



Kids To Visit Labs; Will Hear Gallagher

By MARK BENDER

Some of the engineering labs of North Campus will be visited by junior high school children from the neighborhood Thursday, April 15, in a project designed to get the students interested in higher education, and City College in particular.

A demonstration of the computer center and the atomic reactor in Steinman Hall has been scheduled in the morning for a group of about seventy-five children, who will also get to see other impressive labs in the building. They will tour the Skerville, and then go on to the gym. They will be given a tour of South Campus, where they will be addressed by President Gallagher, and the entire event will be given publicity by daily newspapers, thanks to public relations office.

The project is part of a social service program initiated by Zeta Tau, one of the fraternities on campus. The children were in-

troduced to it by competing in an essay contest on the subject "Why I Want to go to City College." The winners are to be awarded with the day at City, which, it is hoped by those sponsoring the program, will motivate the students to get better grades in an effort to prepare for their college education.

The groups will enter classrooms and labs only with the permission of the teacher, since dangerous or involved work may be going on. The tour is planned so that the children will arrive at Finley Center as the club break commences, where they will be given milk and ice cream paid for by student government.

Visiting Prof. Named; Worked On Hot Line

A professor who was actively involved in the planning and research for the utilization of the "Hot Line" communication system between the White House and the Kremlin has been appointed Buell G. Gallagher Visiting Professor of Psychology at City College for next year.

Dr. Alex Bavelas, professor of psychology at Stanford University and former head of the Group Dynamics Laboratory at Massachusetts Institute of Technology, will help launch the City University's Ph.D. program in Social Psychology which is based at City and Brooklyn colleges.

Professor Bavelas is a specialist in leadership training and in communication networks for small groups and large organizations. He helped determine the method of transmission and sys-

tem of operation for the "Hot Line" and helped prepare its operations manual and the equivalent Teleconferencing procedures for U.S. military and N.A.T.O. forces.

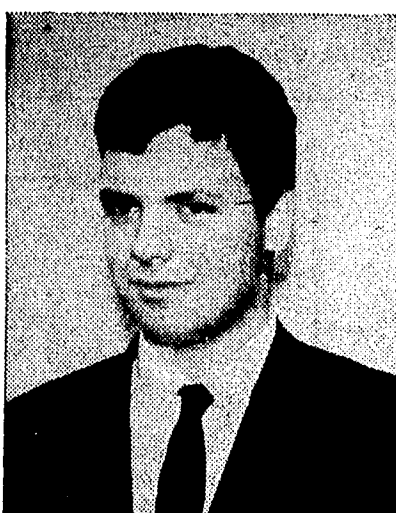
In addition to conducting a graduate seminar in social psychology, Dr. Bavelas will lecture to undergraduates in the College's elementary course in psychology. "The lectures allow a large number of students to hear a stimulating, top-notch psychologist," said Professor Joseph E. Barmack, chairman of City College's department of psychology.

(Continued on Page 2)

Tech Council Holds Talks

Tech Council is interviewing the presidential candidates to determine who it will endorse in the upcoming Student Government elections. So far, Carl Weitzman, special column editor of TECH NEWS and leader of the Campus First slate, has been interviewed.

Later in the term, Tech Council will hold a tea for the pres-



Clifford Tisser
President of Tech Council

idential candidates, to debate various issues and to get them to meet the presidents of the member organizations of Tech Council.

The Council participated in the March 25th free tuition rally, and has set up a permanent committee to be in contact with S.G. on free tuition matters.

In an effort to help its member organizations, each officer of the Council will become expert in a different College matter. So far, Treasurer Alvin Neman has been assigned to fee procedure. President Clifford Tisser and Vice-President Michael Brownstein will concern themselves with other areas.

The Council has sent out letters to various people and organizations to help get text books recorded for blind students, in re-

(Continued on Page 2)

OP To Be Censured; Council To Vote Motion

A motion to censure **Observation Post** for unethical behavior during the boycott debate in Student Council comes before Council tonight.

The motion is a reaction to several incidents alleged to O.P. staff members. O.P. had printed a two page issue in advance of council legislation announcing the boycott. Managing Editor Mark Brody displayed this issue at the debate, stating "this is how much faith we've shown in you" and intimated that it was council's duty to pass the boycott motion in response to O.P.'s show of faith.

Another charge levelled against O.P. is that of coercion. Josh Mills, Business Manager of O.P. is accused of seeking to influence two freshman members of council by threatening to withdraw any possible support of these councilmen by O.P. in the future. This move was later disavowed by Mark Brody.

Tech Council Acts

In other political action, Tech Council last Thursday strongly endorsed the by-law opposed in S.C. which would take action against picketing in college buildings. The motion before council now is tabled and awaiting action.

Other recent developments include the strong endorsement by S.C. of the teach-in on Vietnam held last night in Finley Center, and support of the student protest movement at Brooklyn College. Student Council also attacked the Feinberg Law which prohibits Communists from teaching in New York State.

Weitzman Forms Slate

Elsewhere, Carl Weitzman '66 candidate for the S.G. Presidency has begun the formation of his Campus First slate. He stated that the completed ticket will include four or five tech students, more than any slate in recent years. Rubin Margules has announced that he is running with Weitzman for the office of Campus Affairs.

Vice President, and Allen Perry has announced his candidacy for the S.G. Secretary on the Campus First Slate.

So far only Weitzman and Herman Berliner have declared for the Presidency. Martin Kauffman



John Zippert
Current S.G. President

Student Government Treasurer had tossed his hat in the ring, but withdrew last week. Current S.G. President John Zippert is expected to seek another year in office.

Elections will be held on May 11 through 14. Political activity on campus is expected to increase as election time draws near.

Hiring Trend Looks Good

By FLORENCE STONE

Statistics indicating hiring trends for January's graduates show an increased demand for engineering and science majors with concurrent upswing in the demand for Liberal Arts majors.

According to Charles K. Meyer, Assistant Director of the City College Placement Office, the employment market is very good this year. There is an increase in demand as well as an increase in starting salaries. "Statistics are bigger and brighter than last year. In fact, there will be more jobs than students," said Mr. Meyer.

A comparison with last year's starting salaries in private employment shows an increase in average monthly salary in all fields with the exception of Civil Engineering. The average monthly salary for Chemical Engineers increased from \$600 a month to \$624 a month, an increase of 4%, while the average monthly salary for Electrical Engineers increased from \$612 a month to \$629 a month, a 2 3/4% increase. The starting salaries for Mechanical Engineering major rose .8% from \$604 a month to \$609 a month. Salaries for Chemistry majors increased 16%, Physics majors 19%, Mathematics majors 5% and Biology

(Continued on Page 2)

Summer School For Teachers

A Summer Institute for Secondary School Teachers of Chemistry and Science will be offered at City College July 6 through August 13.

Sponsored by the National Science Foundation, the Institute's purpose is to improve the qualifications of chemistry and science teachers.

The Institute will offer six courses. Each participant will be entitled to a stipend of \$75 per week, an allowance of \$15 per week for each dependent, a travel allowance, and exemption from tuition and fees of the City College.

Applications may be obtained by writing to Professor Chester B. Emerson, Director, NSF Summer Institute (Secondary), The City College, Convent Avenue and 116th Street, New York 10031.

M.E. Professor Seeking NSF Grant

By LEONARD SOLOMON

Due to the new doctoral programs at the City College, added impetus has been given to engineering research projects. Among these have been a series of original experiments conducted by Professor Heideklang of the Mechanical Engineering Department.

Professor Heideklang is working on electron-beam vacuum deposition, the principle behind which is relatively simple. A cathode-ray tube is used, at 10 kilovolts and 200 amperes, to emit very high energy electrons. Through various means these electrons are focused on a very small area. When this electron beam hits a surface most of the energy is transformed into heat. Very high temperatures are produced in this manner, high enough to evaporate most metals. All of this happens in a tight vacuum.

The purpose of this experiment is to deposit, from the evaporated material, a metallic and ceramic composite. At the present time, the professor has deposited ceramic material and is preparing to deposit both at the same time. According to Professor Heideklang, precipitating the composite presents no problem. The question is whether the composite will have the desired properties.

According to his present theory the resulting metallic and ceramic composite will be very hard at very high temperatures. It should also be a good protector against oxidation. Some of the

uses of such a material are fairly obvious. It could be used for rocket nose cones where tremendous heat is developed in re-entry. It could also be used in die casting. This is a process by which molten metal is forced through a form or die to obtain a certain shape.

Another useful outcome of this experiment is that it will create work for graduate students in metallurgy. For example, one of the things to be discussed is what type of bond joins the metal and ceramic. It may be mechanically bonded or chemically bonded. If it is chemically bonded, it may have any one of several different kinds of bonds. Also of interest is the dispersion of the phases of the composite.

The professor has applied for a National Science Foundation grant to finance his project.

Skidmore Architect Discusses Project

By ARTHUR LANDSMAN

Upon the invitation of the School of Architecture, Mr. Don Smith of the firm Skidmore, Oweng and Merrill, architects for the planned science building and plaza, came to City

College to discuss the design of the building and the firm's concept of design. From the outset Mr. Smith declared that the building does not relate to surrounding structures, but rather has a scale of its own which it will establish with the other buildings to be placed on the plaza, separated by an open athletic field of approximately three acres.

A spirited question and answer session followed Mr. Smith's presentation. It was obvious that he and the students and faculty have opposite approaches to the problem. The architects' firm belief is that an elevated platform sixteen feet above Convent is the answer to the problem of circulation at City College.

The students and faculty feel very strongly that City College, as an urban college, should express its urbanity by using the streets as they now are situated with required structures fitting into existing conditions. They feel that the new structures must relate to the old so that the campus may function well in its entirety.

The enclosing of space by walls to create a building is not the only type of space with which an architect must deal. The space created by the arrangement of buildings in relation to one another must be of vital concern to him. The manner in which this space enhances or detracts from the structure as well as its affect on existing structures must be recognized. In the case of City College, new structures must be situated in such a manner as to create positive spaces with respect to existing structures.

The new Science Building will not create these positive spaces, nor will it help organize any space between the proposed three new buildings.

Mr. Smith feels that the new buildings have a scale of their own, but it is the wrong scale for City College and more fitting for an office building on Park Avenue. Furthermore, the building does not only function badly in relation to its neighbors, it is plain ugly. The large glass panels in the concrete grid look like the skeleton of a building rather than a finished building. The excitement due to aesthetic sensibilities is difficult to explain, but

in this case it is just not present.

Perhaps too little emphasis has been placed on what the function of good architecture is. Architecture has been described as the art of organizing space as well as a synthesis of all man's skills—the sum of human creativity. The architect takes an area of nothing but air, surrounds it with walls and roofs, thus organizing space, creating rooms, halls, courts. This he can do in various ways, from a tent or word hut to the most complicated skyscraper; he can enclose space to make a soaring cathedral or organize the spaces horizontally as classrooms. Lao Tse, in the sixth century B.C., described this concept well when he wrote, "We turn clay to make a vessel; but it is on the space where there is nothing that the utility of the vessel depends." We pierce doors and windows to make a house; but it is on the spaces where there is nothing that the utility of the house depends. Therefore, just as we take advantage of what is, we should recognize the utility of what is not.

The architect is the master of the shapes he creates, for unlike the painter or sculptor, who often deals with observable facts of life, the architect is the maker of forms. He copies no existing shapes and is not aiming at representing, whether it be rock, tree, animal, or any shape found in nature.

Though he deals with abstracts as forms, nevertheless, the architect must use concrete materials for his work. It is a basic criteria of good architecture that the materials used must be used recognizing the character and inherent nature of the material.

Another important factor for the architect to consider is whether the structure functions well. The very function of a building will ultimately make a theater look like a theater and not a school, a house look as such and not a commercial enterprise.

Judicious use of materials and functional building are two important criteria, but they alone do not make good architecture. An architect is an artist and good architecture is an art.

Architecture must appeal to the emotions. Great architecture must

Tech Council . . .

(Continued from Page 1)
sponse to a request from the National Co-ordinating Committee of Jewish Women.

Tech Council is also trying to revive the now-defunct Society for Women Engineering. It has contacted the female engineering students at the College.

Visiting . . .

(Continued from Page 1)
The Buell G. Gallagher Visiting Professorship Chair is financed by the City College Fund through gifts from alumni and friends of the College. Named for the College's president, the professorship enables distinguished scholars to teach at the school for a semester or a full academic year.

move, elate, evoke, stimulate and excite us. The art of organizing space is to be accomplished not only functionally but beautifully. The architect clothes his building with a form of beauty not extraneous or superimposed, but inherent in it — every part making up the whole.

Salaries . . .

(Continued from Page 1)
major 1 1/4%. Those for liberal arts majors rose 17% from \$401 a month to \$470 a month. The starting salary for Civil Engineers dropped 17.2% from \$598 a month to \$555 a month. The number of students accepted for graduate schools and for civil service employment is the same or better.

Registration at the City College Placement Office has also increased over last year's with the

exception of the Liberal Arts field. A total 428 Engineering majors, Science majors and 103 Liberal Arts majors have registered the Office so far this year. According to Mr. Meyer, the fall of Liberal Arts major to register early is a constant problem of the Placement Office. "Liberal Arts majors put off registration as long as possible and make it difficult for the Placement Office to set up interviews in time," said Mr. Meyer.

STARTING SALARIES IN PRIVATE EMPLOYMENT January 1965 Graduates

As registered by the City College Placement Office

Degrees	No.	Average Monthly Salary	Percentage Increase Over Last Year
Chemical E	12	624	4.0%
Civil E	18	555	-17.2%
Electrical E	75	629	22.8%
Mechanical E	36	609	0.8%
Liberal Arts	11	470	17%
Chemistry	5	574	16%
Physics	6	604	19%
Mathematics	7	509	5%
Biology	2	418	1.8%

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EEE Convention

By STEVE BERMAN

ing the week of March 22, Institute of Electrical and Electronics Engineers held their convention and show here New York City. The convention place at the New York Hilton Hotel. It consisted of eighty sessions, with various people reading original research papers at session.

most interesting session held Monday morning and moderated by the Group on Biological Engineering and the Electrical Techniques in Medicine and by Committee of the IEEE. First paper was entitled "The Range of Replacing Human and Functions" by E. F. Murphy. Mr. Murphy discussed problems in designing artificial organs, surgical instruments, prosthetic and sensory aids. He pointed out that materials would be beneficial to tissue but have a wider range of mechanical and electrical properties needed, and he thinks the connections between

these artificial materials and the real living tissue should be made more sophisticated. He feels that some of the previous malfunctioning of this equipment may be due to errors in design, rather than to basic principals or biological problems, as previously thought. Mr. Murphy feels also that many of these artificial devices makes one appear unnatural. He feels that information would be readily available to solve some of these problems if only communication would be improved.

Another paper was written by F. J. Fry entitled "Status of and Forseeable Problems in Artificial Hearts." He states that it is of considerable interest that the concept of a human heart as a mechanical device is presently not only accepted as possible, but success in a few short years is freely predicted. This is in sharp contrast to the attitudes of many people when research was started on artificial hearts a decade ago. Many then thought it was a topic


fit for Science Fiction. Acceptance now is due to investigations by a number of research groups that have demonstrated that artificial intracorporeal devices can be made to sustain a relatively normal physiological state in an experimental animal for periods of time on the order of one to several days in the case of complete heart replacement, and for more prolonged periods when devices limited to assisting the natural heart are employed. Such major problems remain, however, as the design of a mechanical heart with realistic life, compatible with insertion and operation in the subject, and the incorporation of a drive mechanism to keep the mechanical heart beating either directly in the body, or to allow for energy transfer through the skin surface

There were three other papers read at this session: one by Yukihiro Nose entitled "Artificial Heart Inside the Chest—Past, Present, and Future," another by A. Kantrowitz called "The Auxiliary Ventricle," and finally one by W. Greatbach, W. Chardack, and A. Gage, all from the State U. at Buffalo. Their paper was about "Implantable Cardiac Pace-

makers" and it stated that even though the percentage of failure of the cardiac pacemakers is very low (about 0.1%/1000 hours), this is not good enough for unqualified medical acceptance as a clinical practice. The authors feel that this percentage must be reduced to one-tenth of what it now is.

At the New York Coliseum, the various member companies of the IEEE were able to exhibit some of their new products and ideas.

Unfortunately, not very much that was exhibited was new. Over one thousand companies were represented at the show. One of the most heavily advertised ideas at the show was the new concept of the reed switch. Reed Switches have tremendous possibilities in such applications as: solenoid action, switching matrices, counters, explosion-proof switches and relays.



On Campus with Max Shulman

(By the author of "Rally Round the Flag, Boys!", "Dobie Gillis," etc.)

VOYAGE TO THE BOTTOM OF THE BARREL

As everyone knows, thirteen-twelfths of the earth's surface is water. Thus we can see how important it is to know and understand our oceans. Toward this end American colleges last year embarked on a program to increase enrollment in oceanography. I am pleased to report that results were nothing short of spectacular: In one single semester the number of students majoring in oceanography rose by 100%—from one student to two!

But more oceanographers are still needed, and so today this column, normally a vehicle for slapdash jocularity, will instead devote itself to a brief course in oceanography. In view of the solemnity of the subject matter, my sponsors, the Personna Stainless Steel Razor Blade Co., makers of Personna Stainless Steel Razor Blades which give you more luxury shaves than Beep-Beep or any other brand you can name—if, by chance, you don't agree, the makers of Personna Stainless Steel Razor Blades will buy you a pack of whatever brand you think is better—my sponsors, I say, the Personna Stainless Steel Razor Blade Co. will today, because of the solemnity of this column, forego their usual commercial message.

We begin our study of oceans with that ever-popular favorite, the Pacific. Largest of all oceans, the Pacific was discovered by Balboa, a Spanish explorer of great vision. To give you an idea of Balboa's vision, he first saw the Pacific while standing on a peak in Darien, which is in Connecticut.

The Pacific is not only the largest ocean, but the deepest. Tho



Mindanao Trench, off the Philippine Islands, measures more than 5,000 fathoms in depth. (It should be pointed out here that ocean depths are measured in fathoms—lengths of six feet—after Sir Walter Fathom, a British nobleman of Elizabethan times who, upon his eighteenth birthday, was given a string six feet long. Many young men would have sunk in a funk if all they got for their birthday was a string six feet long, but not Sir Walter! String in hand, he scampered around the entire coast of England measuring seawater until he was arrested for loitering. Incidentally, a passion for measuring seems to have run in the family: Fathom's grandnephew, Sir John Furlong, spent all his waking hours measuring racetracks until Charles II had him beheaded in honor of the opening of the London School of Economics.)

But I digress. Let us, as the poet Maschfield says, go down to the sea again. (The sea, incidentally, has ever been a favorite subject for poets and composers. Who does not know and love the many robust sea chanties that have enriched our folk music—songs like "Sailing Through Kansas" and "I'll Swab Your Deck If You'll Swab Mine" and "The Artificial Respiration Polka.")

My own favorite sea chanty goes like this: (I'm sure you all know it. Why don't you sing along as you read?)

O, carry me to the deep blue sea,
Where I can live with honor,
And every place I'll shave my face
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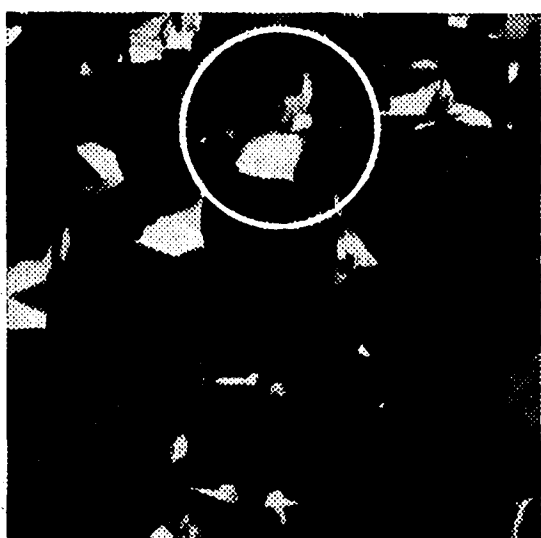
Sing hi, sing ho, sing mal-de-mer,
Sing hey and nonny-nonny,
Sing Jimmy crack corn and I don't care,
Sing Stainless Steel Personna.

I'll harpoon whales and jib my sails,
And read old Joseph Conrad,
And take my shaves upon the waves,
With Stainless Steel Personna.

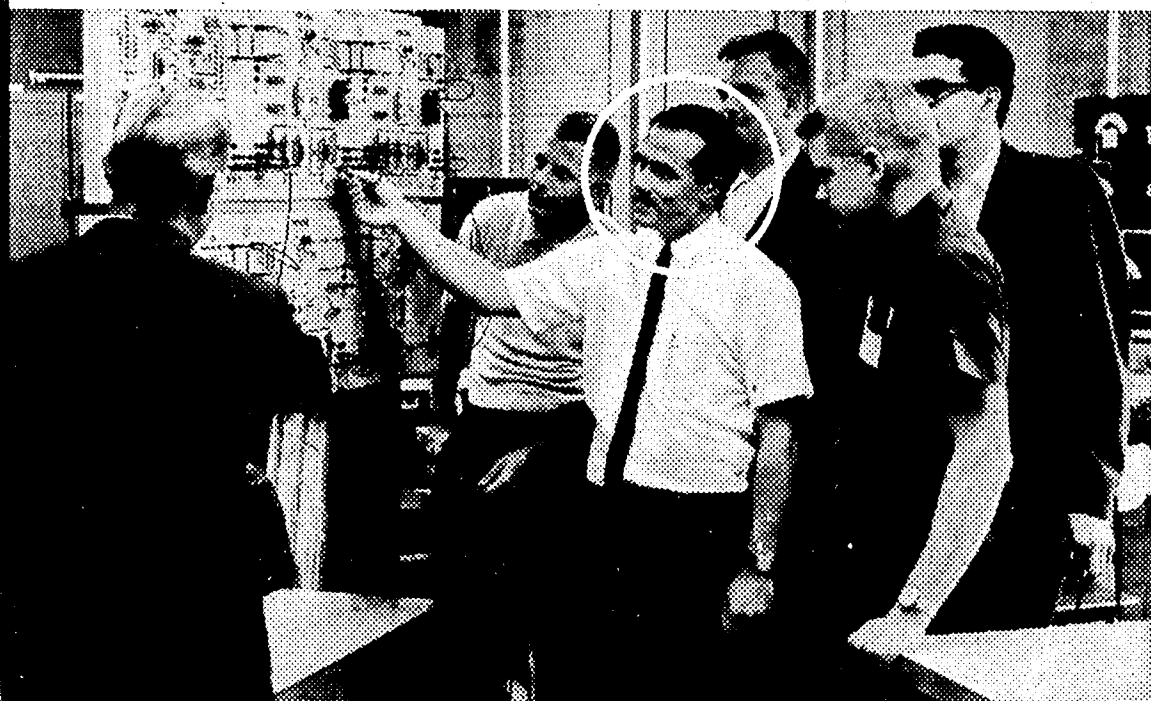
Sing la, sing lo, sing o-lee-a-lay,
Sing night and noon and morning,
Sing salt and spray and curds and whey,
Sing Stainless Steel Personna.

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Graduation was only the beginning of Jim Brown's education



Because he joined Western Electric

Jim Brown, Northwestern University, '62, came with Western Electric because he had heard about the Company's concern for the continued development of its engineers after college graduation.

Jim has his degree in industrial engineering and is continuing to learn and grow in professional stature through Western Electric's Graduate Engineering Training Program. The objectives and educational philosophy of this Program are in the best of academic traditions, designed for both experienced and new engineers.

Like other Western Electric engineers, Jim started out in this Program with a six-week course to help in the transition from the classroom to industry. Since then, Jim Brown has continued to take courses that will help him keep up with the newest engineering techniques in communications.

This training, together with formal college engineering studies, has given Jim the ability to develop his talents to the fullest extent. His present responsibilities include the solution of engineering problems in the manufacture of moly-permalloy core rings, a component used to improve the quality of voice transmission.

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Dangerous Sloth

Three weeks ago Carl Weitzman, member of student council, and Martin Kaufman, Student Government Treasurer brought up a motion on the council floor to investigate picketing inside buildings on City College grounds, and to set up machinery for taking action against such picketing. Council promptly tabled the motion for one week. That was two weeks ago, and there has still been no action of any kind on this legislation. It seems to us that that there has been an undue delay in airing this motion before Council, and this sort of delaying tactics could prove a dangerous precedent in any sort of controversial resolution in the future.

In addition to establishing precedent, this motion serves more than the purpose of a test case. The need for investigating picketing inside buildings at City College is an urgent one because picketing interferes with the class room instruction which is going on in those buildings. We feel that picketing inside buildings should be prohibited, and that those who would seek to disrupt the learning of large numbers of students be thwarted before they have a chance to subvert the basic purpose of City College, which is to impart knowledge to students.

Our Position

The Student Government sponsored anti-tuition rally on the last Thursday of March had a good deal of student support. SG President John Zippert was greatly enthused about pushing the anti-tuition drive forward, as was Student Council. So far, since the rally, nothing in the way of anti-tuition debate, legislation, or even unofficial talk has been detected from the body of student legislators. We question the inconsistency of Council's motives on an issue which vitally affects the student body, on one of the few areas where SG action will actually have significant consequences. Could Council be guilty of letting school work interfere with the handling of SG affairs? We would assume that those who run for SG office have sufficient academic ability to handle both school work and the work of Council. Or perhaps Council thinks that the Governor's veto of the free tuition mandate would effectively stifle anything SG could do.

At any rate, some sort of anti-tuition action is long overdue, and it would gladden our hearts to see a motion, an allocation, anything which would foster the cause of free higher education.

Inquiring Technographer

By PHIL BURTON

QUESTION: Do you think the administration has underemphasized the role of sports at the College?

Mike Gershman, Upper Junior, Physics. I think that arbitrary limitations on the status of sports such as basketball are not justified by a single scandal. Abolition is not the only form of control. I think a team should be allowed to play at whatever level the quality of their game permits, but I don't think they should be granted any special privileges. Many colleges find big-time sports profitable. Besides, it's fun.



Gershman



Margules

Ruben Margules, Upper Soph, Political Science, Student Council Rep., class of 1967. It is not really a lack of support for the athletic teams but rather a disinterest in them that prevails among the administration. I believe that the sport clubs deserve more support from the students as well as from the faculty. The clubs have done an excellent job in carrying the City College banner to victory.

Ray Pass, Upper Soph, Electrical Engineering. I think that back in 1950 after the basketball scandals, sports at the College were definitely underemphasized. I think it's time that sports regained its rightful place in the College's life. I think sports are an important part of college life and the absence of it here has helped City College get its name of "Subway School."



Pass



Laioff

Marshall Laioff, Upper Soph, Electrical Engineering. For too long sports at the College have not been what they should be. The administration has failed to recognize that sports are an integral part of one's education. If the administration would encourage more student support of sports at the College, they would take on a new importance in college life.



Kokish

Carolyn Kokish, Upper Senior, Sociology. Too little emphasis has been placed on sports at City College. Without a major football team, the students suffer from a lack of school spirit. A large school such as this one would profit a great deal if a greater stress were placed on sports. Stu-

MAIL DEPT.

LETTERS...

To the Editor:

Your volley of editorials attacking John Zippert and the boycott is a whooping example of a "misguided effort."

You claim to support the goal of insured free tuition; so do 99.9% of City College students! But how do you, or they, think this is to be accomplished? By editorials? By relying on the efforts of a small band of devoted campaigners? By fearing to "become involved" in demonstrating one's convictions?

We can only win through mass participation! This is what John Zippert is gallantly trying to accomplish in our school. Involvement on the part of the student is not spurred by empty talk, of which your editorials were classic examples, but by action, such as the successful boycott held by Hunter and Bronx Community College.

It is unfortunate that John Zippert's confidence in the City College student was misplaced, and that we have let passivity blind our good sense. It is not John Zippert, but we, who should feel humiliated.

Allen Mayer '68
Bernice Mayer '65

To the Editors:

Gentlemen:

I own a "home-rig" transmitter similar to the one you described in your *Industry Today* article. I would like to know where I could purchase a receiver component of the AN/GPS-46, other than the North Campus cafeteria?

Yours very truly,
Jim Fitterman 601

To the Editors:

We have just returned from classified testing area of Labs which we visited in order to secure a franchise for a service for the AN/GPS 402. We were let inside where we were allowed to test some of the models.

The following details omitted from your report. A certain amount of instability noted during the initial warmup period of the receiver, some of the models acted erratically, particularly in those on which no indication I had not yet been stalled. Since the receiver is a variable, it is extremely important to anchor it firmly, because it has a tendency to take off on its own. Be sure that receiver has completely warmed up before erecting the monopole antenna. This will suppress spurious oscillation during the warmup period. Occasionally, due to improper tuning, a screech is obtained instead of a moan when touching the grid cap, it is then necessary to rotate the main tuning until the cavity is brought into resonance. Tuning can be considerably improved if the receiver is completely unpacked before warmup.

The rest of the report is substantially correct.

Yours truly,
Harvey Allstadt EE
Vincent Barnable EE
Sid Karin ME
Neil Bernoff EE

P.S. Apparently, your report did not read page 69 of the AN/GPS-46 manual, TM 69-402, paragraph 3 states "... in cases, a hand load is better than no load. ..."

Club Notes

TECHNOLOGY COUNCIL

WEEKLY MEETING

THURSDAY — 5:00 P.M.

FINLEY 440

CADUCEUS SOCIETY

Will hear Dr. Marvin A. Man, M.D., lecture on "Homosexuality: Living, Loving and Coping with Disease, this Thursday at 12:30 in S315. Come early.

The Space Race



Students who enter the College without friends might be made to feel as if they "belong," instead of feeling apart from the school. A football team would help to make this school closer-knit and friendlier, and thus loosen the boundaries between out-of-town schools and subway schools. More sports facilities and opportunities should be available for girls at the college also. Except for basic gymnasium courses those for physical education majors, there are almost no organized sports for the girls. Teams such as a punchball, volleyball, and other "light" sports should be set up for students with average physical abilities. They would thus be able to enjoy vigorous physical activity if they wanted to and would find a good way to meet new friends.

Orientation Survey

The "discussion group" type of Freshman Orientation program, first offered to engineering and architecture students in September, 1963, has already proven itself successful.

The core of the program is a group of fifteen freshmen led by an upperclassman who is trained as a discussion leader. This leader prepares topics, writes outlines, and guides the course of the talkss.

A survey of 508 students who were involved in the program has revealed the following results:

1. What are your reactions to the discussion meeting series of the incoming student orientation program?

	%
Discussion meetings were of no value	11.7
Program should have been started at the beginning of the term	.6
Discussion groups should have been smaller	.6
Too many sessions, Freshmen students received most of the important information they needed at pre-registration orientation	5.2
Lectures were more interesting than discussion meetings	1.4
Discussion meetings of little value	15.0
Discussion meetings were worthwhile	46.5
Discussion meeting series were better than lectures	5.2
Students got to learn more about themselves and other students	5.9
Students learned to think and express themselves more clearly	4.6
Orientation program should be more on a guidance level rather than bringing out topics for discussion	1.4
Participants should be permitted to suggest topics for discussion	1.9
Total	100.0

2. What were the most helpful parts of the discussion meeting series?

	%
Finding out that people have similar problems	9.5
Right study habits	2.4
Information about the services offered by the Division of Counselling and Testing	1.6
Discussion meetings were a complete waste of time. One cannot acquire skill in self expression by this means in only six weeks	6.3
Discussion of what an engineer does. His duties and responsibilities	7.1
Free open discussion meetings	5.5
Realization of what lies ahead and steps that must be taken to realize goals	2.4
Question and Answer Period	9.5
The differences between high school and college	3.2
General information about the college	24.7
All parts were helpful. No part could be singled out as most helpful	19.8
First few lectures	1.6
Registration and Election Card	
Procedure	2.4
Engineer Curriculum	4.0
Total	100.0

3. What phases of the discussion meeting series were least helpful?

	%
Discussions about the social life and services at City College	16.8
Discussion about attendance	1.2
Discussion on reason for going to college	1.4
Discussion about marks	1.2
Discussion on discipline	2.2
Discussion meeting on responsibilities of the engineer and the advantages and disadvantages of engineering	
Lecture series	13.5
Lectures by professors	4.0
The discussion of study habits	5.2
Discussions on the ideal teacher	11.6
Discussion of what High School lacked	2.2
No part was least helpful	28.4
High dropout rate of engineering students	5.1
Discussion of personal conflicts at school and at home. These problems should be discussed with a qualified counselor	2.2
The meeting with upper class adviser	5.2
Total	100.0

4. What areas of discussion do you recommend for future discussion meetings?

	%
More discussion on how to help solve immediate problems of the freshman and how he can be helped scholastically (How to Study)	12.3
Devote some for choosing engineering as a profession	6.2
Job opportunities upon graduation	14.9
Discussion on the services available at the college	9.6
Discussion the personal problems of the student	6.2
An introduction into the structure of the school more specifically the student government etc.	7.0
Discussion group should meet with representatives of their particular field of engineering	6.2
Discussions are too general. Should be more specific	2.6
Discussion of the courses and teachers in each branch of engineering	7.0
Co-curricular activities	2.6
Discussion meetings should not be mandatory, only voluntary	0.9
Question and Answer Period	4.4
Program planning and Courses content	20.1
Total	100.0

Chem. E. Research

The modern world requires development of new techniques to meet new engineering problems. Ninety per cent of our scientific knowledge is the result of research done in the last fifty years. With the establishment of the City University of New York, City College was given the chance to make important contributions to the country's store of knowledge. TECH NEWS gives you a special report on research in the Chemical Engineering Department at City College.

By JEANETTE ALTMAN

With a thriving doctoral program and about 19 publications a year, the Chemical Engineering Department is one of the busiest and progressive areas on the City College campus. Research grants from various companies have been awarded to members of this department, including a \$3,500.00 grant from the ESSO Research and Engineering Company and another from E. I. Dupont de Nemours and Company. Dr. David Williams is the recipient of the latter.

The City University of New York is sponsoring a great deal of the research being done in the Chemical Engineering Department. Among those sponsored by the City University are the experiments of doctoral candidate Aris Christodoulou and Dr. Robert Groff, working on the deuterium concentrations factor in the sulfide-water system at high deuterium concentrations, Mr. Leon Schwartz and Dr. Morris Kolodney, working on high temperature adhesives for metals, Dr. Demitris Argyriou and Dr. Harvey List experimenting with bubble formations in a fluidized bed, Mr. Andrew Mueller, under the guidance of Dr. List, exploring free suspensions of a particle for fluidization studies, and Miss Arlene Spadafino, also under the guidance of Dr. List, doing an exploratory study on the production of protein from methane in a fluidized bed.

The American Public Works Association is co-sponsoring with City University an experiment concerning the transient temperatures in a panel heating system which is being conducted by Mr. Stephen Herman and Dr. Minocher Patell. Other experiments that City University is co-sponsoring include the work of Mr. Simon Groner and Dr. Robert Pfeffer on the centrifugal gas-particle heat exchange and the experiments of Mr. Stanley Levine and Dr. Kolodney on the rapid quenching of liquid alloys.

Arnold Goldstein, another doctoral candidate in the Chemical Engineering Department with the help of Dr. Robert Graff, is presently doing research in oscillatory math to measure thermal conductivity. Their experiments are being supported by the National Science Foundation. The National Science Foundation is also sponsoring the work of doctoral candidate Alan Peltzman and Dr. Robert Pfeffer on the evaluation of local mass transfer coefficients in multiparticle systems, and the research on optimal chemical reactor design and control being done by doctoral candidate Martin Milman and Dr. Stanley Katz. Mr. John Evangelista, another doctoral candidate, is working on a different phase of the same general problem.

Additional experiments and research taking place in the Chemical Engineering Department are being conducted by doctoral candidate Frederick Krambeck, under the direction of Dr. Stanley Katz and Dr. Ruel Shinnar, who is working on complex mixing

models for chemical reaction systems, Dr. Gerald Saidel working on general problems in engineering mathematics, Mr. Michael Grancio who is doing research on the use of continuously uniform latex particles in conducting kinetic studies of styrene emulsion polymerization, Mr. Lawrence Rutland working on mass transfer from a single sphere in stokes flow with a homogeneous reaction, and doctoral candidate Martin Sherwin studying the stability and control of continuous crystallizers.

The Permutit Company is sponsoring the research of Mr. Ted

Helfgott on the removal of phosphates under waste water by electrodialysis. Brookhaven Laboratories are sponsoring the work of Mr. Michael Rothbart who is studying the separation of sodium and cesium by ion fractionation. Mr. Robert Molbert under the guidance of Dr. Henry Myers is working on the development of thermoplastic patterns in investment casting. This work is supported by the Watertown Arsenal of the U.S. Army. Mr. Salvatore Rossetti, here on a National Defense Education Act fellowship, is working with Dr. R. Pfeffer on the feasibility of using a gas-solid suspension in the Braton Space power cycle. This work is being supported by the National Aeronautics and Space Administration. The NASA will sponsor a research project on the atomization of viscoelastic fluids.

The work will be under the direction of Dr. R. Shinnar. The doc-

(Continued on Page 8)

SYSTEMS ENGINEERING OPPORTUNITIES FOR NEW GRADUATES

MITRE works on the basic design and general system engineering of complex information, control, sensor, and communication systems for the United States Government. An important part of its mission is the development of new techniques in these areas and advancement of the general technology.

Openings are available in:

COMMUNICATIONS—for work on the engineering of communication networks, range instrumentation, tactical air control, and survivable communications.

SENSOR SYSTEMS AND TECHNIQUES—to support theoretical and experimental programs on advanced radar and optical detection and tracking systems. Work includes feasibility and techniques analysis, systems synthesis and performance evaluation.

NATIONAL MILITARY COMMAND SYSTEM—for systems analysis and feasibility studies, communications systems analysis, systems design, integration, and design verification.

COMPUTER PROGRAMMING TECHNIQUES—development and support of monitors, compilers, real time simulations, time sharing systems, etc.

TACTICAL SYSTEMS—men with interest in tactical, light-weight equipments for surveillance, communications, data processing and display... system test planning and evaluation and operations analysis.

SYSTEMS ANALYSIS—men with interest in military systems or operations analysis with a background in physics, mathematics, operations research, or industrial management.

If you have or will soon receive a degree in electronics, mathematics or physics, and have done well academically, contact MITRE. Write to R. J. Seamans, Supervisor, Professional Placement, The MITRE Corp., Box 208, Dept. CN1, Bedford, Mass. MITRE also has openings in Washington, D.C.

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Sports Here Lack Interest

By MARK BENDER

The City College sports fan is an interesting creature indeed. The enthusiasm he shows for certain sports is just not consistent with the complete boredom shown for some of the other games that come under the heading of Beaver sports. Sure, basketball games draw capacity crowds, and perhaps only basketball brings out something resembling school spirit on the part of the students, but Beaver athletes compete in sports just as fast and just as exciting as basketball with little recognition from anyone.

A good case in point is the City College soccer team, which every autumn plays its heart out for the Lavender. Does anyone even show up to a soccer game in Lewisohn? Precious few, certainly, and they are only the ones who know when the games are scheduled (because they took the trouble to find out) and the only ones who have some interest in the team.

It's not uncommon to see nine-tenths of the seats unoccupied in the grand old stadium for soccer, lacrosse or baseball.

Many students are not even aware of all the sports that are played at City College. Maybe if they were, there would be more top flight athletes than there are now.

For those who are interested, the Lavender competes in riflery, swimming, wrestling, indoor track, cross-country track, soccer, lacrosse, baseball, basketball, and fencing.

As a matter of fact, the Beaver fencers are among the best in the country, and under Coach Edward Lucia they match foils, sabres, and epees with all the ivy-league schools, including, Princeton, Harvard, Yale, Columbia, Rutgers, Navy, and many more. The rifle team, too, under the guidance of Sgt. Noah Ball, is among the best in the East.

The point is simply that if students took a more active interest in Beaver sports, the teams would fight harder with the psychological advantage of having strong support. With increased interest there might be many qualified students trying out for teams which would make the name of City College formidable in the various leagues and conferences that our teams belong to.

Don't procrastinate



RM. 335 Finley

JOIN

TECH NEWS

INDUSTRY TODAY — RANGER 9

The Ranger Exploration Program ended on a spectacular note as millions of Americans for the first time viewed live on television photos of the moon's surface sent back by a six-camera RCA television system.

The camera system sent back 5,814 quality pictures, the last transmitted moments before impact in the huge crater Alphonsus.

The pictures from the Ranger spacecraft were transmitted to antennas at the Goldstone tracking station in California Mojave Desert, and then relayed in the form of microwave electric impulses 150 miles to the Jet Propulsion Laboratory in Pasadena. There they were converted back into pictures and fed to the network television circuits.

The more than 17,000 high-resolution photographs of the moon returned by Rangers 7, 8 and 9 within an eight-month period have given scientists a way to

transcend the earth-bound limits of human vision and to study objects and scenes never before seen in detail.

The successful flight of Ranger 9 came almost five years to the day the first TV camera was used in space. The initial application of TV in space took place on April 1, 1960.

Since that time, 40 TV cameras have been successfully launched into space on nine TIROS vehicles, Nimbus I and Rangers 7, 8 and 9. They performed without fail, establishing an unparalleled record for 100 per cent mission successes. Together, these "electronic eyes" have provided nearly a half-million pictures of objects and scenes which previously were not visible to the naked eye.

Many of the Ranger photographs were 2,000 times better than any obtained from earth-based instruments. Peering through the thick layer of atmos-

phere around the earth, scientists using earth-bound instruments would not be able to detect an aircraft carrier on the lunar surface. Photographs returned from the Rangers showed craters and objects no bigger than a peach basket.

Ranger 9 carried into space the most sophisticated television camera system of the entire program. Five of the six TV cameras on the last mission were equipped with new, improved vidicon pick-up tubes capable of providing photographs with better resolution than those of Ranger 7. Two of Ranger 8's TV cameras carried the new vidicons.

The RCA television system aboard Ranger 7 functioned perfectly and returned over 4,300 high-resolution photographs of the moon before it impacted near the Sea of Clouds on July 31, 1964, and was considered perhaps the most significant achievement in

lunar exploration since the invention of the telescope.

The equally successful Ranger 8 mission sent back over 7,000 pictures of the moon's highlights, mountains, craters, and the southwest corner of the Sea of Tranquility, where it impacted on February 20, 1965. The higher number of pictures from Ranger 8, taken during the final 23 minutes of flight as opposed to Ranger 7's 4,300 during 18 minutes, was due to Ranger 8's less vertical trajectory.

The six cameras, the eyes of the spacecraft, weighed 88 pounds and were housed in a truncated cone structure 59 inches at the top. The structure was covered by a shield of polished aluminum and mounted on the hexagonal base of the Ranger spacecraft "bus." It was circled by four one-inch-wide fins to supply proper thermal balance of absorbing the sun's rays during flight.

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30" Panel	2.89 ea.	3.89 ea.
Corner Panel (24" x 24")	3.99 ea.	5.99 ea.
Wood Bases	.19 ea.	—

Vertical Bookcase
Consists of 7-20" Panels,
4-30" Panels, 4 Wood
Bases, Assembled Size
60" H x 22" L.

Television and
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Consists of 6-30"
Panels, 6-24" Panels,
6-20" Panels, 8 Bases.
Assembled Size
30" H x 72" L.

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Consists of 11-30" Panels,
6 Wood Bases, Assembled
Size 30" H x 63" L.

Corner Step-down Wall
Case or Room Divider
Consists of 4-20" Panels,
5-24" Panels, 2-30"
Panels, 6 Corner Panels,
7 Wood Bases, Assembled
Size 50" H x 50" L
x 25" L.

Room Divider/Bookcase
Consists of 4-20" Panels,
8-24" Panels, 7-30"
Panels, 8 Wood Bases.
Assembled Size
40" H x 82" L.

CITY COLLEGE STORE

Digital Computer Aids Biomedical Research

A digital computer that speeds biomedical research is now in operation at the University of Washington's School of Medicine in Seattle.

Used by the School's Department of Physiology and Biophysics the Raytheon 440 computer is an integral part of a real-time biomedical data acquisition and processing system that can provide fast answers to the complex problems fed into it.

Slated for system study are projects such as general cardiovascular research, electrical activity in living tissue; neurophysiological problems including the nervous system's information and communication processes; origin of the normal electrocardiogram; mechanical properties of the lung; and using the digital computer as a teaching machine for medical

students and to study the logical processes in medical diagnosis.

The 440's unique characteristics, according to Dr. Allan Scher, professor of physiology and biophysics, will help develop programming language and computer commands for general use in biomedical data acquisition, editing and computation.

Included in the University's system are a 440 central processor with a 4096-word main memory and 256-word fact memory; two magnetic tape units, a 70 KC, 12-bit analog-to-digital converter; an expandable 10-channel, multiplexer; and a multi-device controller. The latter allows the computer to be linked with as many as 12 external devices including special data input/output devices to be developed by the Physiology and Biophysics department.

Senior Prom

By KEN SANDLER

It's what's happening' baby! The Senior Prom is coming for one big night at the Riviera Country Club on Manhasset Bay in Long Island. That night is Tuesday, June 15th and the \$25 per couple cost includes all the liquor you can drink at a pre-dinner cocktail party, a complete dinner, and dancing from 8 P.M. to 3 A.M. to the sound of Tiny Mann and his gang.

Round trip transportation will be provided between New York City and the Club.

Tickets are on sale in the Senior Class office in Finley Hall. A \$10 deposit is required. Yeah baby, come on down.

The Manhasset Bay Location provides a beautiful panorama of Long Island Sound, with its traffic of ships and the lights of Connecticut in the distance.

Drama Group At Fordham

By SAMUEL EIFERMAN

On March 25, the Thaliens of Fordham University proved themselves to be comparable to our Musical Comedy Society with their presentation of "An Evening of One Act Plays."

The evening consisted of four one act plays entitled "Antipas," "No More Curry," "A Certain Just Man" and "Dark Lady of the Sonnets" in order of presentation.

"Antipas," a serious religious play concerning John the Baptist and Herod Antipas was written by John McGarth, a student. Herod, a very difficult role to play, was amply done by Bruce McGuire with George Horn as John the Baptist and Marie Murphy as the very beautiful and coniving wife of Herod, Herodias.

"A Certain Just Man," the third play presented, concerned a rich man, Josiah Bancroft (Brian Kassenbrock), who was killed in an auto accident and demanded admittance to heaven. Through observing his last hour alive he comes to the slow, painful conclusion that he is a sinner and begs for mercy. While this play has a good moral, the acting left something to be desired.

The fourth play "Dark Lady of the Sonnets" was a take off on William Shakespeare. The play centered around the nonsensical actions of Shakespeare (Henry Tunney) as he tried to court the virgin Queen Elizabeth (Carol Bogdanski). The acting was good considering the strain put on the actors by this type of play and was a perfect finale to an enjoyable evening.

The second play, "No More Curry" has been left for last as this was the play that really made the evening. It is a light hearted

comedy between two serious plays and tying the evening's plays together to make one enjoyable presentation.

At this point a rousing round of applause should be given to Miss Joan Malerba whose portrayal of Catherine Moore, typical woman colleges graduate, housewife and mother made this play everything it was.

The play concerns a music critic, Thurston Moore (John Mylod), and what happens to him when he starts to lose his hearing.

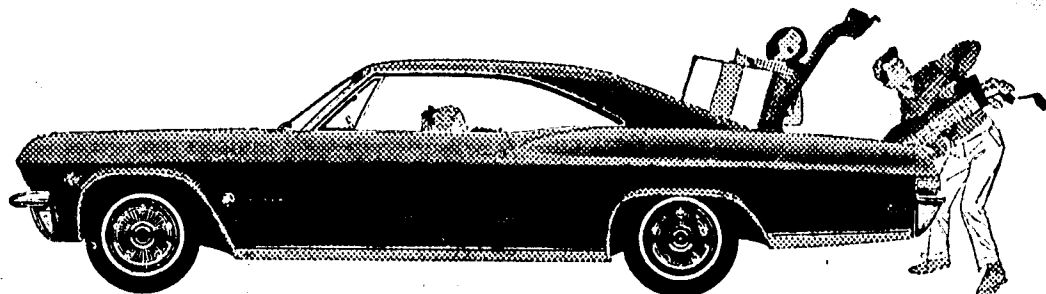
Everyone in the play puts in some superb acting which leaves the audience in a gay mood.

The only fault with the acting noticeable was the persistence of Mr. Mylod to go off by himself and seemingly ignore the actions of the rest of the cast. This fault and and made by others was smartly and effectively covered up by Miss Malerba, who is by far the best actress seen on college stages.

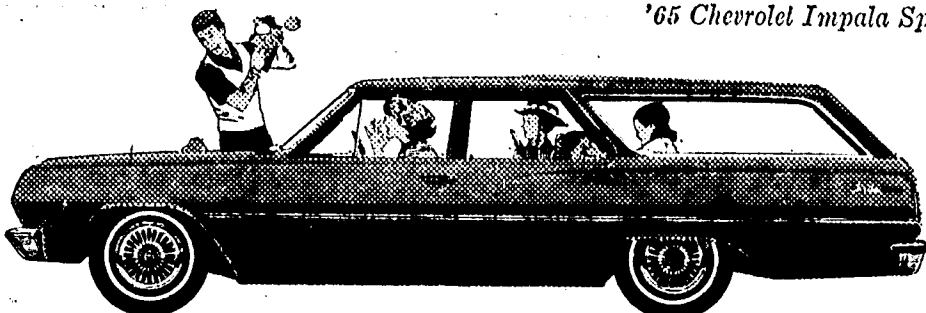
Miss Malerba is one of the few who can combine excellent facial expressions with perfect intonation of her voice to produce a characterization that is rarely equalled.

Going to plays of this sort is an excellent way to broaden the cultural background of the students at the College. It is recommended that time be made to see the next presentation of the Thaliens.

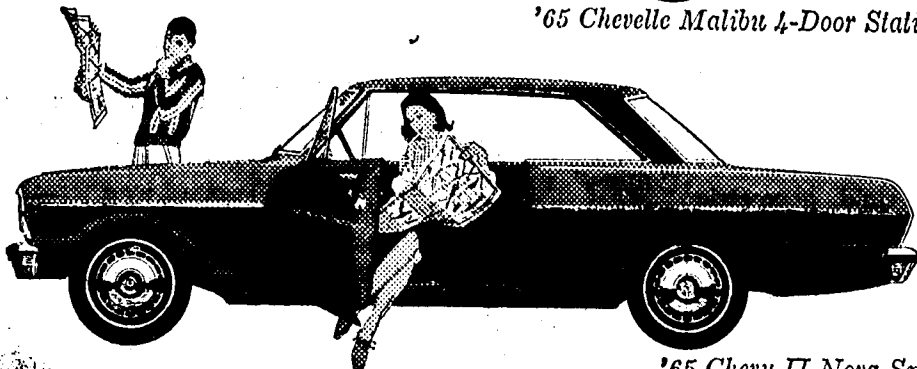
Zing into spring! in a new Chevrolet



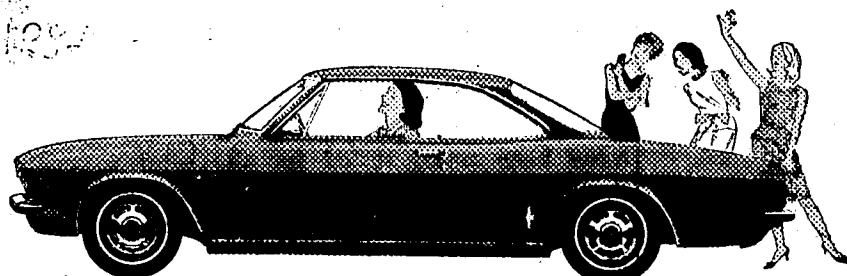
'65 Chevrolet Impala Sport Coupe



'65 Chevelle Malibu 4-Door Station Wagon



'65 Chevy II Nova Sport Coupe



'65 Corvair Corsa Sport Coupe

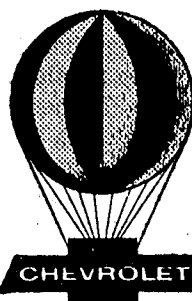
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Chevrolet. It's a bigger, more beautiful car this year. Which is why that handsome silhouette could be mistaken for cars costing a thousand—even two thousand—dollars more.

Chevelle. This one's got lively looks, spirited power, a softer ride—and remarkable room atop a highly maneuverable wheelbase. No wonder it's today's favorite mid-size car.

Chevy II. No car so trim has a right to be so thrifty. But thrifty it is, with money-savers like brakes that adjust themselves and a long-lived exhaust system.

Corvair. Ask any '65 Corvair owner how it feels to drive a car with such easy steering, tenacious traction and responsive rear-engine power. And be ready to do lots of listening.

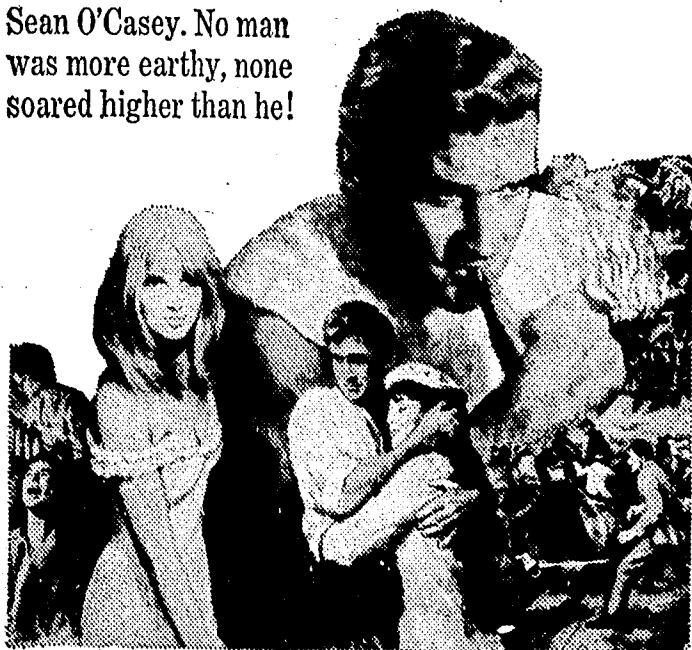


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and **MAGGIE SMITH**
Directed by JACK CARDIFF

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AMERICAN PREMIERE ENGAGEMENT starts MONDAY, MARCH 22

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ARCHITECTURE

By ENOCH LIPSON

The preceding column discussed the history of cities with respect to ordered as opposed to organic plans. The cities which developed during the medieval period were all organic while those that followed during the renaissance were ordered. The reasons for the change were characteristic of the changes occurring in European society.

In the medieval city the scale was small, human. Only the cathedral reach a great size and that was butted on both side by residential structures. The medieval city did not have a rigid city plan. The streets followed the topography of the site and the functional placement of the buildings. Each new situation was dealt with by itself, according to general rules. The organization of the city was based on spirituality. The Kingdom of God in the future made possible the cooperation of men in the present. Every facet of life was guided by rules and laws designed to preserve the stability, both material and spiritual, to the community.

The Renaissance brought the end of the spiritual ties which held men together. Material goals became the important end in life. Status was based on material wealth and power. In this new atmosphere the cities were powerless to retain their structure. With the growth of trade outside influences could manipulate their markets and rape their economies. The city, the citizen, and the church were lost in the spreading sea of commerce which carried mountains of riches to the ruthless speculators of the day. Fugers and Medicis bought town councils while other princes of commerce bought princes of the church.

A city is an architectural expression of a political situation. In its form it reflects the sins and glories of its time. The Renaissance or Baroque cities reflect the individualism, the egotism of their despotic rulers. It was for and by them that the cities were built. In plan, they dealt with the city as a whole, a single design. This entire design in all its geometric clarity was for the pleasure and comfort of a small part of the social structure which used it.

The chief new cities built during this period were homes for the king and his court. Among these were Mannheim, Karlsruhe, Potsdam and Versailles. Both politically and architecturally,

these cities represented the concentration of power in the hands of one man. The star or asterick was the characteristic shape, the palace at the center and all the major roads or avenues (originally called Militaires) radiating out from it. These cities might have been modeled after the hunting lodges upon whose sites they so often stood. The central location of the palace meant that it was visible throughout the city. Indeed the main avenues of Versailles are major highways reaching into France.

The city became an adjunct to the palace, just as the great mass of the people had become adjuncts of the very rich. The plan of the city was not designed with any respect to social or economic function. Its justification was political, to subdue militarily and psychologically both external and internal enemies. The straight boulevards were specifically designed for armies marching on parade or going to war.

The buildings on the streets were merely frames forming the avenues. In Hausmann's Paris, facades were constructed first and then sold by the meter to whom ever wished to build behind them. Only the facade was important. The avenues were horizontal paths of low proportions, far lower than in the medieval city where the buildings were higher than the width of the street. They were designed for speed, for carriages and men on horseback. The evenness, the boring sameness of the facades was necessary in order for them to be comprehensible when seen at high speed. It would be far less confusing visually to drive swiftly up Park Avenue, a typical Renaissance boulevard (although the buildings are higher than they would be in Paris), than to drive up Broadway, a much less architecturally homogeneous street.

The avenues climaxed at large plazas which often contained some architectural "jewel" such as the palace or an Arc d' Triumphant. Indeed the crude symbolism of an army marching to and through an arch is typical of Renaissance-Baroque design. The rest of the city, the residential areas, the shopping districts, the offices were squeezed in where ever they fit. The citizen no longer had a place in the city. He became a spectator, not a participant, a watcher of parades, not a walker.

New York City, while not a strictly Baroque city as s Wash-

ington, D.C., has many Baroque details. Among these are plazas and radiating avenues; Columbus Circle and the Grand Army Plaza in Brooklyn. The Grand Army Plaza is very close to traditional Baroque planning. The horizontality and size are present; there is no substantial containment of space, the bordering buildings being rather low. The scale is that of giants rather than men. We also have many examples of the architectural "jewel," the free standing status structure. Even Saint Patrick's church, which is a "Gothic" building stands on its own little plaza. This is true of European Gothic churches too now, but only where the abutting medieval buildings were removed during the Renaissance. Many of our famous avenues were originally Baroque in character. New and higher construction has since made the proportions of width to height more vertical. The Grand Concourse, Queens Boulevard, Park Avenue and Ocean Parkway are similar to the Parisian Boulevards built for Napoleon III by Baron Hausmann.

The faults of Baroque city planning are obvious. Because it has only a single aim, the glorification of a king — Versailles or a government — Washington, all other considerations are neglected. There is no physical environment in which a democratic system may flourish. The organization, so visually strong and simple is far too primitive for any advanced social structure. In addition, the disregard of topography makes construction expensive and difficult. The design destroys the land as well as the people on it.

Because the Renaissance city was built for a single man, the King, it had to be finished in a short period of time and once finished, it was a work of art which could not be changed without destroying the beauty of the plan. No allowance was made for the developments of the future, for the actions of time. While the medieval city was able to absorb all styles of building without losing its character, the Renaissance-Baroque city must always remain as designed. In Paris, they have even passed laws protecting the facades of the boulevards. If the facade were not maintained the entire pattern would be destroyed. The strong, rigid, geometric order of the Baroque city was its weakest point, for that rigidity, that brittle geometry made the destruction of the order easy. The medieval city lacked an obvious, superficial order for its was built according to the needs of the population. Its destruction could come only with the dissolution of the entire social system.

Research . . .

(Continued from Page 5)

total candidate has not yet been chosen.

Professor Schmidt, chairman of the Chemical Engineering Department, says that the department now has about seven proposals in the hands of various sponsors. He feels that the department has been making substantial progress and altogether they are doing excellent work.

C. E.

Questioned earlier this week about developments in the Civil Engineering Department, Professor Paul Hartman, head of the department, reported that faculty members were variously engaged in research and laboratory and curriculum development.

Professor D. H. Cheng and J. E. Benveniste are engaged in an analytical investigation of the effect of sonic waves on building structures. This work is closely related to one of the problems that will be generated by the anticipated use of the much publicized supersonic transport planes by commercial airlines.

Professor Bahar is presently working on problems related to the stress distribution in a dissimilar medium in the presence of cracks. This project is sponsored by the National Science Foundation. The study is of an analytical nature and aims at determining the stress field, and, particularly, the stress concentration around a crack when the crack occurs between two materials of different elastic properties. The problem occurs in aircraft when flaws exist between two different materials welded together, or in geological problems involving two rocks of different character.

Dr. Bahar is co-author of a paper on the mathematical aspects of this problem, appearing in the Journal of the Society of Industrial and Applied Mathematics for September 1964.

Some engineering students who have elected History 44, "Science, Technology and Human Culture" report they are somewhat surprised to find Professor Walter Rand is the teacher. In that course, Dr. Rand is a history teacher. Otherwise, he is engaged in teaching civil engineering courses. His current research is titled "A Study of Design Methods for Stilling Basins."

Under the direction of Professor Eli Plaxe, six specially fabricated Duff-Norton mechanical jacks have been proof tested for the Sperry-Gyroscope Co.

These jacks, to be installed as permanent components of a radar scanning installation, will be used to support a 160 foot wide by 40 foot deep parabolic screen while the bearing ring on which the structure rotates is replaced. The combined Dead Load plus Wind Load acting on the structure required that the jacks which weigh 1500 pounds each, be capable of resisting loads of 100,000 pounds in tension, 200,000 pounds in compression, and 700,000 inch-pounds in flexure.

In order to perform the laboratory tests it was necessary to design and fabricate welded structural steel fixtures comparable to the members used in highway bridges supporting 72,000 pound trucks.

The Materials Testing Laboratory has added a Sperry Reflect-

oscope for ultrasonic testing and a magnaflex unit. Both of the pieces of equipment will be utilized for non-destructive testing.

A National Science Foundation Undergraduate Scientific Equipment grant has been awarded to the College with Professor D. Cheng as the program director. The NSF fund, equally matched by the College, has been used for the purchase of a versatile high-speed fatigue tester (Vibrophone). The machine has already been delivered, and will be installed shortly. Once operational it is intended for use in the undergraduate course in Engineering Materials as well as in research.

One of the major research facilities of the School of Engineering and Architecture is the Magnetohydrodynamics Laboratory being installed in TZ05, under the direction of Professor Norman Jen. The Q-machine in this laboratory is designed for cesium plasma with 99% ionization. The plasma flux unit will have a section 64 inches long and 7 inches in diameter. Field strength will be 10,000 gauss. It was necessary to provide a 500KVA power supply for this installation.

Completion of this laboratory should promote interdepartmental research largely concerned with problems encountered in outer space.

Mindful too, of the engineering problems of the urban environment, the department is arranging a conference on Water Resources and the New York Metropolitan Region to be held at the College on June 3, 1965. Engineers, planners and administrators will meet in an all day session to explore this topic. Among those preparing papers for presentation at this meeting are Harold Wilm, Commissioner, New York State Department of Conservation; Arthur C. Forster, President, New York City Board of Water Supply and Paul D. Falco of the U.S. Department of Health, Education and Welfare. Professor Richard G. Coulter is organizing this conference.

Professor Khalil I. Beitinger has been studying the generation of waves by obstacles in a fluid stream. The Fourier Transformation technique has been employed successfully in predicting the characteristics of waves caused by a stream bed of irregular shape.

Professor Gerner A. Olsen has been working with surgeons at the Hospital for Joint Diseases on various problems connected with orthopedic practice such as hip prostheses, traction devices and scoliosis, a disease characterized by distortion of the backbone. A detailed study of the back muscles of a cadaver was made at the hospital to enable Professor Olsen to analyze the effects of the disease as a problem in structures.

ENGINEERS

Come hear and question the Presidential Candidates for Student Government, Thursday, April 29, 5 o'clock, Finley 440. Refreshments will be served Sponsored by Tech Council.

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Printers — A Problem?

Printers are a rare breed. The better part of their lives are spent amid the clatter of linotype machines and the rhythmic roar of presses. The atmosphere of a print shop will, after a time, have its affect on a man and printers are no different.

TECH NEWS is printed at Boro Printers in Manhattan. The evening shift is comprised of two men, both veteran printers and both characters enough to harass the best of editors.

Bill Schuler and his son, Dick, set the type for TECH NEWS and are the paper's foremost and loudest critics. Bill with the wisdom of his many years, is somewhat of a cynic. He's certain that



Harried Editor

our paper would be better if there were no editors and no instructions for the printers to follow. He says he's waiting for President

Gallagher to call and ask him to be editor-in-chief. He has several quirks which often make the editors of TECH NEWS shudder. For instance, he refuses to set commas in corrected galleys.

Dick is quieter than his father. He is also more subtle in picking apart the paper. Rather than point out what he believes to be faults, he suggests little changes in copy and layout and often makes an editor feel quite humble.

TECH NEWS would not be the same without these men. There might be a few more commas, a few more errors and a staff which would not enjoy hours spent at the printers as much as it does.