TECH NEWS

SCHOOL OF TECHNOLOGY • CITY COLLEGE OF NEW YORK

Vol VIII No. 3 THURSDAY, MARCH 20, 1958 By Student Fees

Civil Service Summer Employment

By John Blank

The Federal government is offering summer jobs in the fields of science and engineering to qualified students who are seventeen or older and attending college. Salaries range from $56.93 to $65.68 and are dependent on the number of years college completed.

Jobs are awarded on a competitive basis. To apply, it will be necessary to fill out an application which can be obtained from any post office, or by writing to the Second Civil Service Region, Federal Building, Christopher Street, New York 14, New York. After submitting the application you will be called to take an examination in either Brooklyn or Manhattan.

Jobs are available in performing the various professional duties associated with the fields that you have applied to work in. Some jobs are in the fields of research, development, design survey, investigation and computation; still others are available for those who prefer laboratory work,

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ENGINEERS' DAY, 1958 THIS SATURDAY

By David Katz, Math. '60

On Saturday, March 22, Engineering students at CCNY will have a chance to prove that slide-rules and T-squares are not the only tools of their trade. Hundreds of visitors are expected to invade the North Campus for E-Day, annual open house of the Engineering, Drafting, and Military Science Departments.

Demonstrations and tours will be given to instruct and delight the expected flood of high school students, faculty members, and students from other branches of the City Colleges. Registration for visitors will begin at 10 A.M. in Goethals Hall, where visitors will also receive programs containing a complete list of demonstrations, apparatus and exhibits to be seen in the laboratories.

The demonstrations, lasting twenty minutes, will begin every half-hour, with the exception of those prepared by the Chemical Engineering Department. Here, instead, visitors will be taken on a fifty minute guided tour of the Baskerville labs, with trips leaving every hour.

Visitors will see in operation such things as an analogue computer, a model

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E-DAY BALL

Miss E-Day to be Chosen at Ball

By Arnold Gross

The Engineers'-Day Ball will begin at 8 P.M., Saturday, March 22, in Finley Center Grand Ballroom. Tickets can be purchased at $2 per couple in front of Knittle Lounge in Shepard Hall or at

Barbara Schrift, Miss Tech News

the ticket bureau in Finley Center. Procrastinators can obtain their tickets at the door.

"The Composers" will provide the evening's music for your dancing enjoyment and prominent Broadway stars are expected. The crowning of "Miss E-Day" will be a highlight of the Ball.

Miss E-Day will be chosen from a number of young women representing member organizations of TIIC. She will be selected by a panel of five expert judges.

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TIIC PRESIDENT SUGGESTS TECH STUDENT GOVERNMENT

Max Zaslowsky, president of the Technology Intersociety Interfraternity Council has asked Council members to have their organizations consider the formulation of a separate student government for the School of Technology. It would serve as the "voice of the tech student body."

Zaslowsky feels that this is a necessary step, particularly in view of the failure of Council to approve a plan whereby representation would be by schools. There is at present one engineer on Council. Although of course this is no direct fault of S. G., "the gross inefficiency of meetings of Council" would discourage any tech student, according to Zaslowsky.

The most important function of a tech student government would be the disbursement of the student activities fee payed by engineering students as part of the bursars fee. For groups whose members are not exclusively tech students, this would entail submitting two budgets – one to each student government.

As he envisions a tech student government many appendages of the present S.G. wouldn't be necessary. Some commissions of Council are inoperative and "many others are a waste of time; the judicial system doesn't work – there are members of Council who don't even know it exists."

TIIC will further discuss the proposal at its meeting on March 27.

In Search of a Creative Attitude:

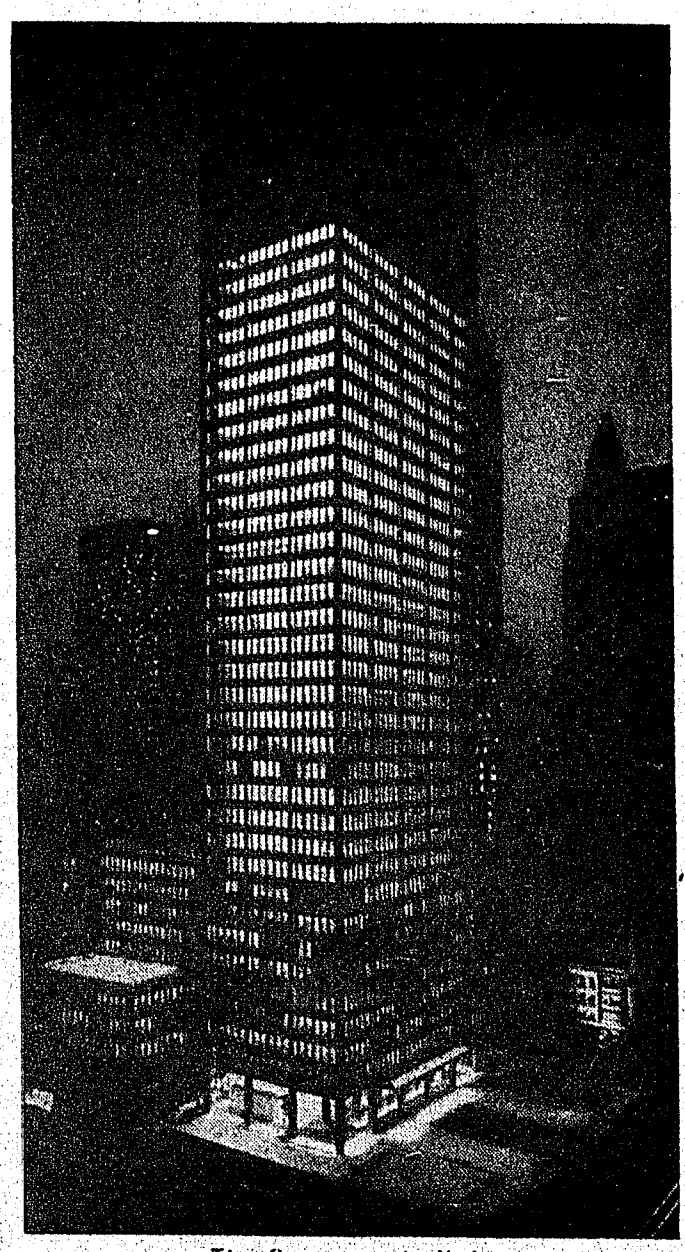
THE ARCHITECTURE OF Mies van der Rohe

By Hans Gezell, CE '58

Something unusual is happening in New York; something new and exciting. One has only to walk around our mid-town area, along Park Avenue in the Fifties, to observe the change that is taking place. New York is undergoing a long-needed face lifting. Massive granite-walled office buildings are being pounded into dust by wrecking crews. In their place a new type of building is being erected – an airy structure of glass and steel, symbol of our modern age.

The roots of this new style extend back into the early decades of this century. A group of European architects, who had become dissatisfied with the stagnant neo-classic building style of their day (of which many gruesome examples may be found among public buildings in New York) decided to form the *Bauhaus* – an institution devoted to the development and teaching of new building techniques.

The central idea, as proposed by Walter Gropius, founder of the group, was to make students of architecture aware of new methods of construction. Whereas formerly the apprentice architect had occupied himself with the design of fancy rosettes and flower ornaments to disfigure many a facade, it was now brought to his attention that architectural design must be based on a thorough understanding of the inherent characeristics of the basic materials.



The Seagram Building

Prefabricated steel construction became the basis of the *Bauhaus* style. Architecturally speaking, the ruling principle of all design was the crystal clear expression of the structure. No longer was the framework encased in a ponderous sheathing of masonry walls. Now that masonry had surrendered its load-bearing function to steel, its importance was reduced to that of a weather-resistant skin.

Thus the typical *Bauhaus* building features a wide open steel skeleton recessed behind a transparent glass membrane. The overall effect is one of great structural clarity – all supporting members are exposed – and an open plan which lends itself to a multitude of uses – factories, office buildings, apartment houses, etc. Aesthetically, the simplicity, lightness and regularity of this type of design are very pleasing.

The world's leading exponent of the *Bauhaus* style today is a German born architect who came to America in 1938 to take over the chairmanship of the department of architecture at the Illinois Institute of Technology. Ludwig Mies van der Rohe is the third member of the reigning triumvirate of contemporary architecture – the other two are Corbusier and Wright.

Whereas Corbusier has excelled in the design of concrete structures and Wright has pointed the way to many modern concepts in planning and technique, it is the work of Mies which is of the greatest importance in America today. Ferro-concrete construction, practiced to great advantage with stunning results in Europe and Latin-America, is impractical in this country due to high labor costs. America, with its great mass production techniques, demands a different approach and Mies has developed it.

The Miesian way is direct and to the point. Each building design is based on a unit of area called the module. The size of this module is determined on the basis of the overall function which the building is to serve. For the campus of IIT, Mies uses a 24-foot square module – for the Seagram building the module is 7 feet 3 inches on each side. Then all the secondary functions – offices, restrooms, lounges – are fitted into this modular design. All dimensions – ceiling height, beam span, window area – are multiples of the basic modular dimension.

The effectiveness of this type of design is three-fold:

First of all, since all dimensions are reduced to multiples of the module size the resulting floor plan is extremely logical and clear. There are no arbitrary dimensions, no odd corners. Two modules make a door, or a window – twelve modules make a room, etc.

Secondly, this standardization of all dimensions opens the way for prefabricated construction. For example, the facade of the Seagram building was welded together in two story sections which were lifted into position by a crane and spot-welded to the skeleton. American construction techniques are eminently suited to this type of building assembly.

Last, the fact that all surface areas and volumes are multiples of a common unit results in great harmony of proportions. Just as the notes of a musical scale may be related in chords, the elements of a building – window unit, horizontal slab, vertical post – now relate to each other visually in a pleasing manner.

Thus the module has become a useful tool for the modern architect. However, Mies van der Rohe's contribution to contemporary architecture covers a much greater range. His work is outstanding because of its classic proportions and refinement of detail.

The classic example of perfect proportion and detail is the Greek temple. The spacing and shaping of the columns, the joining of the round column to the square lintel, the positioning of the whole structure at the top of a wide flight of steps – all these problems were solved by the Greeks with an as yet unequalled perfection. To build in harmonious proportions was inate to the Greek mind fostered in a culture which gave equal weight to art and science, a culture where a knowledge of the fundamentals of music and poetry, harmony and rhythm, were part of every architect's intellectual equipment – as essential to him as a knowledge of building techniques.

The architects of the *Bauhaus* rebelled against the muddled confusion of architectural styles which had become prevalent at the turn of the century. Their purpose was to strip the building of all outward embellishment and retain only the barest necessities. The resulting new form was purely geometric. Rectangular blocks were positioned with respect to each other in such a way that they would become part of an overall design. Once again architects were striving to gain insight into the laws of proportion, into the interrelationships of spaces and volumes.

Mies van der Rohe

Mies was one of these architects, and out of the elements of pure forms and rich materials he forged his own style. One example of his work is the Tugendrat House, a striking country home constructed in Czechoslovakia in 1930. The exterior is austere, composed of two horizontal stone masses separated by a band of plate-glass windows. The interior is one continuous free-flowing space, connecting living, dining and lounging areas, opening upon marvellous panoramas of the surrounding forests framed in the floor-to-ceiling windows. Furniture groups of his own design are placed here and there with Spartan simplicity, contrasted with the back-drop of a rich marble slab.

All the outstanding features of Mies' work may be found in his design for a small vacation house for Dr. Edith Farnsworth in Plano, Illinois. Here, as in all of his work, the structure is the dominant element in the architecture. The steel skeleton, consisting of eight columns holding roof-deck and floor slab suspended above the ground, is completely exposed. There is no need to cover cumbersome riveted joints with fake sheet-metal strips — a deplorable custom widely practiced in America; the steel has been sandblasted and painted, the joints welded and sanded smooth. Thus, the skeleton has emerged from its hiding place in the wall to become the most elegant element of the building. This is the essence of the Miesian style.

The great architectural discovery of our century is the realization that structure can be beautiful all by itself. This point is forcefully exhibited in the graceful bridge-designs of the Frenchman Maillard, and the airy ferro-concrete domes of the Italian, Nervi. But these men are both engineers, primarily concerned with finding a useful solution to the problem of spanning a ravine or sheltering a market place. The conclusion one may draw from this is that *the most useful form is also the most beautiful.* This is the basic principle of good design.

This modern approach to architecture opens the way for the engineer to take his place along side of the architect as a fullfledged designer. Modern building techniques depart in many ways from the cut-and-dried handbook designs, and great demands are made upon the skill and inventiveness of the engineer in finding the solution to problems which arise in the course of this experimental work. Today, the execution of a successful building program requires the closest possible cooperation between architect and engineer. Such cooperation can exist only if each respects the other's intentions and abilities.

The impact of the Miesian style upon the changing New York scene may be observed in such fine buildings as the Lever House and the Manufacturer's Trust Company Bank on Fifth Avenue. Both were designed by the architect Gordon Bunshaft of Skidmore, Owings and Merril.

At this very moment, however, a work from the hands of the master himself is nearing completion in this city. It is the Seagram Building on Park Avenue, which has already attracted world-wide attention. Set back on a broad plaza stands a great tower made of bronze and glass; the countless lighted ceilings impart a seeming transparency to the structure. Bronze mullions run the length of the building, emphasizing its soaring height and giving clear expression to the facade.

Within the building, glittering elevators shoot up and down through three great central shafts, and myriads of people pass to and fro behind the bands of glass, silhouetted against the light generated from within. Framed by the 7-foot 3-inch windows which surround each office space the Manhattan skyline stretches in all directions like a gigantic petrified forest.

Phillip Johnson, the noted architect who has promoted the Miesian style in America, feels that the Seagram Building is Mies van der Rohe's most significant achievement to date. And indeed, standing on the wide stone plaza, seeing the building towering above with the sky as its backdrop, one cannot help but feel that a great monument has been created here, a symbol of our complex urban culture.

Music in the Humanities Lectures

By Martin Shapiro

This week marked the last in a series of six lectures presented in Aranow Auditorium as part of the Humanities 2 course, the purpose of which was to acquaint the engineering student with the rudiments of serious music. Still in an experimental stage, the lecture series did not delve too deeply into any one facet of music, but instead was planned to arouse interest in all phases of serious music, working on the theory that understanding is prerequisite to enjoyment.

The entire series of six lectures, each given twice a week, was presented by Professor Deri of the Music Department, a skilled musician and instructor, who must be credited with making the lectures much more enjoyable and informative than they otherwise might have been.

Each lecture was accompanied by musical examples; for the first two lectures, which covered the fundamentals of music, Professor Deri demonstrated melody rhythm, and harmony with great dexterity on his cello. Equally well received were a performance by the school chorus of early madrigals to demonstrate polyphony and a recorded performance of Beethoven's Fifth Symphony as an example of sonata form.

Professor Deri is quite emphatic in his belief that music is not for the musician alone, but that it can be appreciated by anyone with some knowledge of its structure. He did note that in teaching engineers he had to start from scratch and take nothing for granted.

All reports indicate that this term's program was highly successful, but final results will not be known until the end of the term, when those students who are taking the course will be asked to answer questions based on the lectures and to give their opinion of the series.

For those students who are interested in furthering their knowledge of music, the Music Library, F 232, maintains an extensive record collection with listening facilities. Students are also invited to attend rehearsals of the college orchestra on Thursday afternoons.

The evening of April 3, the College Orchestra will present a program that will include:

The Vivaldi Concerto Grosso
Beethovens Symphony No. 5
Liszt's Piano Concerto No. 2

EDUATIONAL PRACTICES COMMITTEE of TIIC

By Herb Lekuch

The growing concern about engineering education has precipitated the re-establishment of the Educational Practices Committee under the auspices of Tiic. The major problems facing engineering education are in the areas of enrollment, curriculum and faculty. This student committee is to concern itself in particular with the curriculum of the School of Technology at CCNY.

Because of an increase in enrollment in schools of engineering, the number of engineering graduates in coming years will increase substantially. Even with this increase, however, the essential philosophy of the undergraduate engineering education must remain the same – to impart to the student sound, basic technical knowledge and to help him develop the following abilities:

1 – the communication of his needs (both written and oral) in an intelligent manner.
2 – the investigation of areas of reference with respect to his particular wants.
3 – the imagination required to find similarities between his own work and that done in other fields.
4 – the judgment necessary in attempting to find a solution using the easiest method.

To accomplish all of this, the engineering school must base its curriculum on:

A – an integration of courses, which is necessary to show the relation between the sciences.
B – subject background in the basic sciences and its applications in engineering fundamentals.
C – the creation of courses which attempt to instill technical judgment by stimulating the creativeness of the student.

In light of these points, the necessity for a committee such as the Educational Practices Committee to serve the student body is evident.

In cooperation with the faculty, and understanding their aims on course revision (or any other type of curricula changes), the committee will offer suggestions pertaining to these revisions. These suggestions will be given after an analysis of student thought and research on similar changes in other schools. The committee therefore, will be able to review all courses (including those in the associated departments) which are necessary for an engineering degree.

The increasing enrollment has necessitated generalizing the engineering curriculum so that the existing standards of an engineering education may be maintained Specialization is to be provided by graduate school and the selective training programs of industry. Realizing this, the revision of the curriculum must attempt this (generalization) by either lengthening the curriculum or eliminating some of the specialized courses, which emphasize application rather than fundamentals and basic principles.

Even at this point the time to acquire the necessary credits for graduation at City College in engineering is usually four and one-half years with a noticeable increase in the number of students graduating in five years.

The committee will investigate educational procedures in schools comparable with City College. Such a study will entail a breakdown on facilities, use of facilities, number of faculty and student enrollment.

Course review, an evaluation of the pertinence of subject material at the College, will be based on the study of curricula in other schools. After these studies, suggestions, praise and criticism, if due, will be given by the committee.

The students invited to participate in this program will be upper termers and recent graduates.

It will not be within the scope of the Educational Practices Committee to deal with either enrollment or faculty.

The gravest problem in engineering education, today and in the near future, is the acquisition and retention of competent faculty members in numbers sufficient for the teaching load. Most people dealing directly with this problem feel that the possibility of keeping or increasing the proportion of faculty to student body is impossible. Certainly, the problem to be answered then is: how to teach an increasing number of students more with a proportionally smaller teaching body.

The research dealing with curricula may suggest the necessary new approaches to engineering education in the future. Until the day does come, when a time consuming appraisal can be done on a dynamic educatoin, any worthwhile opinions must be given careful thought and consideration.

C.E. 110, 120

Mass lectures to stay

By Allen Golden

One of the most frequently discussed changes in the engineering curriculum has been the adoption of a mass lecture system of C.E. 110 & C.E. 120. Why the lectures have met with resentment, and why, despite student objections, the C.E. dept. has expanded the lectures, are questions which have puzzled many engineering students.

It would appear that there is a dislike for a mass lecture system in any course. Learning from a lecture requires more work than from a recitation section, and work has never won a popularity contest. C.E. students represent a minority of the students taking the courses and the other students are unwilling to spare the extra time to make the lectures worth while. They feel that their major field is more important to them than courses similar to C.E. 120. Although this is far from a commendable attitude, it is the one expressed by a large number of students.

The student doesn't worry about missing something in lecture because if it is difficult to understand, it probably will be covered thoroughly in class. Inattention is aggravated by the fact that the lectures are usually ahead of the recitation sections. Prof. Hartman, Chairman of the C.E. Dept., realizes that the lectures and recitations can never be perfectly synchronized and that the objective should be a minimum spread between the two.

The lecture system was first adopted experimentally. Sample groups of students from the lecture plan classes, and from purely recitation classes were compared. The results showed that the lecture group had somewhat higher marks than the recitation group. Prof. Hartman points out that the statistics were not the only criteria in the decision to adopt the lectures but they would seem to indicate a superiority in that system.

The C.E. dept. has not adopted the lecture system simply to make life miserable for the engineering student. This department, more than any other, has felt the increase in engineering enrollment at the school. More engineers take C.E. 110 & 120 than any other engineering courses. The lecture system lightens the burden on the teachers and allows them to be used more efficiently. The Department also feels that the mass lecture method lends itself well to C.E. courses. Whether they are right or not, of course, is a matter of opinion.

As long as engineering enrollments remain at their present height, however, opinion must be considered second, efficient operation first.

BALL . . .

(Continued from page 1)

Refreshments will be served; parking facilities at Finley Center will also be available for your convenience.

The Ball is sponsored by the Technology Intersociety Interfraternity Council, which suggests that groups such as house plans, fraternities, etc., reserve a table in advance.

Start the spring season right by attending the E-Day Ball. Slide rules are prohibited; french curves will be admitted.

Ruth Rosen, Miss ASME

Georgina Ellen, Miss Chi Epsilon

Sigma Chi Epsilon, Deanna Newmark

SUMMER EMPLOYMENT

(Continued from page 1)

preparation of materials and standards testing. As you might guess, the type of job you receive will depend on the experience you have had. Those who are farther advanced in their studies may perform laboratory experiments to determine needed data.

These jobs are available in all parts of the country. Some of those available in the City are at the Brooklyn Navy Yard. It is necessary to consider the location of the job that interests you before applying.

Below is a list of jobs available. The classifications are as follows:

GS–3 completed freshmen year.
GS–4 completed upper junior term.

Boards refer to the places where the jobs are available.

1–New York Naval Shipyard
Brooklyn, New York
6–US Naval Training Device Center
Port Washington, New York
17–Watervliet Arsenal, Watervliet, N. Y.
19–Raritan Arsenal, Metuchen, N. J.
21–HQ, Fort Monmouth, N. J.
54–Civil Aeronautics Administration
New York International Airport, Jamaica, N. Y.

Application for the following classifications should be sent to the correct boards as numbered above.

Chemistry GS 3, 4 – 17
Metallurgy GS 3, 4 – 17
Physics GS 3, 4 – 17 or 21
Engineering
- Aeronautical – 6
- Automotive GS 3,4 – 19
- Chemical GS 3, 4 – 19
- Civil GS 3, 4 – 17, 19 or 54
- Electrical GS 3, 4 – 17, 19, or 21
  - GS 4 also may apply to 1
- Industrial GS 3, 4 – 17
  - GS 4 also may apply to 1
- Mechanical GS 3, 4 – 17, 19 or 21
  - GS 4's also may apply to 1

Naval Architecture – 1

The *Carnival Queen Ball* will be held on *Friday, March 28* at the *Hotel Roosevelt* in the *Palm Terrace Room*. Tickets are *$3.00* per couple. Tickets are now on sale in the House Plan Office, F 331.

Eta Kappa Nu has initiated a tutoring program for all EE 104 students who need assistance in learning the fundamentals of circuit analysis.

All interested students are urged to leave a note containing name and phone number on the Eta Kappa Nu bulletin board at Tech Crossroads.

SPORTS

Last Thursday the Civil Engineering basketball team, continuing their good-play bad-luck season, lost their second consecutive overtime game; this time by a score of 52-48 to the EE's. It took AIEE three overtime periods before they could edge out their greatly improved opponents. Al Goodman and Larry Seciniaz helped gain victory for their team by scoring 17 and 16 points, respectively. Dick Marik led the CE's with 14 points while Mike Fuchs scored 10.

In a game shortened to a half-hour, AICHE beat ASME 48-43. ASME's Mel Rimer was the game's high scorer with 20 points. Aaron Fierstein and Stan Arrow scored 18 and 10, respectively, for the Chem E's.

The previous week AICHE beat ASCE by the score of 55-53. The CE's scored 37 points in the second half to end regulation time with a tied score. In that interval, Dick Marik scored all of his 17 points. Larry Rosenfeld, also a CE, led both teams with 23 tallies. Aaron Fierstein paced the winners with 19.

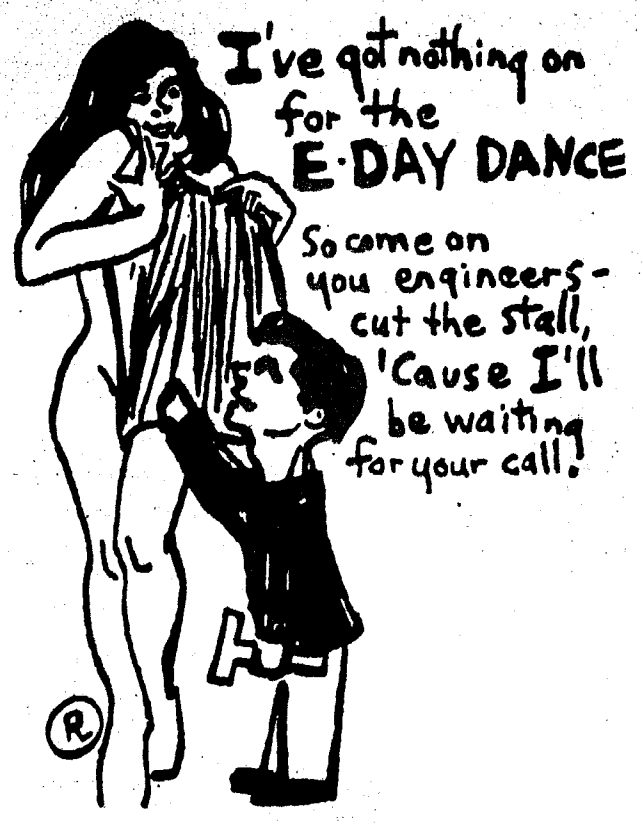
In the second game, AIEE outscored ASME 57-51. Mel Rimer was again high man, scoring 26 points. Al Goodman and Dave Newmark scored 20 and 17, respectively, for the EE's.

At the end of five weeks of play AICHE is in first place followed by AIEE, ASME and ASCE in that order. Tonight's games are:

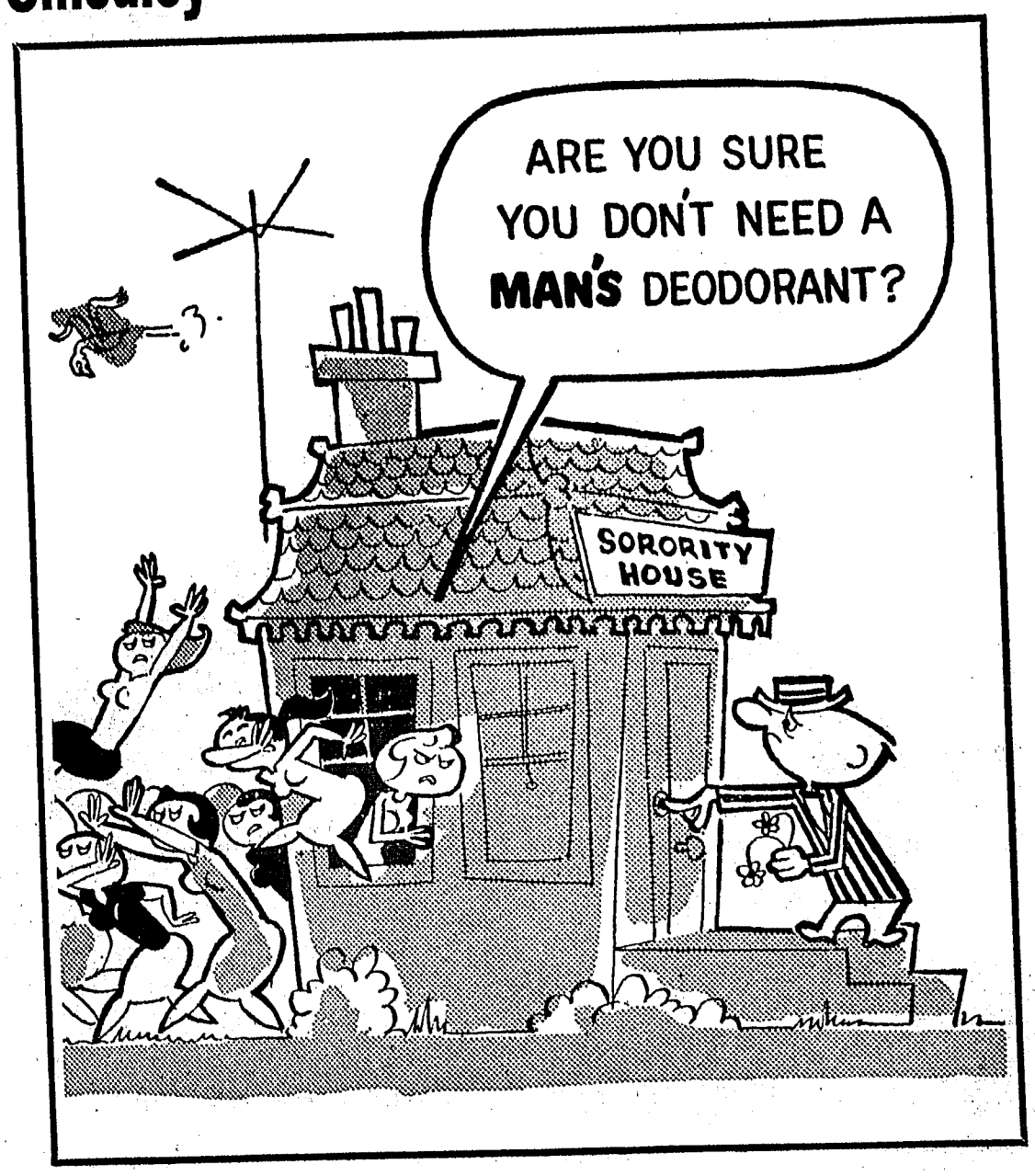
AICHE vs. AIEE
ASCE vs. ASME

The intramural program started one week late because of bad weather and poor response. Professor Ierardi is donating a trophy every year in honor of the late Professor Richards to the intramural athlete of the year. The winner will be decided on the basis of the number of activities participated in and the number of victories. Next week competition begins in fencing, softball and swimming.

MORTON COHEN



Smedley



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