however, an increasing number of foreign language publications will be ordered annually.

Although the apparatus for checking books will still be employed, I.D. cards now in use, the new library will need at least one extra professional staff member and more students aids to operate a book lift and to traverse the mezzanine.

Dr. Whitford, who is in charge of the Tech Library said of the move, "I am looking forward to the move to new library quarters, I'm sure the students will also."

## LOCK & KEY

HONORARY LEADERSHIP SOCIETY

Cordially Invites

All Student Leaders and Faculty Advisors of Extra-Curricular Activities to a

## STUDENT-FACULTY TEA

ON FRIDAY, NOVEMBER 4 at 3:00 P. M.

Buttenweiser Lounge

Finley Student Center

Synchro

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## Our Girls

By JOY COFSKY

Why do girls become engineers? It seems that one of the main attractions for girls in the School of Engineering would be that feeding the vast majority of boys there. After speaking to many of the girl engineers, your reporter's opinion was greatly changed. Here are some of the answers to why girls study engineering," taken from a random sample of women enrolled in the School of Engineering.

Katherine Oleksak, an upper junior, is the president of the Society of Women Engineers. She is majoring in chemical engineering. When asked why she chose engineering, she could not give a very definite answer. She has always been interested in mathematics and chemistry.

But of one thing Kathy is certain, she did not come to the school of engineering to meet a boy. She says, "If you want a

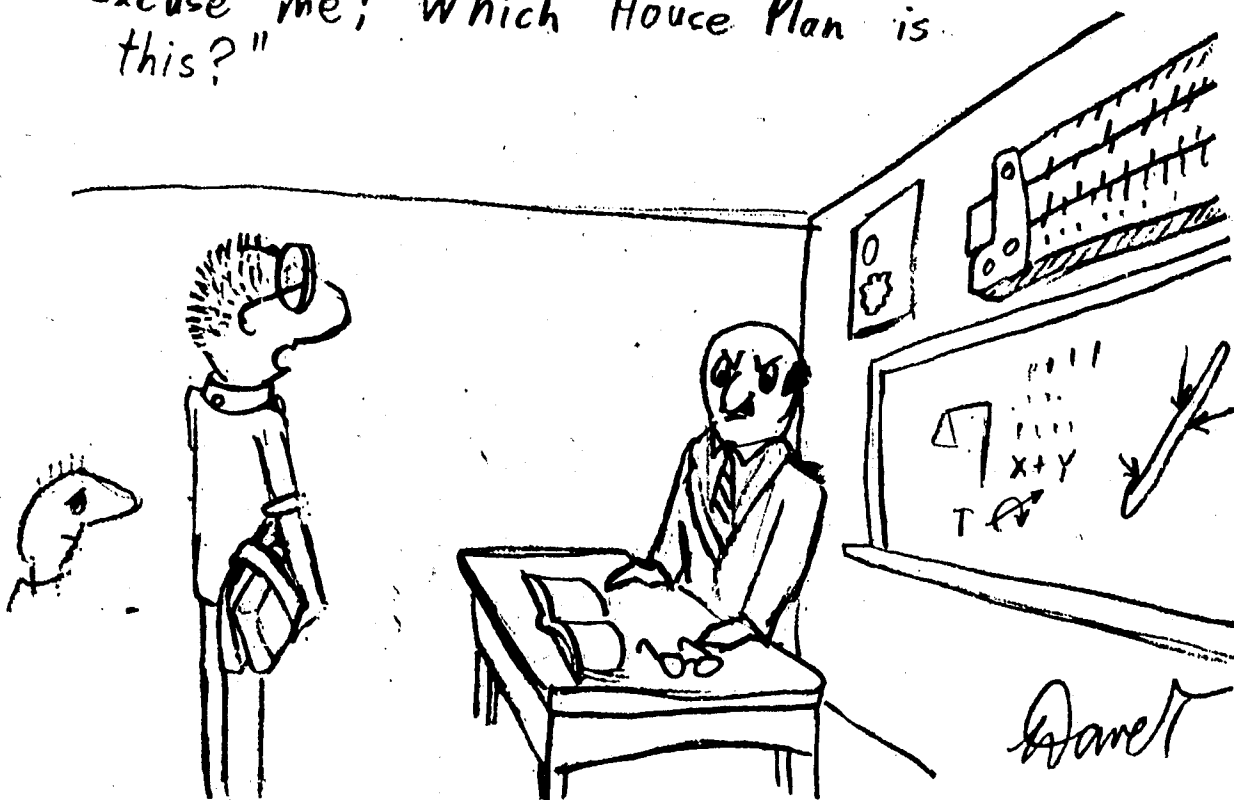
husband there are a lot easier ways than to study engineering."

### Space Girl

Horetta Jackson is a lower sophomore majoring in electrical engineering. She decided to become an electrical engineer one summer ago when she attended a summer program in astronomy and space science at the Hayden Planetarium. She saw a film concerning a rocket launching a satellite that contained a camera in it. After an engineer had given a speech about how interesting the work was, Horetta decided to become an engineer. She wants to build rockets and communication systems. She doesn't mind hard work.

Another lower freshman ma-  
(Continued on Page 5)

"Excuse me; Which House Plan is this?"



ARITHMETIC  
UNIT

## Syncro . . .

(Continued from Page 2)

in a high precision mechanical test stand that can be positioned every 5 degrees. The technician switches the electrical output command (synchro-transmitter) 5 degrees and then positioned into the test stand containing the synchro receiver 5 degrees. Therefore, the vernier on the test stand is adjusted until a null is obtained in the balancing circuit. The static error in minutes of arc is read directly from the vernier.

### High-Temp. Synchros

The procedure outlined above for obtaining static accuracy is not permissible in the testing of high-temperature synchros. These units are tested at temperatures of several hundred degrees Fahrenheit in special chambers where their environment is strictly controlled. The chamber is equipped with a mechanical stand, flexible couplings and snap-on adapters which allow the synchro receiver unit to be positioned every 5 degrees from outside the chamber. Unfortunately the construction of the chamber is such that there is no means of making micro-adjustments from a mechanical vernier. The procedure then is this: How can one observe the static accuracy of a synchro receiver when only 5 degree increments are mechanically possible from outside the test chamber? The problem is solved electrically in the following manner: place the test unit into the adaptor in the chamber. Before elevating the temperature of the chamber, rotate the test unit an arbitrary segment of arc, e.g. 5 minutes.

## Move

is to house the synchro receiver unit in the school library chamber. Unfortunately the construction of the chamber is such that there is no means of making micro-adjustments from a mechanical vernier. The procedure then is this: How can one observe the static accuracy of a synchro receiver when only 5 degree increments are mechanically possible from outside the test chamber? The problem is solved electrically in the following manner: place the test unit into the adaptor in the chamber. Before elevating the temperature of the chamber, rotate the test unit an arbitrary segment of arc, e.g. 5 minutes. Vary the gain control of a phase sensitive detector until the deflection on its meter is full scale. Then the meter is calibrated so that 5 minutes of error is a full scale deflection on the detector. From this information any deflection during the test will correspond to a definite error in minutes of arc. The fact that 5 minutes of arc will not give the same error voltage at different angles in a resolution is taken into account by adding high precision, calculated resistances in series with the receiver in the balancing circuit. These resistances are switched in automatically as each 5 degree increment is switched. This arrangement has allowed us to transform mech-

(Continued on Page 4)

Even though modern electronic computers work at almost unbelievable speeds, the scientist is way ahead of them.

Put quite simply, scientists have been thinking up complex problems faster than even the fastest computers could handle them. To close this gap, IBM created STRETCH, the world's fastest, most powerful computer.

The first STRETCH system will go to the AEC at Los Alamos to aid in nuclear reactor design. This goliath can do a million additions or subtractions a second. It can "read" the equivalent of four million characters per minute from magnetic tape. It can print the equivalent of three good-sized novels every hour. It can perform all these operations simultaneously, and if necessary

pause midway in the problem and tackle a more important one.

Creating such tools and putting them to work for science—or for business, industry, or government—is exciting, important work. It calls for talents and skills of every kind, from liberal arts to Boolean algebra to astrophysics.

So whatever your particular talents and skills, there may be just the kind of job at IBM you've always wanted. The IBM representative will be visiting your campus this year. Why not ask him about it? Your placement office can make an appointment. For further information about opportunities at IBM, write, outlining your background and interests, to:

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## HOW TO SQUEEZE A MILLION CALCULATIONS INTO ONE SECOND







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# TECH LIFE

By STEVE MAYBAR



TIIC finally is beginning to tick. The group was off to a very poor start this term due to a lack of attendance on the part of some of the member organizations. This seems to have been corrected if one is to judge by the number of TIIC members that came to council last Thursday. It is to be noted, however, that there were a number of members who did not wander in till the meeting was part of the way over. It is to be hoped that these council reps make it their business to be on time in the future as a courtesy to the other members of council. As for those that have not yet come to a council meeting, and there are a few of those, when are you going to attend? Don't complain about the co-operation that you get if you are not willing to co-operate yourself.

Out of the TIIC meeting came many very interesting things. One of these is the fact that Knittle Lounge is due for a face lifting long last. A resolution was passed that the plaques of the member tech organizations be made up and used to decorate Knittle and make it more like the place that it should be. This is only one of the things that Mr. Bronstein, our faculty advisor, is trying to do for us. It is up to us to give him the co-operation that he needs to make the goals come true.

In the same vein, it is time that those people on the faculty who control student activities and allocations realized that there are three thousand of us up on North Campus and it is high time that we got a portion of the activities that are at the present time restricted to Finley Center. An inkling of the way that they feel was shown in a booklet called "Finley Student Center" which has been issued by the Board of Student Managers. In this booklet they describe Finley as the recreation center of the school and appear to be very proud of this. As a tech student and as a member of the three thousand up on North Campus I think that it is something to be ashamed of rather than proud of. There is no reason that has been advanced thus far as to why some of the activities that are held at Finley cannot be held up north for the added comfort of the tech students.

On the club scene there is both good and bad news. Membership in clubs is on the increase — this is good. Attendance at meetings has fallen off — this is bad. Those of you who have joined clubs have a moral obligation to attend the meetings of the club. They were planned for you, the member, and deserve your support.

Of general interest to the residents of North Campus is the next lecture to be given by A.I.E.E. in conjunction with I.R.E. The instructor for this lecture is Dr. Falk of Brookhaven National Labs. His topic is "Matter Vs. Anti-Matter" and promises to be a very informative lecture. It will be held in Townsend Harris Hall and should be of interest to all of those people who are interested in science. Dr. Falk is an outstanding scientist in the field of Atomic Physics.

## A. S. C. E.

This Thursday, Nov. 3, the A.S.C.E. will show a film on construction and the use of concrete.

Final plans for the Induction Dance will be made. All members are urged to attend.

# For The Honored

By JOSEPH DISTEFANO III

Some people know what's happening. Some care; others don't. I'm one of those who does. But what can little ol' me and the other insignificants do about it, Danny?

Seniors, (Joe too):

I don't think any of you know about this year's Microcosm format is being radically changed from that of previous years, nor what this change consists of, I don't believe you were consulted as to your feelings concerning this proposed change either.

If you're ignorant of these facts, don't feel bad — so was I — until recently — and most people who do know have been told such vague stories that they still are not sure of the yearbook staff's policies.

Finally, after several visits, I have succeeded in pinpointing the editors as to their policies. This yearbook will not contain any faculty members or club group photographs. It will be mainly concerned with presenting the City College as the "Big Overall Picture." They consider pictures of organizations and teachers in a yearbook to be childish and High Schoolish.

In order to achieve their goal they will:

1. add more and better pic-

tures of the fronts, backs and sides of various City College buildings,

2. try to receive letters from famous men in the U.S.A., etc., wishing us the best of luck and so forth, and will publish these letters in the yearbook. (Preferably, these men should be alumni of CCNY. But this is not too necessary),

3. write faculty profiles of the leading one or two professors of each department (department heads and PH D's for example) with big pictures of each. All mention of other teachers will be omitted and their pictures will not appear in the yearbook.

4. break up college activities into major categories. (e.g.—Tech, S. G., political clubs, House Plan, Social Fraternities, Science Clubs, Drama and Musical Comedy Clubs, etc.). In each category an article will be written mentioning the participating organizations, their services, and any pertinent information the Staff thinks it should add to help people visualize the "Big Picture." These articles will be written and edited solely by the Staff.

In order to visualize the "Big Picture" more vividly, little pic-

(Continued on Page 6)

## In Memoriam

(Continued from Page 1)

umes of poetry — "Songs of a Bridge Builder" and "I Built a Bridge."

The new technology building, which will be known as David B. Steinman Hall, is a six-story building, modern in design, made of reinforced concrete with a glass-brick exterior and marble sheathing.

With the erection of the building, the College will be able to centralize all its technology laboratories and other engineering facilities and enable the College to undertake an expanded program of independent research for governmental and private agencies.

The naming of the building in honor of Dr. Steinman was unanimously recommended by the faculty of the School of Technology, and approved by the president of the college, Dr. Gallagher, and by the Board of Higher Education.

In making the announcement Dr. Gallagher pointed out that "There is no more fitting name than David B. Steinman's to grace our new building. He was a gentle man and a loyal alumnus. He occupied a distinguished place in his chosen profession, not only for professional achievement but because he was a humanitarian as well. The name of Dr. Steinman will serve as an inspiration to future generations of City College technology students. In honoring his memory we honor ourselves as well."

### Bridge Builder and Poet

In the thrilling rapture of my dreams,

I've dreamed of arches spun to span wide streams;

And, in ever-thinning gossamer,

I have pictured bridges twixt the clouds—

Alive with angels in opalescent shrouds

Treading the vastness of the sky

With danceful feet — making rhapsody

With harp and viol and dulcimer.

Go now, dear David, and lead their round;

Bridge their void, and fill it with sweet sound!

—Bernard Hershkoph '06 C.C.N.Y.



Dr. Charles E. Falk of Brookhaven National Laboratories who will speak to the AIEE-IRE this Thursday at 12:30 in Harris Aud. on "Matter and Anti-Matter."



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## Girls . . .

(Continued from Page 3)

majoring in electrical engineering is Mary Petrocelli. She was interested in mathematics and science and her family and teachers advised her to study electrical engineering instead of majoring in math and minoring in science.

Miss Petrocelli liked electricity when

# Sports

By MARTIN KATZ, Sports Editor

What breed of man is the typical engineering student? Can he be categorized by looks? I am beginning to think so. I am getting the impression that an engineering student is a person with a tremendous head encasing a large brain, supported by a weak body, on spindly legs, and arms so frail that the only thing they can hold and operate with any authority is a slide rule! As proof of this statement I offer the almost complete lack of response on the part of said students to any activity which uses any part of the body other than or in addition to the brain.

In the past the different engineering societies have tried many times to start leagues in different sports, especially basketball, and usually with the same results. I trust I don't have to tell you what the results were. However, I contacted the heads of several of the engineering societies to find out if they were going to try again. These were some of the answers I got. Richard Zipin, president of ASME said, "I don't think so. There has been a complete lack of response in the past." Ronald Moskowitz, president of the IRE and speaking for the AIEE-IRE said, "We always get very poor response. However, our membership has gone up to over 250 people and if we do get any response, we should certainly field a team." The other answers were about the same.

Warren Wolff, president of TIIC, gave some reasons for the lack of response. "One problem is that the only time we can have the gym is Thursday night. Since the school has done away with many of the Thursday night labs, many students are reluctant to wait around until game time. Another problem has been the small size of the league in the past. The students get tired of playing the same teams over and over, and if you try to expand it to include the honor societies, you run into people who can play on both sides. Still, if we get the response we would try again, although I think it is too late now for this term."

There is your answer. Although it is too late now for this term, the societies are willing to field teams next term if they get some response. I cannot make that response, that is something only you can do. There will be leagues next term if and only if you want them. Do you?

# Infant Missiles

By IRA REISS

Actually the earliest missiles were referred to as "aerial torpedoes" and were pre-set flying bombs of the same order as the German V-1 of WW II.

The first Army aerial torpedo, conceived in 1917, was a small biplane with a 15 foot span. It was a pure flying bomb, expendable and constructed of the most inexpensive, abundant, and noncritical materials.

The "Bug" as it was nicknamed was constructed of low-grade wood and covered with an exceedingly strong paper made of jute and manila rope. Heavy prefabricated pasteboard formed the conical aft section of the fuselage and the leading edge of the wings.

The powerplant was a 38 hp two-cycle, four cylinder, 90° V weighing about 120 pounds which had many advantages besides being inexpensive to produce. It was designed to operate at maximum power during its short one-way flight.

## Gyroscope Guidance

The heart of the "inertial guidance" system in the "Bug" was a gyroscope. Today the gyroscope remains the heart of the sophisticated guidance systems used in all missiles. Charles Kettering developed the remarkable control system. The rudder and elevators were actuated by a pneumatic control system supplied with vacuum or pressure from the crankcase of the two-cycle engine. The pneu-

matic controls were actuated by air bled from ports on the gyroscope to produce horizontal as well as flight and directional control.

Altitude control was achieved by utilizing an aneroid which cut in on the elevator control to maintain the missile at a preset altitude. A standard National Cash Register Customer counter actuated by an "air-log" impeller measured the air distance or range and cut the ignition over the target area.

Designed with field use in mind, the missile could be assembled in 4½ minutes with a screw driver and socket wrench. No landing gear was necessary. It was launched by its own power from a four wheel carriage running on pipe rails.

Produced in quantity the cost per unit was estimated at \$575.00 complete. The payload included 200 lb. of explosive and 30 lb. of low grade gasoline for a flight of 50 miles. Variations in load could extend the distance to 100 miles.

The armistice interrupted the entire program. However, several successful flights were made before the program was abandoned. The last flight covered a distance of 19.5 miles, power diving into the target area and disintegrating on the way down.

Elementary as they may seem, these aerial torpedoes were the ancestors of today's guided missiles.

# Yearbook...

(Continued from Page 5)

tures will be taken of several select organizations in action. Any organization interested in having its picture taken need simply give the Staff a list of its activities and it will decide which activity may fit in the "Big Picture." The Staff will then notify the organization of what it will photograph. Probably, no entire organization will be photographed.

After these pictures have been taken, however, there is no guarantee that they will be used. This decision is left to the discretion of the Staff. It depends on how the one photo taken turns out, and how the Staff feels this picture will fit into the "Big Picture."

If your organization photo passes all these trials and tribulations, and does succeed in being used, it will be found on some page, with about ten or fifteen others, all caddy-cornered, etc., to give appeal for the "Big Picture."

A tremendous response against this change was created by those of you who finally found out that your entire organization definitely would not be shown in the yearbook, and quite possibly no members at all. This forced the Staff to consent to the purchase of pages by organizations, at cost, and have group pictures taken; but these pages would not be allowed in the yearbook proper—they would be published separately as a coverless supplement.

Undesirable as this is, it was a better plan than was previously offered. However, for the past two weeks I have been trying to buy even this page for my organization, and have been stalled and sent on wild-goose chases.

Perhaps I, and the others who are with me, are alone with our feelings, but we feel that a yearbook should have pictures of all the teachers you knew and group pictures of organizations that you and your friends belonged to. This is what I will look for ten and twenty years from now, and I feel that I won't have a yearbook if these are missing.

If you agree with my feelings on the subject, I say to you that this situation should not be and does not have to be. We very definitely want group and faculty pictures, such as have been

(Continued on Page 7)

A Federal Career Day is being planned on Nov. 10 from noon to 7 p.m. in the Grand Ballroom of the Finley Student Center. A dozen or more federal agencies will be represented and available to discuss specific career opportunities with students. Brief talks in description of the work of each agency will be given during the noon to 2 p.m. period. In addition, it is expected that several dramatic exhibits will add color to the event.

**IF  
YOU CAN  
READ THIS  
THEN READ  
TECH NEWS**

# Vector Victory

(Continued from Page 1)

Next year's convention will be held at the University of Michigan. With the hope of enriching its honors at the next meeting, the first issue of VECTOR for this term will go on sale November 7. All phases of engineering are covered in this issue. Space Communication, Desalting the Ocean, and Aerodynamics are among the inter-

esting features.

Ed Kiburis, present VECTOR editor notes that due to unexpected circumstances, VECTOR's staff has dwindled to a choice few. New members are urgently needed. Freshman, Sophomore, Junior, Senior, Engineer, Artist, Writer; any student who is interested in joining the staff is welcome in room 331A Finley Center.

## The Winning Edit:

# Better Mousetrap Society

During the recent visit of Anastas Mikoyan, Soviet Deputy Premier, newspapers carried accounts of a seemingly insignificant incident. Mikoyan, visiting a super-market, was fascinated by the cellophane wrapping and packaging of a box of donuts. It was quite clear that modern packaging methods, taken for granted by the American consumer, were not yet commonplace in the Soviet Union. This incident pointed up in dramatic fashion the already established fact that the American standard of living is the highest in the world. However, it is ironic that while the Soviet visitor was curiously gazing at the wrapping of a package of donuts, his country was orbiting a satellite around the moon—a feat American technology was hardly ready to perform.

This incident highlights the characteristic differences existing between American and Russian technology. The emphasis in Russia seems to be on pure science and applied research. This emphasis, although not permitting the Soviet Union to have a higher standard of living than America, has produced some very important, overwhelming scientific results.

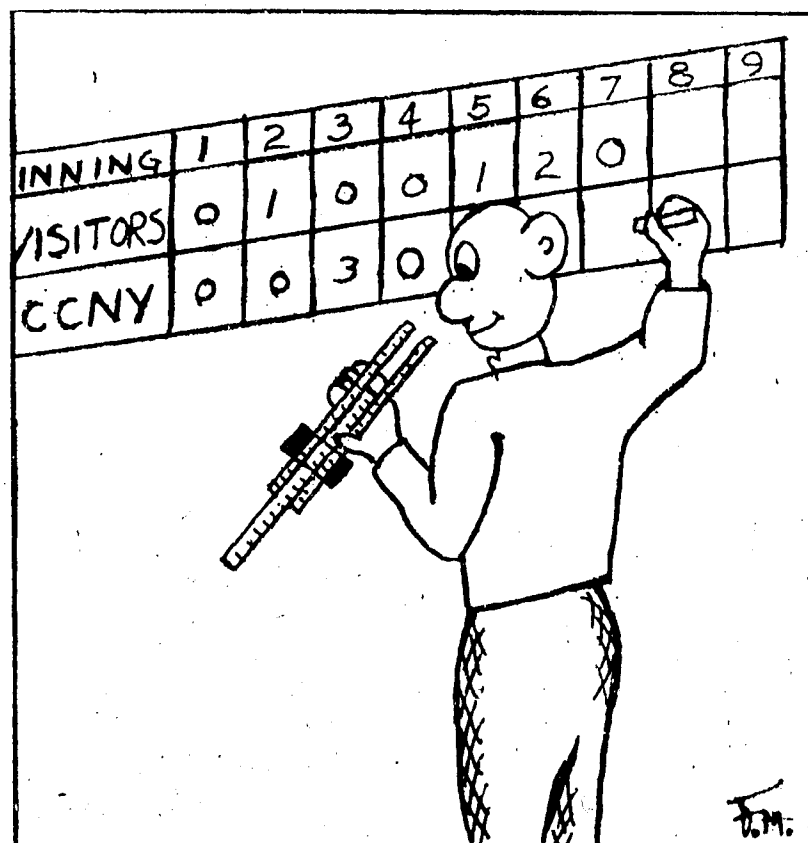
On the other hand, American science is more on an "engineering" level. That is, we are concerned with building bigger and more automatic cars, better sounding stereophonic record players and clock radios that not only wake you up, but also start percolating your coffee.

Since the launching of Sputnik I, greater emphasis is being placed in this country on basic research and pure science. The decrease in engineering enrollment and rise of enrollment in physics and math indicates that students are aware of the need for such emphasis. However, even with the greater emphasis on pure science, our society is one dedicated to the improvement of existing products. Absolute curtailment of this development work is not to be encouraged. It has enabled us to maintain a desirable, high standard of living. However, while more people are listening to the cries of Madison Avenue to "enjoy modern living," a reasonable limit to easy living is being approached. This limit is evident in some of the new consumer goods now on the market.

"Build a better mousetrap and the world will beat a path to your door" appears to be an axiom by which many products are designed. For example, the electric can opener is worthy of designation "better mousetrap"—those more elaborate devices performing functions readily done by existing means. In this definition the key word is the relative term "readily." While it may be true that an electric can opener is more appealing, the difference between it and a wall-mounted, magnetic, manually-operated can opener is negligible with regard to speed and safety. We should be proud to create a device more elaborate than its predecessors, providing it represents an improvement in efficiency, convenience or accuracy. But a visit to a large appliance store reveals many new products that, while more elaborate, represent little or no improvement over existing products, and therefore may be called "better mousetraps."

Companies must exercise more discretion in deciding whether a product represents an improvement in some phase of operation or whether it is merely an elaboration on an existing product designed to please the gadget-minded consumer. The trend toward producing "better mousetraps" should be stopped if American industry is to make substantial gains in the future.

— Reprinted from the May, 1960 issue of VECTOR





Yearbook

TIIC Talk

(Continued from Page 6)

ditional in the past — before students became obsessed with progressive theories and the "Big Picture," and were more interested in the individual and the corresponding number of individual little pictures that go with it.

Let us show that democracy works in City College. To do so, please deposit your name in envelopes which will be distributed on Campus, and, if you represent an organization, please signify the name of it and where you may be contacted.

**Daniel Schutzer, President, Eta Kappa Nu**

Come on now! Don't just sit around reading the newspaper. Get out and find Danny and donuts. It will be your support. (Incidentally, you can reach him by phone in the Soviet Union Bulletin on the already board at Tech Crossroads in the highest of the halls.)

It seems that the boys of Eta Kappa Nu (HKN) are the only party around this month. There's another one by Ronnie Schilling of HKN:

"We of Eta Kappa Nu are planning a program for visiting High Schools in New York to familiarize the students with some aspects of Electrical Engineering."

Most High School seniors planning for an Engineering career know very little about what lies ahead in College. We are the people who can answer some of their important questions and shed light on some important facts relating to their future education. But we alone cannot cover everything in one assembly program. We urge other organizations to help us.

"We have spoken to many students who have dropped out of the E.E. curriculum. Although many dropped because of failing grades, an amazingly large number dropped because they just didn't like the type of work which they were doing. This is a sorrowful situation when we think of the years these students have wasted. This problem can be licked, and we of HKN would like to start the ball rolling. Letters are in the mail right now to the principals of many of our High Schools. Watch this column for our progress report."

By the way, I wish somebody would steal back General Webb's sword from those villains of NYU. He looks kind of helpless with a butter knife (compliments of the CCNY Cafeteria) in his hand.

Completed, could possibly benefit many of us at a future time.

The Alumni Association has always answered the call of help from the School of Tech. and has always tried to help us in any way possible. It must be understood, however, that there is little they can do without contact with the student body.

### Alumni Meet

(Continued from Page 4)

Completed, could possibly benefit many of us at a future time.

The Alumni Association has always answered the call of help from the School of Tech. and has always tried to help us in any way possible. It must be understood, however, that there is little they can do without contact with the student body.

**Gilbert and Sullivan Society**  
Casting for the Yeomen of the Guard on Thursday, Oct. 20th from 12:30 to 2:00 in room 417, Finley. We need heroic tenors and basso profundos.

(Continued from Page 1)

one of the student groups that Professor Bronstein has charge of, he has decided to help the organization gain more widespread recognition.

Professor Bronstein is trying to set up some type of office on the North Campus where he will stay for several days each week. He wants a North Campus office to make it easier for Tech students to contact him in order to discuss personal or group problems, and so that he can establish closer contact with the students on the North Campus.

TIIC wishes to thank Professor Bronstein for his concern and the effort he is making.

TIIC has chosen the four students for the Student-Faculty Committee which is being organized this term. They are: Warren Wolff, Louis Sunderland, Richard Zipin and Samson Helfgott.

The tables cluttering up the Tech Library have not yet been removed since a suitable place

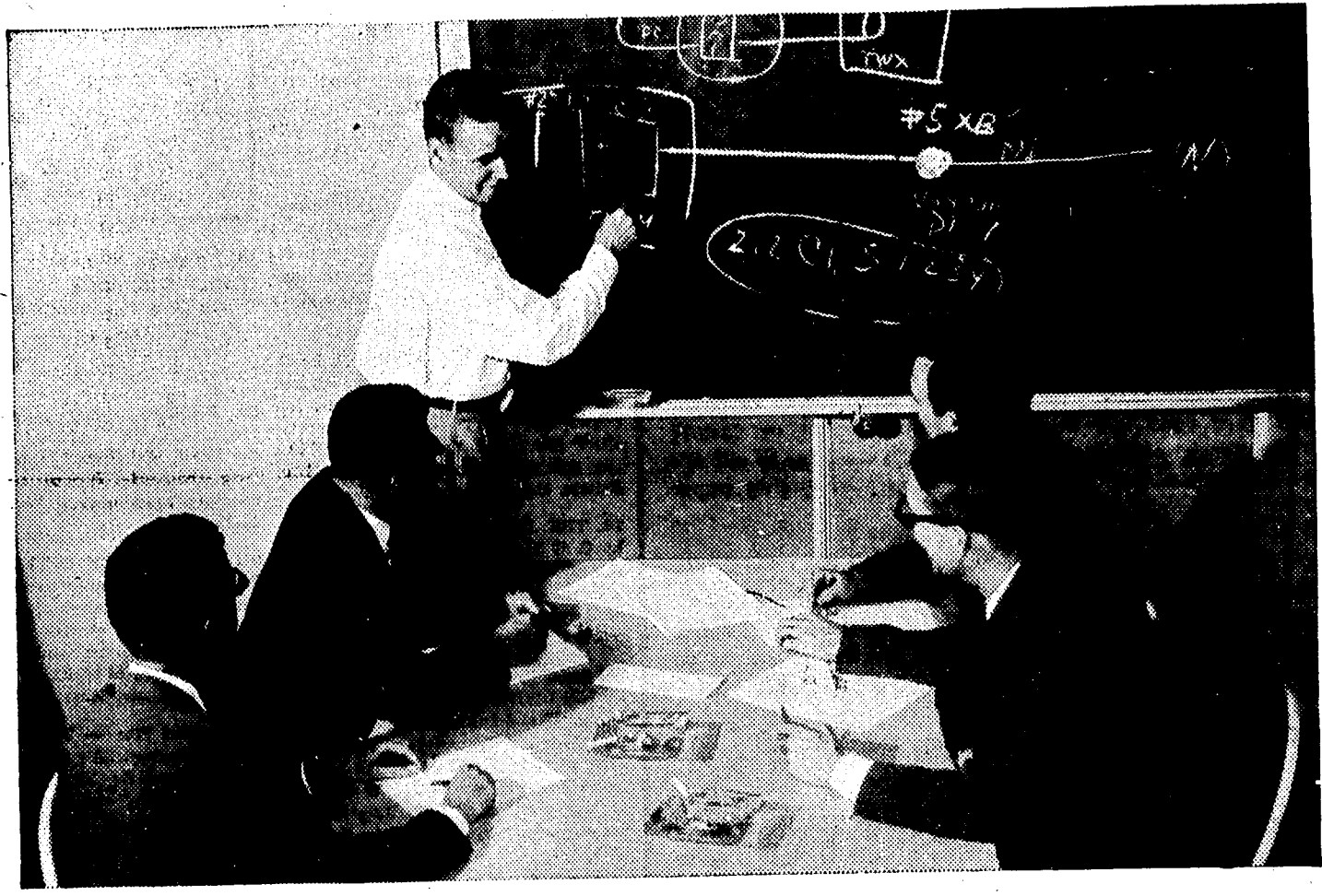
for them has not yet been found. Requests and suggestions to make improvements on the North Campus lounge facilities have thus far brought opposition from the South Campus. City College is sticking to its policy of having all student activities take place at Finley Center and refuses to see the inconvenience it causes the Tech students.

TIIC sent Virginia Efros of S.W.E. (Society of Women Engineers) to Mr. Getzoff to inquire about the possibility of obtaining a table at registration.

TIIC feels that they are entitled to the table in view of the number of students it represents (over 2,000). To eliminate the space problem, TIIC is requesting the table only for the first days of registration. Contrary to the other organizations who occupy tables, TIIC is primarily interested in reaching the upper classmen and not the freshmen, since the majority of their member organizations do not accept freshmen.



Is This Shepard Hall?



## STU'S EXPLAINING HOW MACHINES WILL SOME DAY "OUTTALK" PEOPLE

"Stu" Smith graduated from Southern Cal with a powerful yen for excitement. His kind of excitement—Engineering.

He got what he bargained for (and a little more) when he joined Pacific Telephone. One of Stu's early assignments was to find out how existing Long Distance networks could be used to pipeline high speed "conversations" between computers in distant cities.

The fact that he did a fine job did not go unnoticed.

Today, four years after starting his telephone career, Senior Engineer Stuart Smith heads a staff of people responsible for telegraph and data transmission engineering in the huge

Los Angeles area. As a pioneer in this new data transmission field Stu predicts data processing machines will some day do more Long Distance "talking" than people.

Stu contacted 12 other companies before joining Pacific Telephone. "I don't think there's any limit to where a man can go in the telephone business today. Of course, this isn't the place for a guy looking for a soft touch. A man gets all the opportunity he can handle right from the start. He's limited only by how well and how fast he can cut it."

If Stu's talking about the kind of opportunity you're looking for, just visit your Placement Office for literature and additional information.



"Our number one aim is to have in all management jobs the most vital, intelligent, positive and imaginative men we can possibly find."

FREDERICK R. KAPPEL, President  
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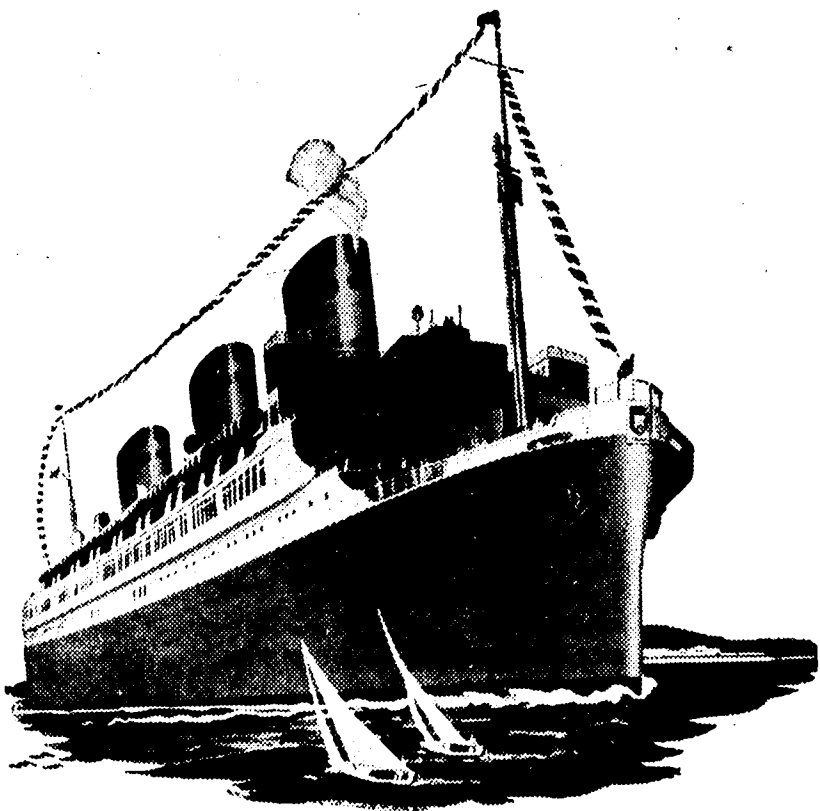


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