



Frosh Honors Students Announced

The Freshman Honors List for June, 1964 has just been released by Dean John R. White (Engineering and Architecture).

According to Dean White, the listing of outstanding Freshmen in the School of Engineering and Architecture was instituted in order to provide rewards and encouragement to first year engineering students. The requirement for honors recognition is a B average in the first thirty credits, with all of these credits to be completed during a one year period. Letters of commendation are sent to all students on the list.

Noted on the June, 1964 Honors List are: Kenneth Barbi, Phillip Baron, Robert Benna, Barry Bosik, Ronald Bruno, Frank Capuccio, Paul Casowitz, Norman Dick, Steven Dick, Gary Fishman, Dana Friedman, Maurice Garinkel, Jacob Glanzman, David Gottlieb, and John Greco.

Also: Stevens Haas, George Halbfinger, Richard Heidrich, Michael Horton, Michael Import, Gerald Jaffee, Howard Kadetz, Stanley Katz, Ezra Kazzam, Richard Kleiman, Roger Lanny, Norman Levy, Louis Licalsi, Nicholas Maxemchuck, Dennis Moran, James Moran, Victor Oblas, Robert Osman, Theodore Pandelides, Peter Pandolfini, Charles Parker, and Stewart Personick.

Also: Bruce Pickover, Paul Pizzuto, John Rocke, Robert Rosambaum, Edward Rosenblatt, Gerald Rosenfield, Joel Schesser,

Frosh Discussion Groups Continuing

By SHELDON ZAKLOW

The new "discussion group" type of Freshman Orientation program offered to engineering and architecture students last year was found to be successful and will be continued and further expanded for the fall and spring semesters.

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 talks.

Last fall semester there were 34 freshman groups. Some of the topics discussed were: Responsibilities and opportunities of the City College Family (administration, students, faculty), personal values, purposes of a college education, character of a Gentleman, and Human Relations.

According to Dr. John D. Hickey (Student Life), director of the program, "the major purpose of discussion and discussion program is to get the student to think about himself, future opportunities, a philosophy of

TECH NEWS

A new year, a new term, new teachers. It appears that even with all this "newness" something old still remains — the stale apathetic air surrounding the engineer.

Why not break the shackles of apathy? There is, after all, more to college life than the ascetic idea of constant studying. Join a campus organization. Certainly, your membership would be greatly appreciated, and more important, it would enrich your stay at the college.

We urge you to consider joining TECH NEWS. There are numerous positions open and opportunities for advancement are unlimited. You will receive on the job training in all phases of newspaper operations.

The TECH NEWS staff meets each Thursday at 12 P.M. in room 335 of Finley. As the man says, "Come on down" — you won't regret it.

Karl Schirmer, Kenneth Schultz, Nathan Shapiro, Alan Siegel, David Siegel, Norman Silverman, Paul Siomkos, Stanley Stein, Joel Stevens, Paul Tiscione, Glifford Tisser, Richard VonGerichten, Milton Wallach, Dennis Weitz, Steven Zell and Robert Zeller.

STUDENT GOVERNMENT

All clubs wanting supplementary fee allocations must make an appointment with the SG Fee Commission by Monday, Oct. 5 at 4 P.M. No supplementary fees will be allocated after this date.

Men's Room Hosts Party

If any of you were in the vicinity of the men's room in the basement of Sheperd Hall last Friday afternoon you may have noticed what looked like a bunch of nuts sitting around eating salami sandwiches and drinking soda.

Actually it was a going away party for Assistant Superintendent of Buildings and Grounds, Mr. Budka. Last Friday was his last day at City and the men in his department chipped in to buy him a Benson citation watch.

For reasons unknown to this reporter the party was some sort of a top secret affair. It was held in a room right of the bathroom and whenever someone entered or left the room, which happened about every fifteen seconds, he carefully took out his key and locked the door behind him. In fact, when I pulled over one of the men to ask him what was going on, and he asked me why I wanted to know, and I told him I was from TECH NEWS, he promptly growled at me, "Let me see your credentials."

Mr. Budka is leaving City because of a promotion to Brooklyn College. At Brooklyn he will be Chief Superintendent. Most of the men seem to think he is a real swell guy. As one of them put it, "he deserves it, he's a real good man."

Job Market Shows Stability

By RICHARD ROSENFELD

Employment statistics for last term's graduates have just been released by the Placement Office. These figures indicate some new trends in industry hiring.

According to Mr. C. K. Meyer the figures show an increasing stability in the job situation and a leveling off of highs and lows

in salaries. Jobs taken now can be expected to last for years, without fear of layoffs.

The spectacular rise in demand for engineers, and corresponding rise in salaries, which began about the time of Sputnik, is over. Also finished is the sudden rash of layoffs and scarcity of

Election Card System Successful

The new election card procedure instituted a year ago in the School of Engineering and Architecture has proved to be successful and will be continued and expanded in the future.

According to Dean John R. White (Engineering and Architecture), "The new procedure has vastly improved the validity of our pre-registration statistics. Now what the student turns in on his election card has to be what he plans to take, because the card must be okayed by a departmental advisor. In the past, the election card and actual registration statistics had nothing at all in common."

Dean White also said that sometime in the future the student's entire program may be set up by the College's IBM 7040 computer and that "registration will then be a matter of minor changes and revisions." This, however, is still far off.

With regard to engineering enrollment, Registrar Robert L. Taylor reported that total engineering registration has been almost constant for the past three years. The figures are: 1962 - 2494; 1963 - 2488; 1964 - 2490. The engineering school contains about 20% of the total student body.



CHARLES MEYER

jobs which resulted from decreased government spending these past two years. The hiring situation has begun to level off at a realistic point which reflects the demands of industry.

A comparison of this term's figures with those released last year shows a general rise in average salaries in the engineering group and a slight decrease in the sciences. Electrical engineering salaries have risen very slightly with a decrease in the top wage and an increase in the bottom. The brightest spot on the job front appears to be in Civil Engineering. Salaries in this field rose about forty dollars in all categories.

For the future, this pattern can be expected to continue. The engineering industry is putting its feet back on solid ground.

(Continued on Page 3)

On Campus Interview Program

GRADUATING SENIORS and MASTERS CANDIDATES wishing to be interviewed by organizations visiting Campus will be expected to attend an EMPLOYMENT ORIENTATION. Many firms hire new graduates prior to graduation.

Students are urged to attend even if they expect to go on to graduate school.

ORIENTATION DATES — JANUARY GRADUATES

Engineering and Science — Thursday, October 1, 1964 at Noon — Townsend Harris Auditorium

Evening Session Students (all degrees) — Tuesday, October 6, 1964, 6:00 p.m. — Finley Student Center — Room 217

Liberal Arts — Thursday, October 8, 1964 at Noon — Finley Student Center — Room 217

JUNE AND AUGUST GRADUATES

Engineering & Science — Thursday, December 10th at Noon — Townsend Harris Auditorium

Evening Session Student (all degrees) — Tuesday, December 15th at 6:00 p.m. — Finley Student Center — Room 217

Liberal Arts — Thursday, December 17th at Noon — Finley Student Center — Room 217



DR. JOHN HICKEY

life, and social and interpersonal relationships. We want to encourage engineers to become more 'people oriented.'

(Continued on Page 2)



TECH NEWS

EDITORIAL BOARD

Editors-In-Chief

Sheldon Zaklow — Richard Rosenfeld

Associate Editor

Ken Sandler

News Editor

Jerry Shuchman

Column Editor

Joseph Bock

Copy Editor

Francine Cournos

Features' Editor

Natalie Cohen

Business Manager

Elaine Bogal

Photo Editor

Phil Burton

Faculty Adviser — Irwin Brownstein

Editorial Policy of TECH NEWS is determined by a majority vote of the Editorial Board.

Printed by: Boro Printing Co.
216 W. 18 Street 222

THE BEAUTY OF LIFE By ALAN GOLDSTEIN

This is my love
I take her hand in mine
Her dreams are my dreams
Her griefs are my griefs
Her sorrows are my sorrows
Her joys are my joys
Her life is my life
Together we face the future
We will choose our path together
We will wander this path
enclapsed
We will pass our days in the
beauty of life
Our union will consummate
Our children will be raised with
love in their hearts
Our wisdom will be their wisdom
They are we
So goes our life
The end is not an end
It is the turning of a phase
Our children will start a new
phase
With all that we endowed them
We have done fine



Frosh Groups . . .

(Continued from Page 1)

Evidence of the success of this type of program was found in the replies to questionnaires given to the freshmen at the end of last term. They were asked to evaluate the program and suggest improvements, and many asked for fewer faculty lectures (given at the beginning of the term while the discussion leaders were being trained) and more group discussions.

One volunteer, when asked why he joined for the training program replied, "This is my chance to learn how to work with people. It is my chance to do something for myself as well as for others."

For the future, Dr. Hickey is planning a comprehensive orientation and leadership training program. After participating as a discussion leader for at least one term, a student will be able to apply for the Instructor Development Training Program, where former discussion leaders will be taught to train the leaders for the coming term. After one term's experience, the Instructor will be eligible for the Executive Development Program, which is a broad gage program emphasizing philosophies related to leadership and the management of people. The purpose of this program is to make the trainee adept in working with people. Dr. Hickey believes that "the people who complete this course will be the future business executives and industry leaders." He feels that those people who participate "will gain a great deal in the kinds of things engineers traditionally seem to lack."

JOIN
TECH
NEWS

Tech Societies

AIAA

The American Institute of Aeronautics and Astronautics is a national professional society dedicated to the advancement of the arts, sciences and technology of flight in and beyond the earth's atmosphere. Included in its scope are such diverse fields as structures, propulsion, aerospace medicine, testing, guidance and navigation, astronautics and aerodynamics, space and atmospheric physics, and communications. Its 32,000 members include virtually all of the leading scientists, engineers and technical managers of this country aerospace program. Student membership in AIAA carries with it many opportunities for professional development through contact with current technical progress and the people behind it. Members receive several free technical and semi-technical periodicals, and may subscribe to others at nominal rates. They may attend AIAA national technical meetings and section meetings, and present their own work at regional student conferences or submit it for publication in the AIAA Student Journal. Student branches located at over 90 educational institutions conduct many additional activities, including field trips and regular programs featuring films and speakers from industry. Outstanding student members are eligible for Branch and National awards. Membership in the City College Student Branch is open to matriculated undergraduates and graduates and graduate students regardless of major. Applications and further details are available at all AIAA meetings, or drop a note in the AIAA mailbox in room 152 Finley.

Meetings are held Thursdays, 12:30-2 P.M.; rooms are listed in newspaper Club Notes and on posters.

Members pay three dollars per year national dues, plus local dues (now three dollars a year at CCNY); special reduced rate available to freshmen and sophs.

ASCE

Membership in the City College Chapter of the American Society of Civil Engineers is open to all students who express an interest in the field of civil engineering. The College's chapter, established and maintained by the parent organization, aims to be a supplement to regular laboratory and classroom work, and also a means by which the Society keeps in constant touch with the education of future engineers.

Membership in ASCE is considered to be the first step on the way to professional development; the Society seeks to lay the foundation upon which the professional man will someday be raised. On the college level, it provides an opportunity for the beginnings of professional associations with fellow students and with men who have distinguished themselves in the field. Each member of ASCE is in contact with the technical and professional progress of civil engineering through various publications, meetings, and national conventions.

Student meetings are often given over to guest speakers on technical or professional subjects. Movies and slides aid in giving the student an idea of the problems and projects he will en-

counter when he graduates. Field trips to points of engineering interest provide a first-hand view of work in progress. Chapter activities also include various social functions, dances, and smokers throughout the year.

Further information about ASCE can be obtained at any of the weekly meetings, which are announced in the student newspapers.

ASME

The American Society of Mechanical Engineers provides information to mechanical engineering students on the latest developments and techniques in industry. Lectures are frequently given to ASME members on Thursdays, during the 12-2 break.

Members of ASME receive such benefits as the "Journal of Mechanical Engineering" monthly, discounts on technical publications, and free admittance to mechanical engineering society meetings in New York.

In addition to its professional activities, ASME has occasional parties or dances. Dues are five dollars per year for membership in the national organization.

IEEE

The student chapter of the Institute of Electrical and Electronics Engineers is the largest tech organization on campus. The group invites representatives from industry to address them, and answer questions about opportunities and employment in their respective firms. These lectures cover current topics in electrical engineering and serve to keep students up to date with the expanding field of technology. To enable members to become better acquainted with outstanding members of the faculty, the IEEE invites instructors from the E.E. department to lecture on the vast field of electrical engineering, or one of its particulars.

IEEE meets every other Thursday at 12:20 p.m. either in Steinman or Harris Auditorium. Consult the "Club Notes" section of school newspapers or posters placed in north campus buildings for specific information.

A membership fee of one dollar (\$1.00) per term entitles students at the College to membership. It is the policy of the IEEE to open meetings to all interested students, but other events planned are free only to members.

SAE

The Society of Automotive Engineers is a technical society whose purpose is engaged in the "design, construction and utilization of self-propelled mechanisms prime movers, components thereof, and related equipment." The student branch through its meetings will try to keep the student up-to-date with the latest developments in the related field of mechanical engineering.

Through student enrollment the SAE provides the student with tools which when properly used, will help him to advance as an engineer. Among the benefits of student enrollment are the following:

- a subscription to the SAE Journal — 12 copies/year;
- an opportunity to purchase

(Continued on Page 3)

Stability At Last

Both engineering enrollment and the job situation have finally stabilized. The passing of the decline in engineering registration and of the manpower shortage is welcome to us. In the future, engineers will have a type of job security that will allow them far greater opportunity than they have had in the past.

Traditionally, engineers have worked without individual contracts with their employers. Spurts in hiring, followed by widespread layoffs, were common. Since Government defense spending, the prime cause of mass hiring followed by layoffs, has decreased, companies are now hiring staff members rather than men for individual contract projects. This is good, for now the engineer can work without the constant fear of a layoff. Now he can grow within an organization and acquire a wider knowledge of industry operations, thus increasing his professional value.

The constant engineering enrollment has also contributed to the stability of the job situation. A constant enrollment tells employers that there will be no sudden shortage of young engineers. This, in turn, prevents them from hiring more men than they actually need, in order to have a "manpower stockpile" in an emergency.

The engineering manpower shortage is over. We are glad that it existed, because it forced our starting salaries up to a high level. Now we are glad that it is over. Now a beginning engineer can choose an employer that satisfies his professional goals and expect to stay with that employer long enough to achieve those goals.

Participate

The Class of '68 has joined us and most of these new freshmen are about to enter their fourteenth consecutive year in a classroom. They come with the expectation that college will be an extraordinary experience. They hope to find a free, more enlightened atmosphere in which they can find themselves, but most of them will be disappointed. All have heard that City College is "a glorified high school," and it will be if the student is unwise. The class of '68 stands on the threshold to four of the most memorable and productive years of their life or at the threshold to four years of methodical study and boredom.

The factor which will make the difference in the value of your college career is participation. The education you will receive in your classrooms is academic, but it is not the stuff of life. It will not turn boys and girls into men and women.

Participation may take many forms, from belonging to a fraternity to a school team . . . or to a newspaper. The key is active participation. From any of the hundreds of organizations on campus there is benefit to be derived. There are potential relationships and a knowledge of people that will be more valuable than knowledge received in your classes.

Those of you in the Class of '68 will be urged to join many activities. If you will take the time to explore the possibilities that exist you will hear one phrase repeated over and over again. Members of different organizations will tell you that they have learned more from their participation than from their professors. Believe them.

iesINTROSPECTION

duates. Field
engineering in-
t-hand view
Chapter ac-
various so-
chers, and smok-
ear.
ation about
ed at any of
s, which are
udent news-

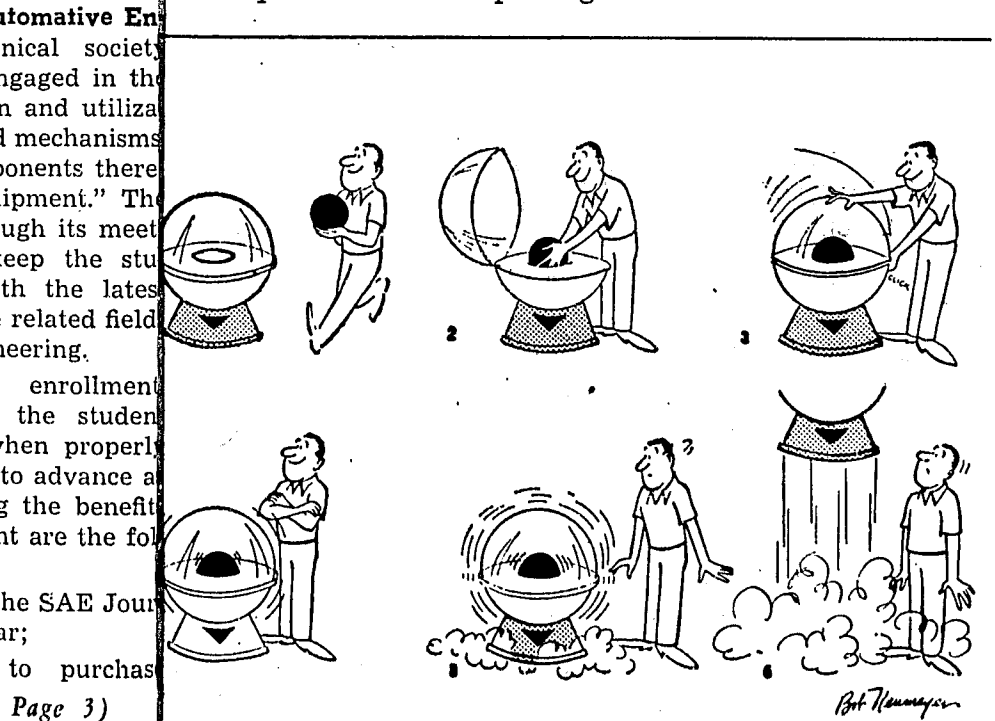
E
ciety of Me-
provides in-
anical engi-
the latest de-
niques in in-
e frequently
members on
e 12-2 break.
receive such
Journal of Me-
g" monthly,
ical publica-
stance to me-
g society
k.
professional
as occasional
ues are five
membership
nization.

Now that the warmth and leisure of summer has faded and the usual scramble for the choice programs and the good teachers has ended, school work has, as per usual, ushered back into our routines. But with the beginning of a new term comes the task of once again determining just how accurate our friends' tips were about the teachers we chose. While all groggy from those lazy, hazy days of summer, we'll all begin the watching and waiting, trying to penetrate the personality of that inscrutable man with the chalk dust all over his pockets. What measure of man will he be? Educator, professional, or both? What really constitutes the good teacher?

In endeavoring to answer these questions, one must note that while the accomplished professional engineers of the faculty do enhance the prestige and reputation of the school and do perform invaluable research, this person does not constitute the total or good teacher. The engineering approach to life — engineering discipline as it were — acquired from these individuals in the form of manner of reasoning, of reasoning, and of business-like and mature approach to problem solving is essential but a poor substitute for such things as making a point understood and establishing rapport between students and faculty. This lack of patience, guidance, understanding, and congeniality afforded to the students, is the primary reason that so many of us find ourselves in the untenable position of dropping engineering. A classroom should be a place for enjoyable learning and not a place for tedious business.

Despite this, there are some who would tenaciously argue that this consideration is flimsy and ought to be judged mal-
tistically; that the fine reputation attained for the School of Engineering & Architecture by the many degrees and accomplishments garnered by the faculty is of primary importance. This, however, is not entirely true and follows logically from the acceptable fact that a teacher's worth can only be measured by his ability to teach. His ability to keep abreast of his field through productive research programs or further education serve no purpose other than in-
jecting a degree of timeliness and practicality into the courses he must teach. Engineering teachers should bear this in mind and thusly should devote the majority of their interest and concern to the field of education not to engineering research. Writing "teacher" on one's income tax form does not necessarily make one a teacher.

Unfortunately, however, one cannot assess this problem easily by stating what should and should not be. What really constitutes the total or good teacher is elusive and best, barely definable. But one thing is for certain, whatever measure of man he should be, it definitely is not the pragmatist that far too many engineering teachers actually are. Teaching, unlike engineering, is not rigidly defined. It is rather a humanistic relationship involving situations that should be judged on their own individual merits. It is not something that can be equated mathematically to yield results such as school reputation and prestige. This only students can truly achieve. It is attitude and responsibility; acceptance on the teacher's part that he is to impart knowledge at all costs. It is dedication; awareness on the teacher's part that the minds he molds must be handled with care lest they be chipped. It is satisfying labor; an atmosphere of mutual work and discovery. But most important of all, teaching is that friendly informal chat between student and teacher that quiet hello when passing on the street.



(Continued from Page 2)
other SAE Publications at reduced rates;
accessibility to the student branch room — which contains many papers given at SAE meetings throughout the country; and the free use of the SAE Placement Service (SAE Enrolled Students are eligible, without charge, to make use of the service in seeking summer jobs and positions after graduation).

SAE Student Enrollment is only \$3 per year plus \$50 per term for student branch dues.

Membership in the SAE is open to all mechanical engineering students.

SAME

The Society of American Military Engineers. City College Student Post was chartered in 1950. It is one of sixty Student Posts in colleges throughout the country. These Student Posts are affiliated with national SAME, with headquarters in Washington, D.C. National SAME has awarded the "Best Distinguished Student Post" award to the CCNY Post for the past seven years, a record which is unparalleled in all of the other fifty-nine Student Posts.

Meetings are held every Wednesday evenings in Harris 003, at 5 p.m. These meetings feature speakers from such varied fields as: the Verrazano-Narrows Bridge, crime detection, missiles, and air defense.

Each term the Society goes on trips to Army and civilian engineering installations. Recently trips have been made to Washington, D.C., Buffalo-Niagara, West Point, Wallops Island, Va., Groton, Conn., and White Sands, N.M.

Membership is open to all ROTC cadets, infantry and engineer, and to all engineers and architects. If you are interested in membership just ask anyone in uniform wearing a red, white and black shoulder cord.



A U.S. co-ed serves ice cream in Europe

PAYING JOBS IN EUROPE

Grand Duchy of Luxembourg, Sept. 9—Students are urged to apply early for summer jobs in Europe. Thousands of jobs (office, resort, factory, farm, etc.) are available. Wages range to \$400 monthly and the American Student Information Service awards travel grants to registered students. Those interested should send \$2 to Dept. T, ASIS, 22 Ave. de la Liberte, Luxembourg City, Grand Duchy of Luxembourg and request the ASIS 36-page booklet listing and describing every available job, and a travel grant and job application.

PATRONIZE YOUR
• ADVERTISERS •

Tech Societies . . .

SCAIA

The College's Student Chapter of the American Institute of Architects had its beginnings in the "Architectural Society," which was founded in September, 1961. In the fall of 1962, the Society became a student chapter of the New York City branch of the national Institute.

SCAIA has a full and varied program for its membership of approximately one hundred stu-

dents. The local chapter of the AIA is pledged to help the student organization by inviting students to meetings, providing speakers, and helping to acquaint the student architect with the profession that he will enter.

Membership in SCAIA is open to all architecture students; new members are "probationary" members, who are not obligated to pay dues. At the end of the term, if he finds the Society to his liking, a probationary member may become a full-fledged SCAIA member.

Job Statistics

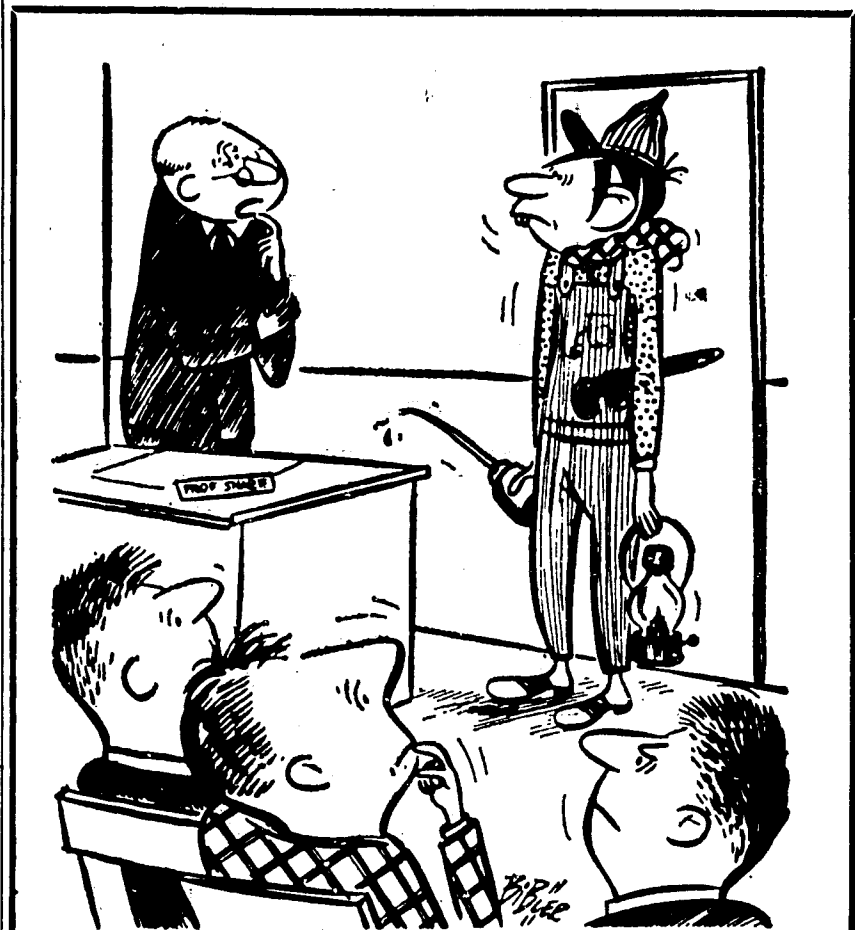
(Continued from Page 1)
JANUARY, JUNE and AUGUST 1963

STARTING SALARIES IN PRIVATE EMPLOYMENT

Degrees	No.	Average Monthly Salary	Median Monthly Salary	Total Range
Chemical E	36	587	575	542-640
Civil E	15	554	540	505-600
Electrical E	123	607	595	520-766
Mechanical E	60	600	591	542-750
Liberal Arts	24	391	400	303-540
Chemistry	16	475	513	333-583
Physics	11	537	580	373-700
Mathematics	13	524	538	391-623
Biology	3	408	400	321-504

JUNE 1964 EMPLOYMENT STATISTICS

	Private Employment	Civil Svce.	Grad. School	Milit.	Avg.	High	Low
EE	100	21	25	5	612	700	542
ME	61	7	4	3	604	672	540
CE	9	17	4	—	598	640	540
Chem E	38	5	10	1	600	665	520
Math	15	—	4	—	488	584	400
Chem	9	2	5	—	495	625	416
Physics	5	3	6	1	507	607	433
Bio.	8	3	1	—	411	508	368
Arch.			Incomplete				



"At just what bookstore did you buy your engineering supplies?"

DON'T BE A CAMPUS-SAD-SACK

BUY WITH CONFIDENCE!!

AT THE

CITY COLLEGE STORE

"ON THE CAMPUS"

Store Hours 8:45-9:00 P.M.

133 St. & Convent Ave.

BOOK REVIEW

Machining Principles and Cost Control by Robert G. Brierley, Tool Application Specialist, Metallurgical Products Department, General Electric Company, and H. J. Siekmann, Vice President, Marketing, Martin Metals Company, Division of Martin Marietta Corporation. 250 pages plus index; 218 illustrations; 6-3/8 x 9-1/4; McGraw-Hill; \$11.00. Publication date: May, 1964.

"The constantly increasing costs of labor, machine tools, and materials and growing competitive activity, both domestic and foreign, are placing new challenges before the metal cutting industry. Metal forming by the chip-producing methods must be done, not only faster but at a lower unit of cost, if a profit is to be realized. Inefficiency in machining practices has been tolerated or disregarded by many for years because no real squeeze was felt. The era of such complacency has ended for most, and time is rapidly running out for the few remaining."

With this opening paragraph, Brierley and Siekmann launch their book, "Machining Principles and Cost Control," published by McGraw-Hill this month.

"The application of efficient

machining standards, practices, and techniques," the authors maintain, "is contingent on a knowledge of the fundamentals of tool design, application and maintenance of the basic tool, machine and operating relationships. The establishment of machining conditions which will produce parts at minimum cost or at maximum rate requires the elimination of causes of unpredictable tool life."

"Machining Principles and Cost Control" was written with these considerations foremost. It includes only those subjects having direct bearing on the practical application of tools and the means by which optimum economic results may be realized. Theory is kept at a minimum. A special feature of the book is the Hi-E concept and the inclusion of a

unique slide rule called the Hi-E Calculator which makes it possible to solve minimum costs and maximum production cutting speeds without resorting to complex mathematical calculations.

The book, which is divided into 16 chapters, begins with an explanation of the economics of machining and goes on to a discussion of the terminology used in the tool cutting industry. Chapter 3 presents and compares cutting tool materials, their physical properties and characteristics and how these are related to cutting tool effectiveness. Chapter 4 explains the reasons tools wear out and the methods used for measuring tool failure.

A description of how to set up and conduct tool life tests and interpret data is presented in chapter 5. This is followed with a review of the transitions in the cutting tool designs and a discussion on the merits and limitations of each. Next comes a chapter discussing the selection and applica-

tion of the more popular types of disposal inserts.

Chapter 8 deals with the elements of the cutting tool and what each contributes to the cutting operation, while chapter 9 describes the relationships among cutting tool, work material and operating conditions which contribute to workpiece finish. The principles of chip control, chip control devices and their application are presented in chapter 10. There follows a chapter explaining the workpiece and its influence on tool life, operation conditions and final results. A review of microstructure and its influence on machinability is included.

Chapter 12 describes the forces acting on a tool, how these forces are influenced by changes in the tool and operating conditions, and explains a practical means for determining the horsepower required for a machining operation. The final chapters of "Machining Principles and Cost Control" explain the application of machining fundamentals and economics by the use of the Hi-E Calculator which is furnished with each book.

Robert G. Brierley is a Tool Application Specialist in the Metallurgical Products Department of

General Electric Company where he assists customers in the application of cemented carbide and oxide tools and in the training personnel in all parts of the U.S.

H. J. Siekmann is Vice President, Marketing, at the Martin Metals Company, a subsidiary of the Martin Marietta Corporation. There he is active in the market development and sales of advanced metallurgical products and processes in various areas, primarily the jet engine turbine field.

Further information on Brierley and Siekmann's "Machining Principles and Cost Control" may be obtained from the McGraw-Hill Book Information Service, 3 West 41st Street, New York, New York 10036.

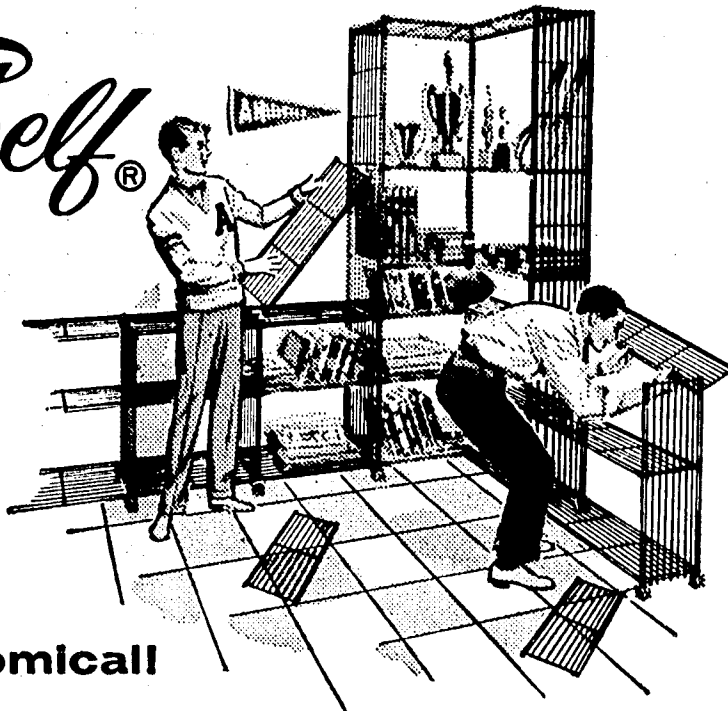
IF YOU CAN READ THIS THEN READ TECH NEWS

Just What You've Needed for Your Books!

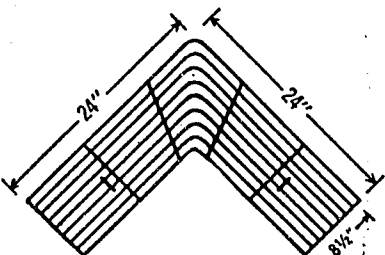
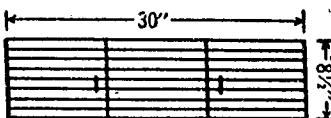
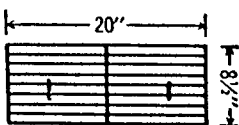
Erecta-Shelf®

Design it yourself...
To Fit Your Space
and Needs

So easy... So economical!



Countless Units
can be designed with
these 4 PANEL SIZES



You don't have to be an engineering major to design and assemble your own bookcases, room-dividers, or TV and Hi-Fi units with Erecta-Shelf. It's fun... simple... practical and inexpensive!

By combining just 4 panel sizes in satin black or gleaming brass wrought iron, there's no limit to the number of arrangements you can design to fit your space and needs. Note that straight panels can be used horizontally or vertically... and horizontal panels may be attached at any desired height on the vertical panels.

EASY TO ADD TO OR TAKE APART

Anytime you wish to make your unit taller, longer or deeper simply add more Erecta-Shelf panels... or change the arrangement completely. It's a cinch to disassemble for moving too. Plan your unit (we'll help you if you wish) and come in for your Erecta-Shelf panels and free detailed brochure.

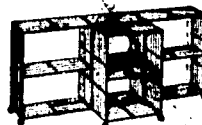
ERECTA-SHELF PRICE LIST

Panel Sizes	Satin Black Finish	Gleaming Brass Finish
20" Panel	1.99 ea.	2.99 ea.
24" Panel	2.39 ea.	3.39 ea.
30" Panel	2.89 ea.	3.89 ea.
Corner Panel (24" x 24")	3.99 ea.	5.99 ea.
Wood Bases	.19 ea.	—

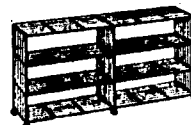
CITY COLLEGE STORE



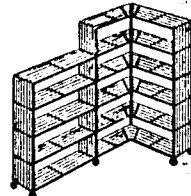
Vertical Bookcase
Consists of 7-20" Panels, 4-30" Panels, 4 Wood Bases. Assembled Size 60" H x 22" L.



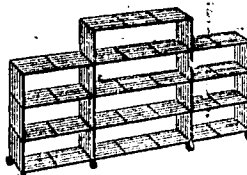
Television and Phone Unit/Bookcase
Consists of 6-30" Panels, 6-24" Panels, 6-20" Panels, 8 Bases. Assembled Size 30" H x 72" L.



Horizontal Bookcase
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.