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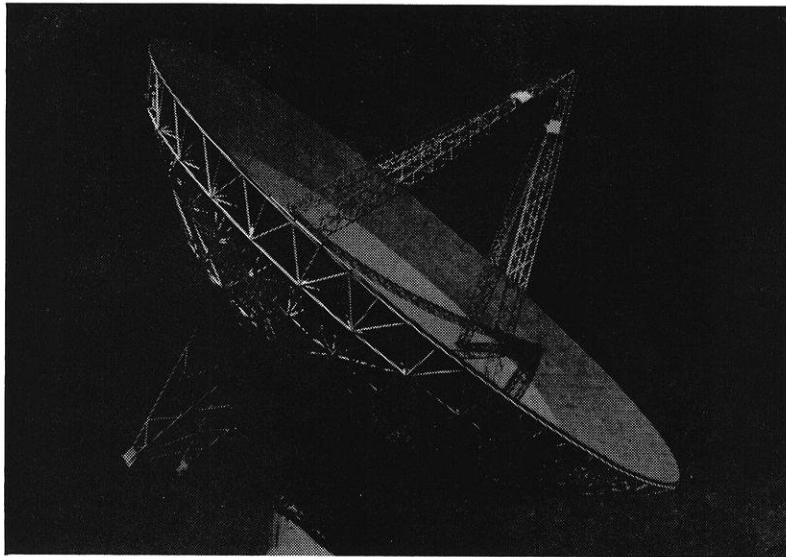


university of wisconsin
1969 college of engineering exposition

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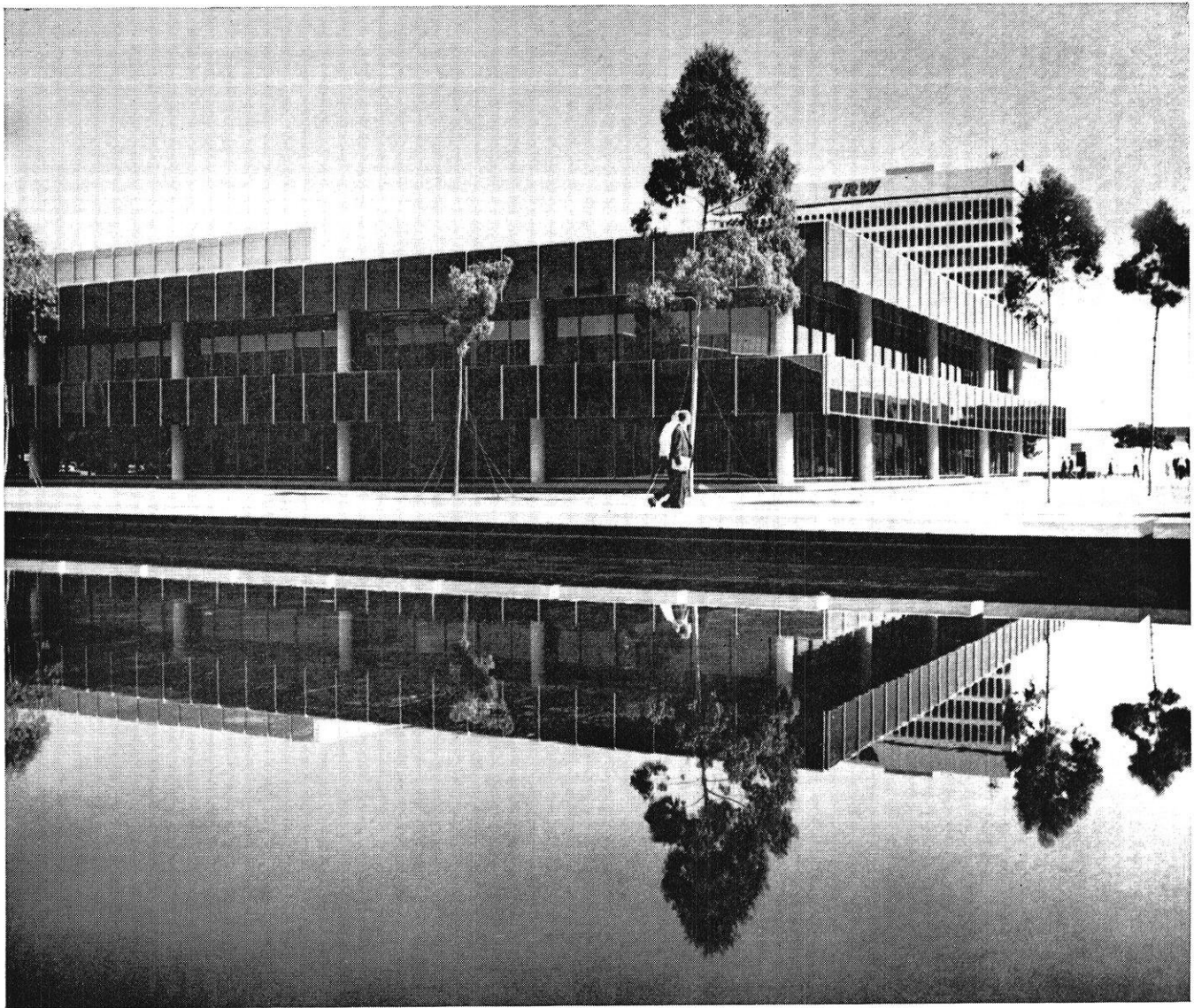
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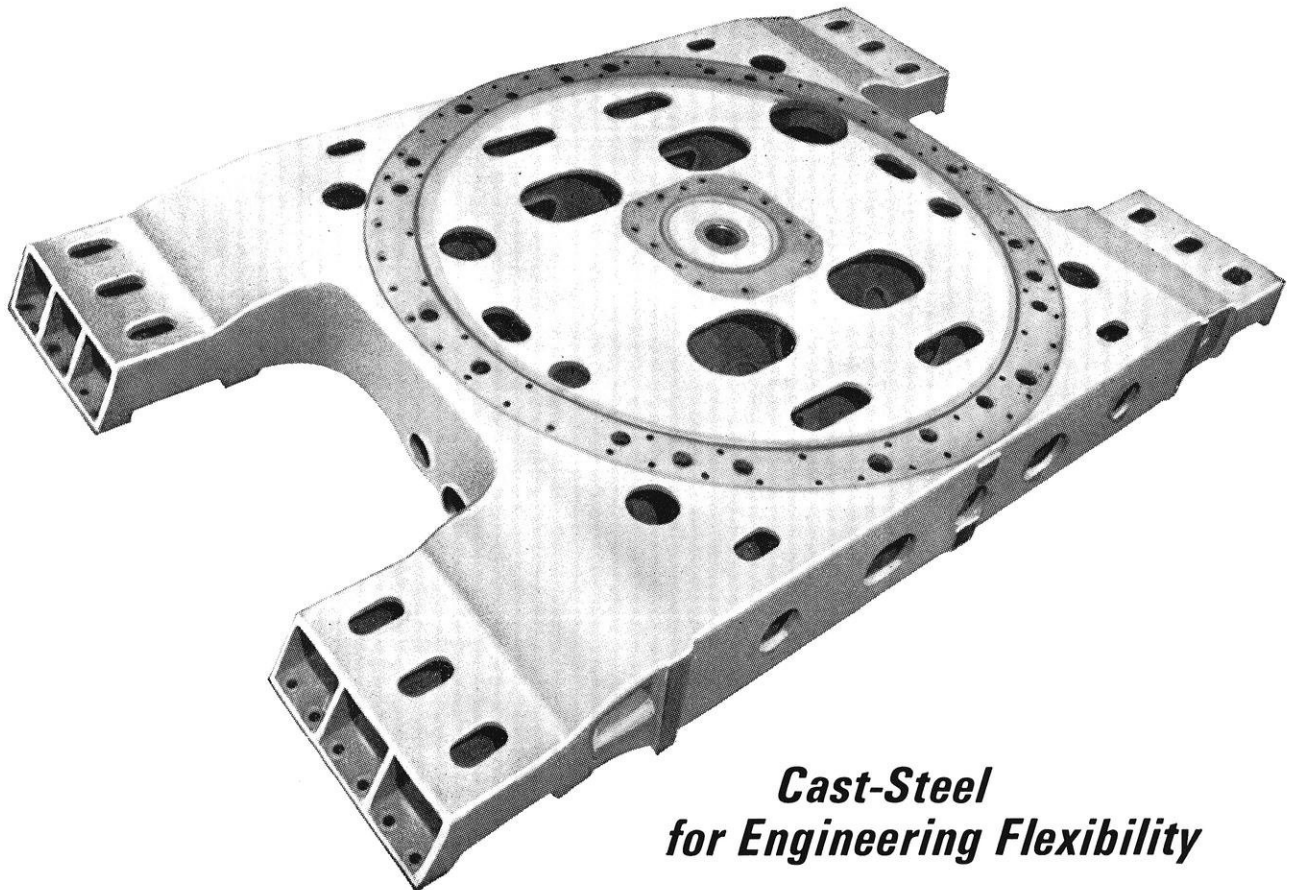
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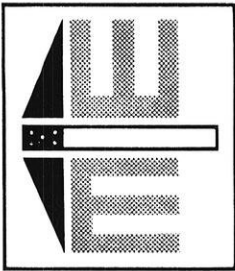
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for Engineering Flexibility***



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wisconsin engineer

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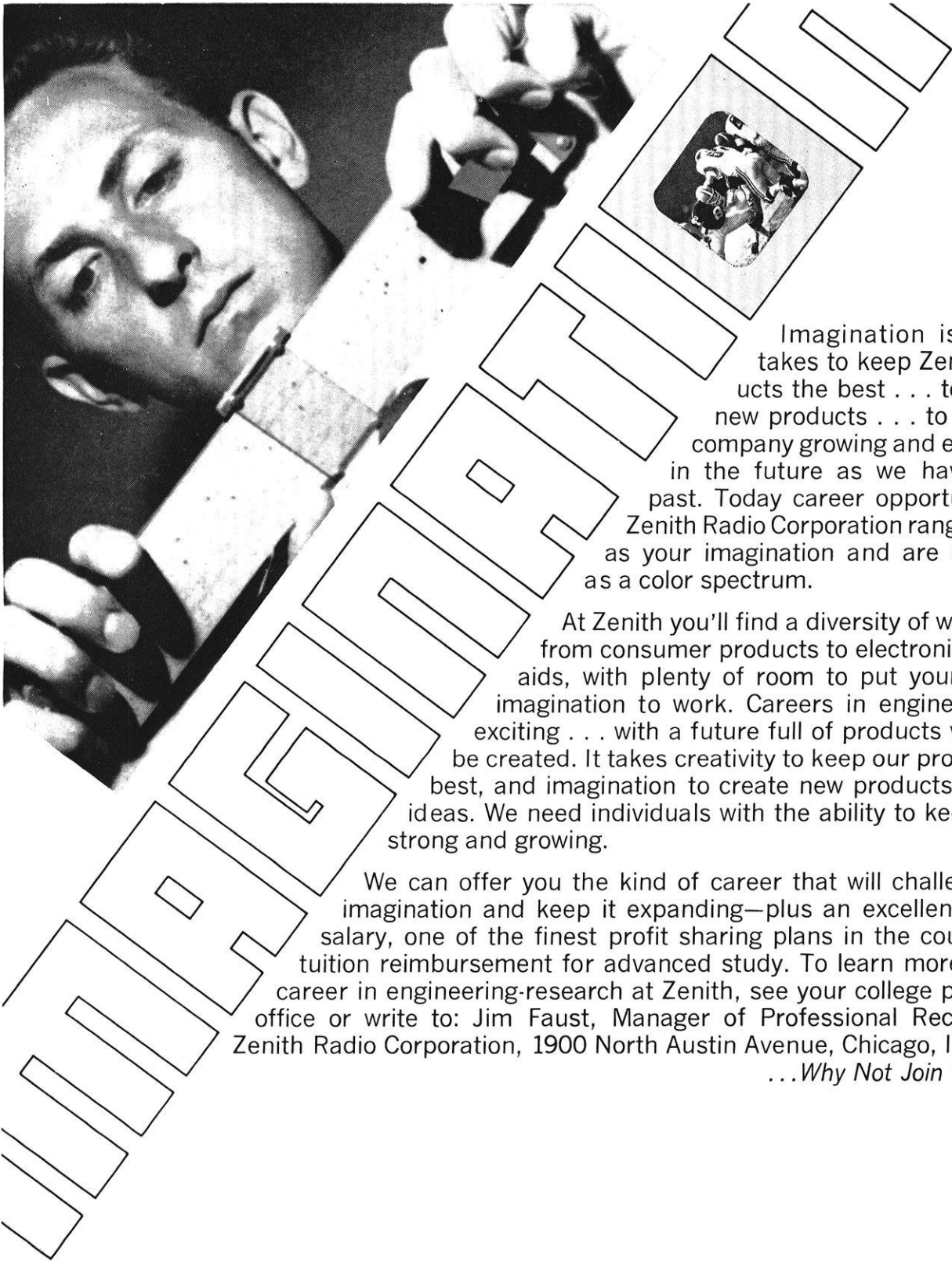
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THE WISCONSIN ENGINEER

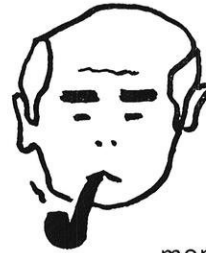
CECIL* THE PROFESSOR



Yes, someone should encourage more student-faculty interactions . . .



. . . better teaching . . .



. . . more flexible curricula . . .



. . . more meaningful educational experiences!



Who me?



With all the *important* things I have to do?

*Webster's Dictionary define Cecil as "dimsighted"

TIME — A BIG HANG-UP

The present state of affairs regarding changes in Engineering Education today is reflected by Cecil's attitude — much talk but little action. But don't be too hard on Cecil — especially if he's untenured. For many of the "important things" he has to do *are* important — such as proving he is capable of scholarly work (sic publish or perish). And then there is Cecil the tenured professor — he, too, has important things to do, especially if he's distinguished in his field. There are papers to write and present, speaking engagements, professional society commitments, consulting, not to mention important University committees.

And so it goes . . . When you get right down to it, who can afford the *time* to make *significant* changes in Engineering Education without jeopardizing their main goals (which for the faculty member is to master his subject, and for the student is to learn). What is the answer?

Here are some first steps. As far as the faculty is concerned, hire someone whose full-time job is devoted to improving Engineering Education. One man *can* do a number of things: (1) First, and most

important, he can serve as an "ombudsman" for the students. (i.e. a man they can go to with complaints). (2) He can coordinate teaching experimentation throughout the College. (3) He can be a depository — the library — for all meaningful publications on Engineering Education (including laboratory). (4) He can be the editor of a monthly report (in the Wisconsin Engineer?) on teaching methods, experimentation, new curricula, etc. to be found throughout the world.

As far as the students are concerned, they should petition their department chairman for (1) course credit for taking an active part on committees such as the Engineering Education Committee, or as members of the Polygon board (2) less-structured curricula (for example more free electives) and other changes which would make their educational experience more meaningful.

The most important step, of course, is the ombudsman who by collecting and *recording* the suggestions of the students can serve as the student's voice to the various faculties.

Professor R. Moll

Letters . . .

These two letters were passed on to the Wisconsin Engineer by Professor Sell.

February 25th

Dear Prof. Sell,

Now that spring is here, a problem has arisen which did not formerly exist. During the winter, when the ground was frozen, the trip between ME and EE was somewhat tolerable. Now there exists only puddles, mud holes and other hazards where frozen earth used to be. Please do something about this ungodly mess. (A suggestion might be to lay planks between the two buildings.) If this request is not met immediately, demands will be forthcoming.

csfasbmeaee
(concerned students for a
sidewalk between ME and EE)

February 26th

Dear Prof. Sell,

You have now had sufficient time to remedy the messy situation that exists between the ME and EE buildings. I have as yet seen no effects of the action which was urgently requested on February 25th.

I THEREFORE DEMAND THAT YOU ACT UPON THIS DEMAND.

In addition, I demand that the sidewalk be well lighted (I'm afraid of the dark) and that it be wider than the 6 inch curb that is there now.

If these demands are not met immediately, we will shut down the University by squirting epoxy glue in all the door locks.

President of csfasbmeaee



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Wisconsin



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E.S.S.R.— A Mouthpiece That Generates Steam But Little Motion.

by Don Propp

In the March, 1969, issue of **Wisconsin Engineer** I was shocked to read that my three and a half years of education on the UW engineering campus have been a failure. Such was ESSR's appraisal of the present day training of engineers at UW. This dismal analysis was based on two ill-founded and generalized postulates which were neither clarified nor substantiated. I quote the first — "The engineer is, at present, not integrated effectively into society." Since "effective integration into society" conveys no meaning to me beyond a concealed or unconscious belief that society (a faceless, nameless blob) has some sort of claim on an engineer's life and work, I attempted to find the gist in the accompanying paragraph. The lines claimed that the engineer's work has an enormous impact on society at large; a fact certainly true and much to the convenience and benefit (unearned) of mankind at large. Witness the skyscraper, electric light bulb, automobile, television, motorized toothbrush, and a host of other handy consumer products conceived and born in an engineer's mind. But, of course, ESSR means the bomb impact and pollution impact. I submit that the unsightliness

around us is due primarily to political decisions, not engineering decisions.

The very next line stated — "the engineer's education does not foster the fundamental aesthetic and ethical values of that society." Which values? Of which particular segment of society? ESSR's perhaps? About the only values fundamental to the whole society are freedom and a guaranteed yearly income! If ESSR feels that UW engineering education doesn't foster freedom, then I think it had best get a closer view. An armchair view is sometimes blurred by generalization.

The second major postulate was equally vague. I quote — "The technical curriculum does not reflect the real educational needs of students." Once again, the clarity and conciseness of "real educational needs." ESSR uses the summation but fails to enumerate the specifics (things, by the way, which curriculum committees can't dodge). A half apology is offered in the form — "the detailed nature of the changes needed to correct the present weaknesses in the engineering curriculum cannot be specified completely without thorough discussion and careful planning." A trite observation which says little

for the present engineering administration and student-faculty committees.

Then, aha, in the last portion of the article ESSR reverses itself and decides it will try to make a stand in the form of seven changes, some of which are as vague as their sires above. Let's look at them:

1) "Aesthetic, social, and ethical considerations should be emphasized in design courses." A masterful idea, but what the hell does it mean?

2) "Required courses should be kept to minimum." If a student is allowed to choose his own program within a department, ESSR shall have succeeded in defeating itself. It is fairly well known that many students feel that the program is so broad now that given the opportunity they would prefer to study the things that interest and intrigue them. For instance, some guys are nuts on computers. Do you really believe that they would elect to study Swahili culture, thermodynamics or English history if it were optional? If the required curriculum were minimized (abandoned?) ESSR would then really have cause to complain of socially

(continued on page 22)



● 1969 COLLEGE OF ENGINEERING EXPOSITION

"The three day 1969 Engineering Exposition represents the culmination of more than fourteen months of work to many of us. It has been a tremendous opportunity . . . It has been a chance to learn to organize and work together effectively, a chance to exercise imagination and a chance to meet people."

Gary Mitchell
General Chairman,
1969 Engineering Exposition

The 1969 Engineering Exposition will officially open at 9 a.m. on Friday, April 18, with 31 industrial and over 100 students exhibits, displays, and demonstrations. Pre-judging of society exhibits is scheduled for Monday, April 14, with final setting up taking place on Thursday. A reception for student and industrial exhibitors at the Alumni House will also be held on Thursday starting at 9 p.m. The hours of the exposition are from 9 a.m. to 9 p.m. on Friday and Saturday and from 12 noon to 6 p.m. on Sunday. Friday has been designated as High School Day and Saturday night as Date Night.

There will be three plaques given to societies — First Place, Second Place, Third Place — in addition to an award of a traveling trophy.

The First, Second, and Third

Place prizes will be awarded strictly on the basis of the final judging which will be held all day Friday, April 18. These awards will be presented Saturday at 9 a.m.

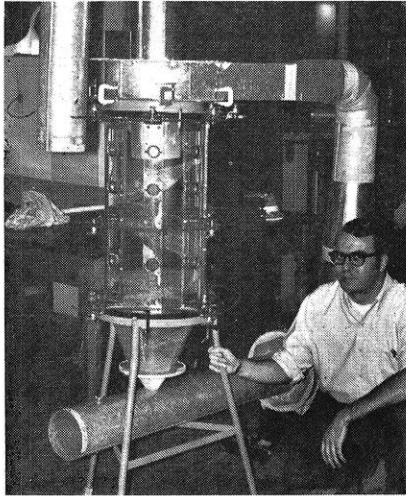
The traveling trophy will be a combination of points representing the total effort of the society for the exposition including the judges rating, button sales, and any additional demonstrations manned by the society.

Four students who will be exhibiting are shown on the opposite page and a list of industrial exhibitors follows.

Allen Bradley
Automatic Electric Co.
Eeloit Corp.
Bendix Corp.
Euehler Ltd.
Burroughs
Central Foundry
Chicago Bridge & Iron

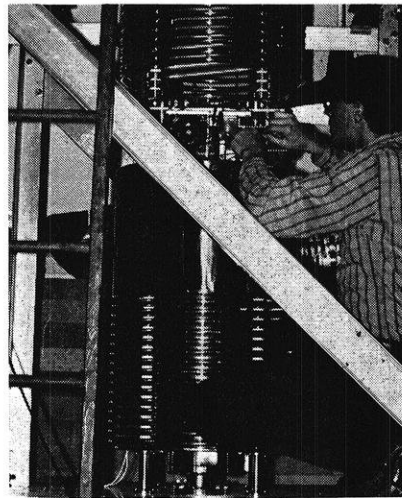
Collins Radio Co.
Corning Glass Works
Dept. of the Army
General Telephone Co.
Desoto Inc.
DuPont
Honeywell
IBM
International Harvester
Jacobson
Johnson Service
Kaiser Aluminum
Kohler Corp.
Marathon Oil Corp.
Mobil Oil
Oak Electro-Netic
Oil Gear Co.
Oscar Mayer
Proctor & Gamble
Red Arrow Sales
Scientific Prod.
Sundstrand
Waukesha Motor Co.
Wisconsin Power & Light
Wisconsin Telephone

Jeff Brady, a junior in Mechanical Engineering, is exhibiting a laser welder. The slender rod in this right hand is a \$2000 ruby rod used in the laser.

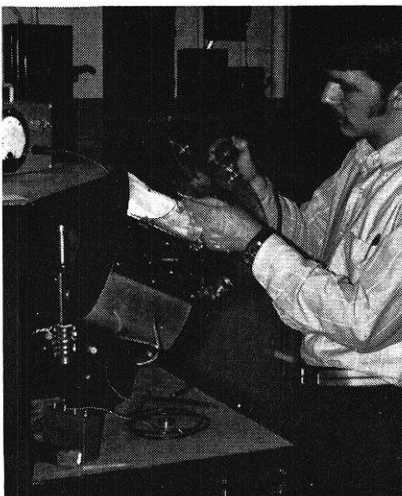


Tom Winter is shown at the left with his cyclone separator in operation. Tom is a junior in Chemical Engineering.

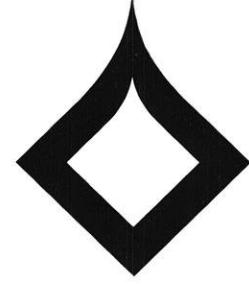
The large spring-like cylinder at the right is part of an electron microscope on which Jay Walters, a Nuclear Engineering junior is working.



Dick Meyst calls his contraption a three axis centrifuge. It is used to accelerate small animals along all three axis of rotation.



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Civil Engineering Summer Camp

by Dave Vannes



Dave is a summer camp alumnus and also Business Manager of the Wisconsin Engineer.

Each summer the Department of Civil Engineering conducts two engineering summer camp sessions at Taylor Lake, Wisconsin. Taylor Lake is located about 10 miles south of Grandview, Wisconsin, in southeastern Bayfield County. It is here that students put to practical use the theory that they have learned in their basic surveying and route location classes taught at the Madison and Milwaukee campuses of the University.

The history of summer camp can be traced back at least to 1896 when newly graduated civil engineers would spend two weeks in June camped on Picnic Point learning the art of surveying. Later in the 1890's, students stayed at a hotel in Portage, Wisconsin, and worked on surveying projects in the Portage area. Beginning in 1910 the camp was held at Devil's Lake near Baraboo, Wisconsin. The length of camp had grown to four weeks and students were required to complete many projects that required a practical use of surveying. Some of these included topographic surveys, triangulation surveys of Devil's Lake, barometric

leveling, and a railway location problem. Camp was held at Devil's Lake until 1956 when the tourists became too much of a problem, and the camp moved to the present site at Taylor Lake.

The Taylor Lake camp consists of about 20 permanent metal buildings, many of which remain from the days when it was a Civilian Conservation Corps (CCC) camp in the 1930's. Northwestern University purchased the buildings and operated a surveying school from 1951 until 1956. The University of Wisconsin leased the buildings during 1957 and later purchased them in 1958. The land is leased from the U.S. Forestry Service, the camp being located in the Chequamegon National Forest.

The camp session is now six weeks long, and during this time students spend four weeks in C.E. 410, a four-credit course of general surveying projects. The major project of this course is making a topographic map, including the transit-stadia survey, reduction of stadia field notes, plotting of the stadia traverse, plotting

of points of elevation determined by the stadia survey, interpolation of contour lines, and the addition to the map of all other topographic features. Students work in pairs for the making of the topographic map, as opposed to most projects when all of the students of one cabin, usually eight, work together obtaining field data, using the data to construct maps and reports. For the group projects, one student is chosen to be project chief to coordinate the field and office work of the other students. Some of the other projects in C.E. 410 include the running of a land line, the platting of a subdivision, plotting of a hydrographic map of a local lake, barometric leveling, stream gauging, triangulation and trilateration surveys using electronic distance measuring devices, and plane table surveying.

The reconnaissance, preliminary design, surveying, final plans and cost estimates for the construction of one mile of county trunk highway are the essential elements of C.E. 411, a two-week, two-credit course.

(continued on page 22)



This is a 1916 photograph of "The Bunch" at the Devil's Lake summer camp.

We developed TV transmission. But a lot of engineers still don't get the picture.

Like, we'll ask a graduating engineer:
"What opportunities do you think an engineer has
if he works for the telephone company?"

And, zap—we get a blackout!

Well, we think the company responsible for
engineering innovations such as the transistor, radio
astronomy, high fidelity and stereo recording,
magnetic tape, synthetic crystals, negative feedback,
sound motion pictures, microwave relay, electronic
switching, the solar battery and telstar deserves a
consideration that's strong and clear.

When the Bell System recruiting team comes
to your campus, be sure to talk to them. Or ask your
Placement Director for the name of the Bell System
recruiter at the local Bell Telephone Company,
an equal opportunity employer.

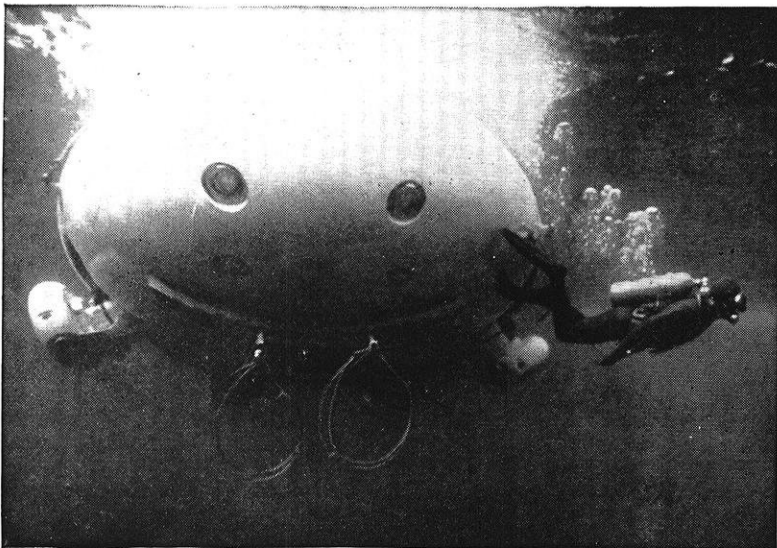
We'll turn you on.



"We've got to stop



"These old fishing boats have had it. We need more floating factories, taking the haul from dozens of trawlers, processing it on board, into frozen fish fillets, canned fish, fish oil, fish flour. This takes materials that can survive the sea."



"Take Lockheed's *Deep Quest*. Nickel maraging steel from our research, enabled it to dive to a record depth of 8,310 feet. Whether you start with steel or copper, nickel adds properties that make it work—strength, toughness, resistance to corrosion."

"Drinking water? In desalting the sea, the name of the game is heat transfer. You need a conductor, so you need a metal. But you need one that will stand up to saltwater corrosion. Copper-nickels helped make multi-million-gallon-a-day plants practical."



fishing like St. Peter™

Art Tuthill of International Nickel talks about working the sea—and the role of metallurgy in solving population problems.

“With a world population of roughly three billion, one billion are underfed,” says Tuthill. “Yet in the sea there’s enough protein for thirty billion. But harvesting it takes more than the will. It takes hardware.”

Tuthill covers the marine industry—shipbuilding, ocean engineering, water desalting. He talks like an ecologist, an economist, an engineer. He’s a materials expert, on call for any problem in his field.

“And,” he says, “we need more from the sea than you can get with a net. Our demand not only for food, but water, and minerals, is growing relentlessly. It takes machines the sea can’t destroy.

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We are 32,500 people in 18 countries—miners, market builders, researchers. We work at the whole job—from geodesy to agronomy, metallurgy to economics, theory to practice. We bring new opportunities to underdeveloped lands, new payrolls, new tax income.

Nickel in the ground is useless. We put it to work.

INTERNATIONAL NICKEL

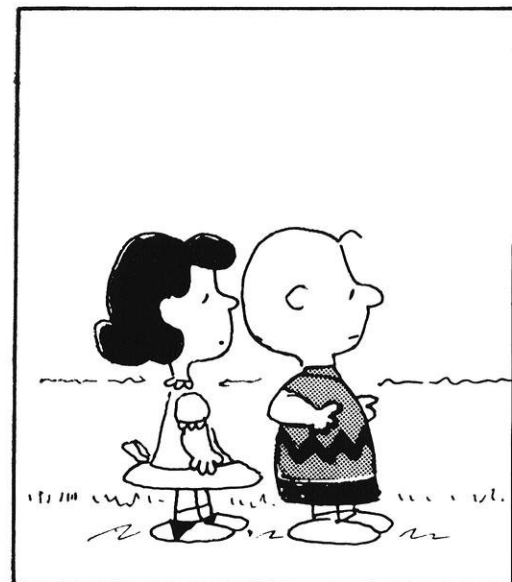
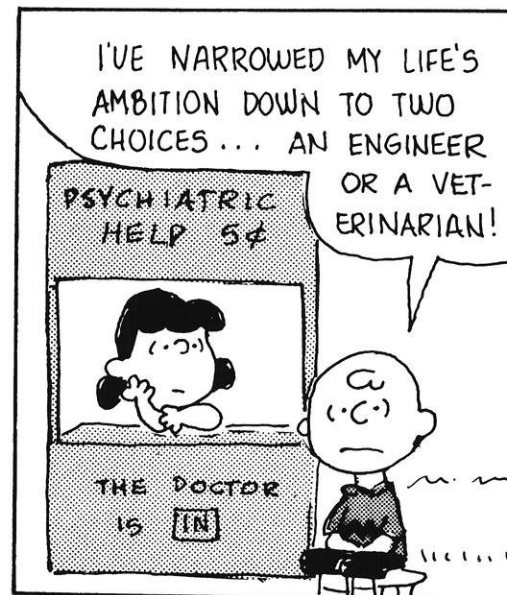
The International Nickel Company, Inc., New York, N.Y. • International Nickel Limited, London, England
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How many of you took great pride in your first grade art projects, vowing one day to be a famous artist? And, how many of you went on to become great artists? Not many, I bet. Let's just say that most of you left the world of art at about the finger painting stage. Yet, many of you may still harbor secret desires to "get out there and draw". Now we can't draw for you, but we can do the next best thing — we can show you what would happen if you engineers started picking up drawing pencils instead of slide rules. The Wisconsin Engineer proudly presents your favorite cartoons done by engineer artists.

if GREAT were done

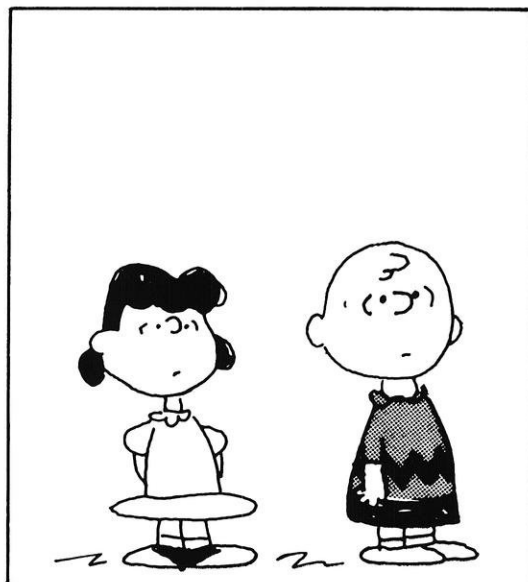
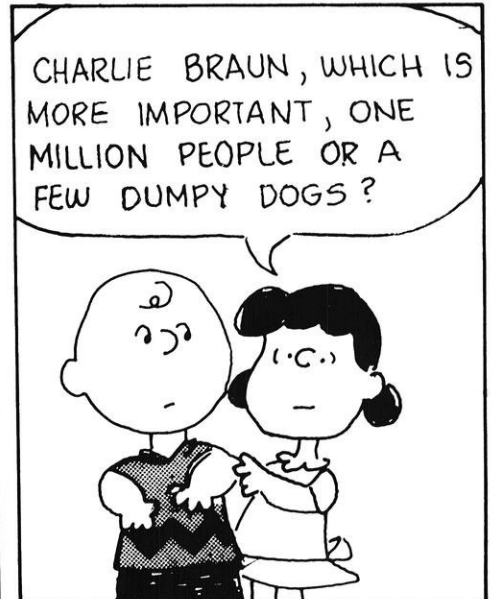
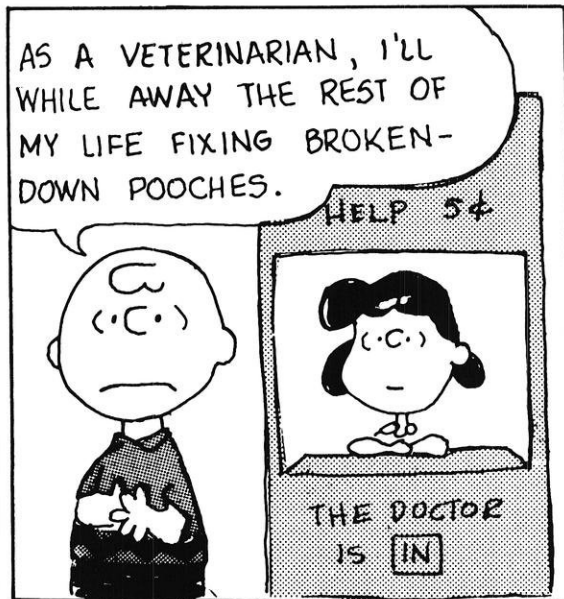
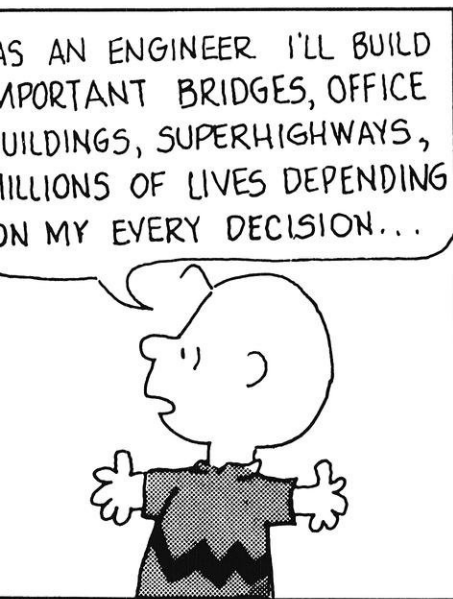
PEANUTZ



These cartoons, which first appeared in the Kentucky Engineer and were drawn by that magazine's editor, Ray Pedan, are reprinted here with Ray's approval.

COMIC STRIPS by ENGINEERS

by Schlitz



FERD J. McREADY'S TOP SECRET DIARY... KEEP OWT!

LAST WEEK MISS STONEBRAKER TUK THE INTYRE CLAS ON A FIELD TRIP TO A NEERBY CEMICUL PLANT, BUT DIZZY DROOLY GOT LOST IN THE LADY'S BATHROOM!

WE SAW GUYS IN NIFTY WHITE COATS MIXIN GOOD OL CEMICULS WITH EACH UTHUR. (IT WAS A DISPOINTMINT NOT TO SEE EVEN ONE DUM SMOKE BOM, THO!!) *woooooo* *wooooo*

THERE WERE ALSO LOTS OF GUYS IN GOOFY BIZNESS SOOTS STANDIN AROUND ACTIN LIK THEY WERE MAKIN IMPOR-TIMT DECISHUNS, BUT ONE GUY SAID THAT CHARLEEN (UGH!) WAS CUTE, SO I KNOW HE WASNT ONE OF THEER TOP THINKERS.

MISS STONEBRAKER SAID THAT ENGINERS (SUCH AS THOS AT THE PLANT) MADE GOOD SALREYS AN NEVR HAD TO WORRY ABOUT MONY OR STUFF LIK THAT. (\$\$\$\$)

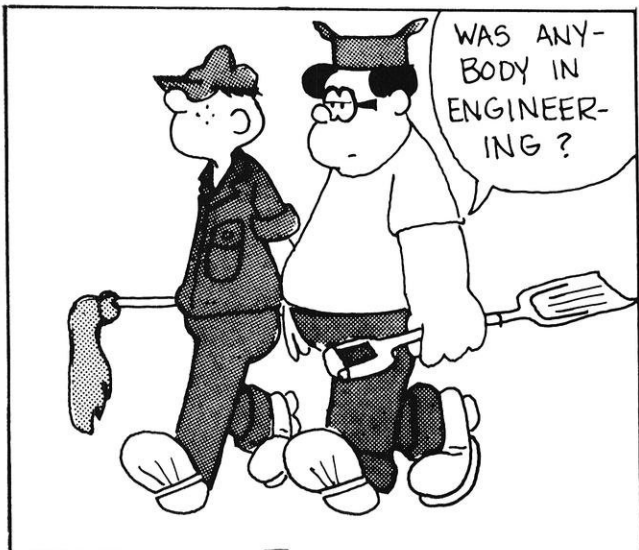
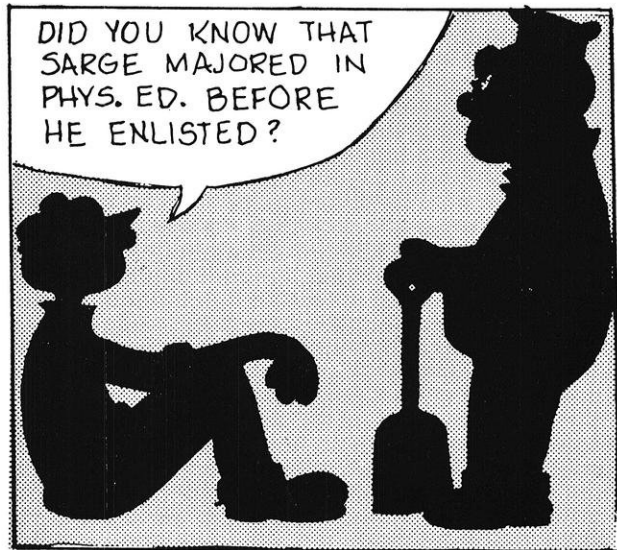
BUT WHEN I TOLD MY GOOD OL UNCLE MIKE ABOUT THE MONY PART HE JUS STARTED LAFFIN AN SAID HE KNEW DIME-STOR SAILSMEN WHO MADE BETTER MONY THAN ENGINERS!

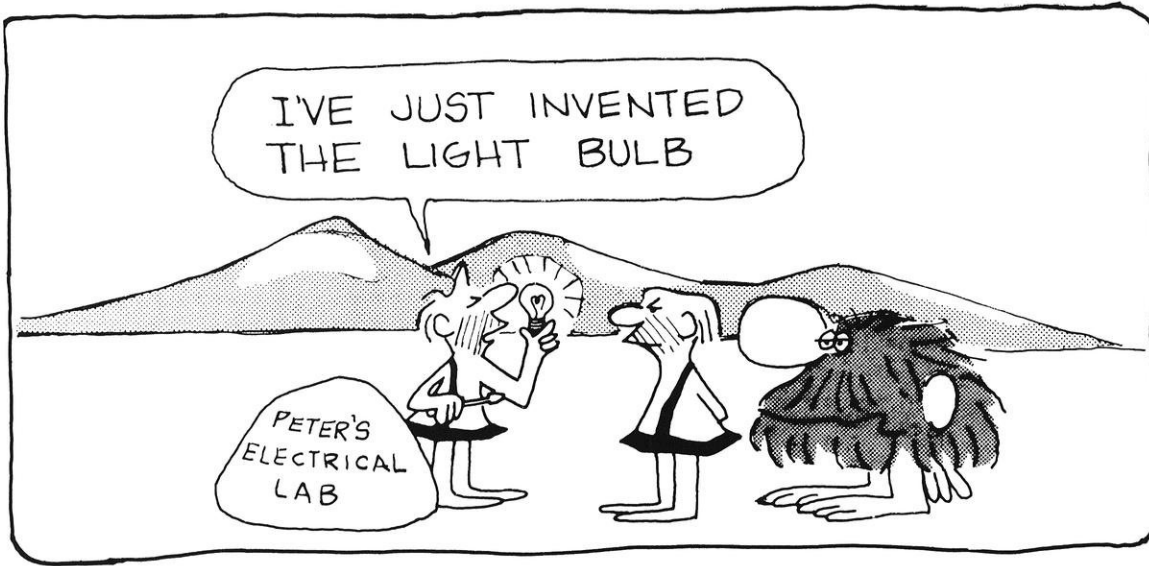
WITH FIFT GRAD EJUCASHUNS

I HAV RECINTLY DESIDED AGAINST ENGINERING AS A LIF-LONG PROFESHUN BECAUSE UNLE MIKE SAYS I CUDNT' MAK EVIN ENUFF MONY TO KEEP MYSELF IN "BELLY-BURNERS"!

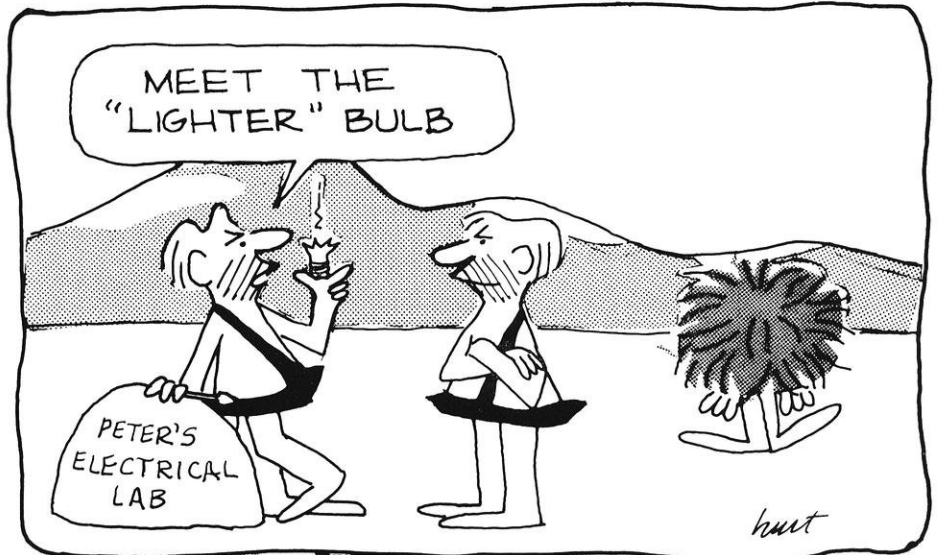
BEATLE BAILER

by Wort Walker



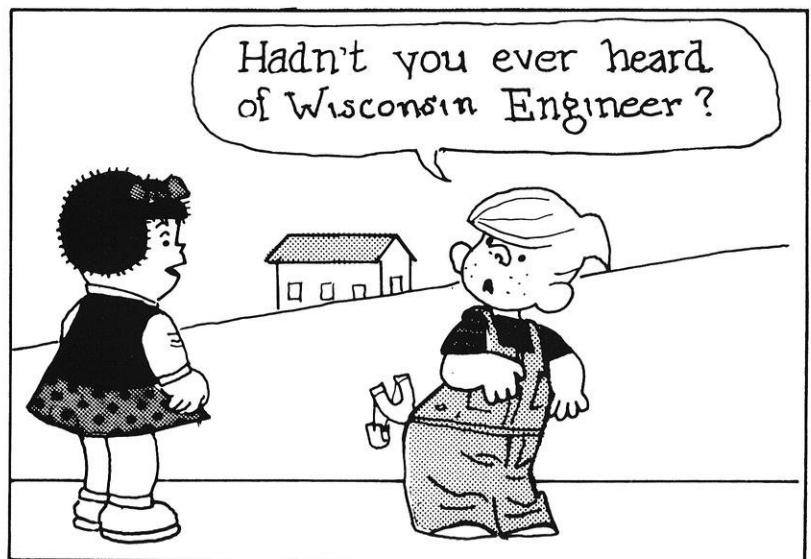


GOORGG



NANCIE and DENNIS THE MEANACE

by Ernie Brushseller and Hank Ketchup



ENGINEERS:

Mechanical, Civil, Electrical,
Industrial, Architectural

WILL YOU BE CHAIR BOUND? when you would rather be AIR BOUND

After four years with our company, Bob Cassidy, valuation engineer, has been in 37 states, three foreign countries, four steel and two paper mills, twelve metal working plants, a Chilean copper mine, cheese factory, automobile plant, grain mill, box board plant, textile mill, newspaper plant, CATV system, municipal water works, and 36 other business properties.

He has been describing, analyzing and evaluating machinery, machine connections and foundations, process piping, etc., estimating value to enable client companies to make sound operating, engineering, and financial decisions. Traveling 70% of the time at company expense, Bob has seen a greater variety of engineering applications than most engineers see in a lifetime. Reviewing his field work at the home office in Milwaukee, he had had direct access to top management viewpoint and direction.

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Late Again

by Holly Eva Wong

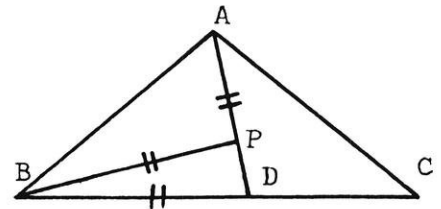
Wednesday night after my last class I was walking through the double E building, not doing anything except minding my own business and trying to stay inside as long as possible. It was raining. I felt a swish of air past my nose and reached up to rescue a paper plane which had made a forced landing in my hair. Someone is really desperate for entertainment, I thought, as I examined the carefully creased and nose-clipped creation. There was a small insignia on the right wing. I looked at it again, squinting in order to decipher the design. "Draw a general triangle ABC," it said, and I thought, what a weird name for an airplane. Turning the plane over, I found the decorative directions continued on the underside of the left wing. "Connect the midpoints of the sides of triangle ABC to form a second triangle. What size relationship exists between the new triangle and triangle ABC?" "Must be some real nut flying these planes," I said to myself, as I dropped my books and drew a general triangle in lipstick on the floor. While I was working he came out, the nut who flew the plane.

He had class; immediately I knew we belonged together. I was wearing my transparent plastic dress which said EVOLUTION across the front and back, only I had put it on inside out. I had just noticed this when I happened to see myself reflected in a mirror reflected in another mirror and had read my message. Luckily he could only see the four end letters. Besides, he had also had troubles dressing. He had his sweater on inside out with his left arm in the right sleeve and his right arm in the left sleeve so that the label, which should have been inside the neckline in the back was . . . , well where was it, inside front, inside back, outside front or outside back? He wore wire-rimmed tri-

focals and a bamboo slide-rule behind his ear.

He dug in his hip pocket for six quarters and arranged them in a pyramid on the floor. "Change the figure to a circle by making four moves, each consisting of sliding a quarter to a new position where it is tangent to exactly two quarters."

I giggled. His eyes were lavender and sparkling. He didn't wait for me to finish but presented me with another problem. Prove that it is impossible to find a point P inside a general triangle ABC such that $AP = BP = BD$ where A, P, and D are colinear.



I was in love. He was really my kind of guy. I had always dreamed of meeting someone so considerate, witty and gentle; someone socially aware, responsible, honest and kind. The fact that he was handsome and had money was a trivial detail. My mother would be pleased. Mother had always been concerned that I might spend my whole life as Miss Holly Eva. I asked him his name.

"I'm Late Again," he said.

I was plotting how to get from Holly Eva Wong to Mrs. Again when he must have read my mind. He tore down the hall, scribbled a final message on the plate glass door and ran out into the rain. I followed him as far as the door. He had written

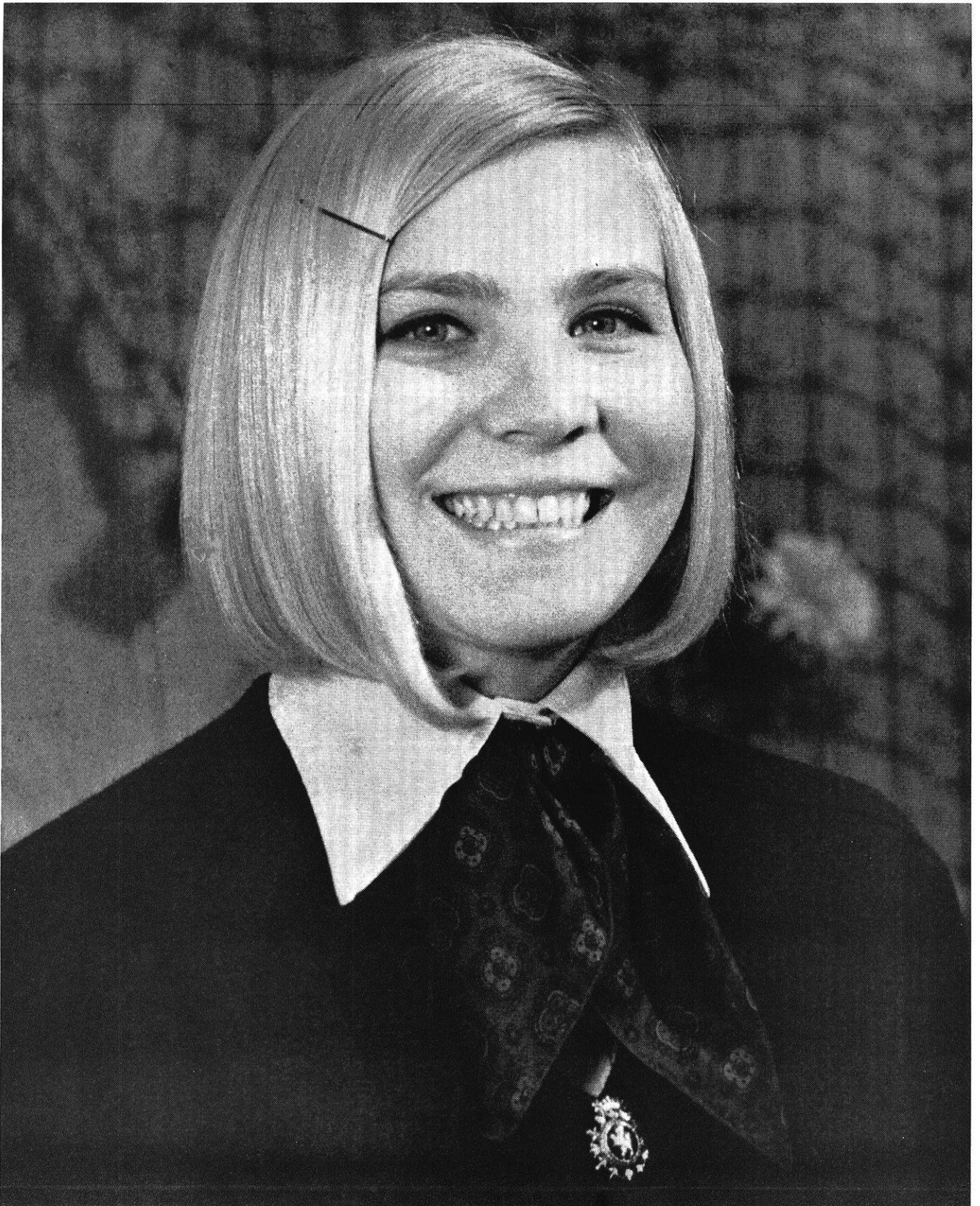
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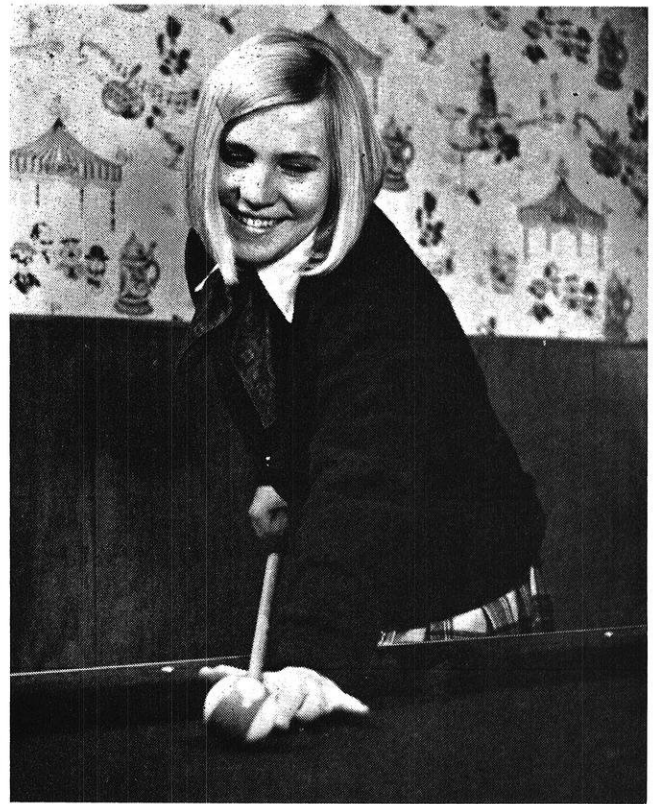
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Could he really mean it?



KAY GORECKI, Wisconsin's Finest





photos by Bruce Pease

Our Finest for the month of April is the very lovely Kay Gorecki. She comes to our campus from Manitowoc, the land of shipbuilders. Kay, a freshman, is majoring in Spanish. Her subjects this semester include Speech, Anthropology, History, Sociology, and, you guessed it, Spanish. Kay's real desire is to become an airline stewardess after graduating. No doubt her Spanish will be proven extremely useful on flights to Florida.

A busy girl, who enjoys every minute of life, Kay has pledged Pi Beta Phi Sorority. She also finds time to work part time at the American Medical Guild as a typist; and is an avid rooter for the Wisconsin football and basketball teams.

Certainly we are all looking forward to hearing "welcome aboard, sir" from this pretty future stewardess as it would indeed be a pleasure to fly with Kay.



Several sets of preliminary plans are drawn up for the location of a county trunk highway between two points chosen by the instructors. The best plan is then selected by the students and one mile of the proposed highway near the camp area is surveyed and planned in detail. Crews work in the office and in the field to complete the project just as though the highway actually were to be constructed according to Wisconsin Department of Transportation, Division of Highways Standards.

From 6:30 a.m. until 5:30 p.m. the students' activities are closely regulated. During this time lectures are given concerning the work to be done that day, and work is carried out in the field. Evening hours are usually devoted to calculating, computing, and the preparation of reports and maps. Students soon find that 18-hour days devoted to camp work become quite common.

The director of the camp is Prof. E. C. Wagner. Professor Wagner has been an instructor at the camp since 1934 and director since 1947. Other instructors at the camp include Prof. J. C. Clapp, who is in charge of the two-week C.E. 411 route location course; Prof. L. F. Hillis, who is in charge of land platting and land surveying; Prof. J. P. Scherz; and other instructors and teaching assistants. In the past the U.S. Geological Survey has sent one of its men to assist in the instruction of the plane table survey. The Wisconsin Department of Transportation, Division of Highways, also sends an engineer to assist with the route location course. Meals are planned by Mrs. Wagner and are prepared and served family style in the mess hall by co-eds from the Madison campus and other State Universities.

Students gain experience not only in field and office procedures, but also in working with and directing the efforts of other individuals to accomplish group projects. For this reason, summer camp grades are given special notice by prospective employers. The experience of having been to Civil Engineering summer camp is long remembered.

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irresponsible engineers. **At present they do not have cause!**

3) "The undergraduate program in engineering is too demanding." I really don't understand. How does ESSR propose to reduce degree credits to 120, expand the engineer's social and cultural background (presumably by adding more liberal arts studies) and still turn out a person capable of doing more technologically than changing a diaper or quelling a social demonstration? You can't have your cake, and eat it too!

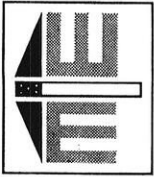
4) A five year program leading to a master's degree, or "some other alternative to the present curriculum." Once again, the empty cry for destruction of the present with nothing to fill the void.

5) "Voting membership on engineering school committees." Whether you know it, or not, **there are** student-faculty committees in some departments (EE, for instance) which deal with such things as curriculum matters, grievances, etc. There is an all engineering campus Internal Studies Committee reviewing the scope of engineering education. Get off your duff and on it. There is Polygon Council which is fairly effective at initiating and implementing needed **specific** action. Other committees also abound.

6) "A formal evaluation of an individual's teaching ability . . ." Do you think the faculty and departmental chairmen aren't reading the WSA evaluation? (I might add, WSA evaluation was largely motivated and manned by Polygon and the engineering societies.)

7) I agree with that proposal.

In short, I feel that ESSR has made blanket generalizations without enumerating a set of feasible solutions. I further know that there are channels and ears open on the problems we do have. However, if one is really concerned about his social responsibilities then he should be on those committees directly concerned with the specific problem. Orating from an armchair is better left to the dubious world of politics, not engineering education.



JOKES

In Boston there were two brothers, one a bachelor, and the other married, who looked so much alike you could hardly tell them apart. One lost his wife, and shortly afterward, the other lost his fishing rowboat, a quite dilapidated craft which fell apart and sank quite suddenly.

A few days later, a kindly old lady met the boat owner and mistaking him for the brother whose wife had died, said with remorse, "Oh, Mr. James, I'm sorry to hear of your loss."

He, thinking she meant the boat, of course, said, "Loss? Forget it. I should have put the axe to that old tub long ago. She belonged at the bottom of the ocean. Smelly thing, full of fish odors. I could hardly stand it lately. Tried to sell her but who would have her?"

"Even the thick paint job could not hide the fact that she was all chewed up. Finally I couldn't handle her; I rented her to a couple of guys looking for a good time, but there were too many of them, and she suddenly cracked up and fell apart — Hey, somebody, quick! This old lady's fainted!"

The man went into a restaurant, sat down and began to inspect the menu. After he had been there about five minutes, a waiter strolled up and asked him if he cared to order. The man looked at the menu again, and then back at the waiter.

"I notice," he said, "that you have chopped liver for fifty cents and chopped liver for seventy cents, as well. What's the difference?"

The waiter pondered for a moment and then drawled, "Wal, the chopped liver for seventy cents costs more."

At a recent alumni reunion at a western university, an alumnus entered the men's dormitory. He walked to a room, knocked at the door and explained to the sophomore who answered: "I used to live in this very room 20 years ago. May I come in?"

The sophomore said sure. The old grad entered and started to look around. "Same old desk," he mused. "Same old bed. Same old furniture. Same old windows." He opened a closet door and there in front of him he saw an attractive girl trying to hide. "This is my sister," said the sophomore. "Yes," replied the alumnus, "same old story."

Two engineers had been drinking when one lost his grip on the bar and fell on his face.

The one remaining muttered, "That's what I like about Svoboda, he always knows when to quit."

There was this fellow who went to a psychiatrist.

"Doctor," he says. "There's something wrong with me."

"Oh?" says the doctor. "What?"

"I'm dead."

"Dead?"

"Dead. Been dead a long time."

The doctor thought a bit. "You know, dead people don't bleed."

"Izzat right?"

"That's right. When the heart stops, there is no pressure to cause bleeding."

Suddenly, the doctor leaned over and jabbed a pin into the fellow's thumb. A drop of blood oozed out.

The fellow looked up. "See, Doctor. Dead people do bleed."

With due respect to old Charlie Darwin, although man has learned through evolution to walk in an upright posture, his eyes still swing from limb to limb.

Bus Driver: "All right back there?"
Feminine voice: "No, wait till I get my clothes on."

Then the bus driver led the stampee to the rear to watch the girl get on with a basket of laundry.

Did you hear about the farmer who couldn't keep his hands off his wife, so he fired them both?

Then there was the janitor who worked in the girls' dorm and was entrusted with a pass-key to every room in the building. The following week the dean ran across him and asked, "Why didn't you come around Friday for your pay, John?"

"What! Do I get wages, too?"

Coroner: "And what were your husband's last words, madam?"

Widow: "He said, 'I don't see how they make much profit on this stuff at a dollar and a quarter a quart.'"

Sign over shelves in Chem. building: Reagents of the University of Wisconsin.

Don Hillier and his date drive due North at an average speed of 45 mph for 1 hour. Jack Kasely and his date start from the point 10 minutes later and drive SSE for 27 minutes at an average speed of 20 mph. At the end of two hours Jack Kasely has gotten further than Don Hillier. Explain.



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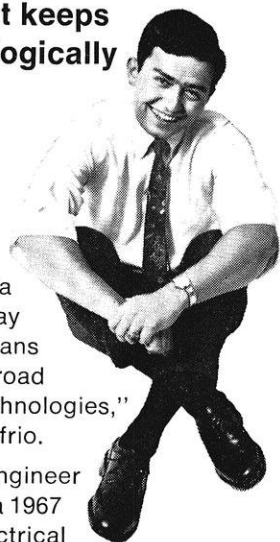
Recently, *Fortune* estimated that the value of general purpose computers installed in this country will more than double by 1972.

Other publications have other predictions, but most agree that information processing is one of America's fastest growing major industries.

To somebody just starting out, this growth means exceptionally good chances for advancement. Last year, for example, we appointed over 4,000 managers—on performance, not seniority. Here are three ways you could grow with IBM:

Engineering and Science

"The interdisciplinary environment keeps you technologically hot."



"Working in data processing today pretty much means you work in a broad spectrum of technologies," says Nick Donofrio.

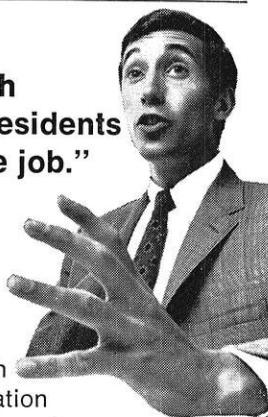
An Associate Engineer at IBM, Nick is a 1967 graduate in Electrical Engineering. He's using his technical background to design circuits for computer memory systems.

Nick says, "Your specialty at IBM can take you into the front yard of half a dozen different fields. In my job, for example, I work with systems design engineers, chemists, physicists, metallurgists, and programmers."

Career areas in engineering and science at IBM include: Research, Design & Development, Manufacturing, Product Test, Space and Defense Projects, and Field Engineering. You'll need at least a B.S. in any technical field.

Marketing

"Working with company presidents is part of the job."



"I'm pretty much the IBM Corporation in the eyes of my customers," says Andy Moran. "I consider that fairly good for an engineer who graduated only two years ago."

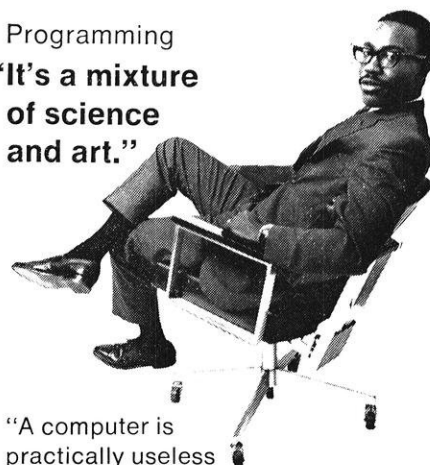
Andy earned his B.S.E.E. in 1966. Today, he's a Marketing Representative with IBM, involved in the planning, selling and installation of data processing systems.

Andy's customers include companies with annual sales ranging from 20 million to 120 million dollars. He often works with executive vice-presidents and presidents.

Career areas in marketing at IBM

include: Data Processing Marketing and Systems Engineering, Office Products Sales, and Information Records Sales. Degree requirement: at least a B.S. or B.A. in any field.

Programming
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"A computer is practically useless until somebody writes a program for it," says Earl Wilson.

Earl got a B.A. in Modern Languages in June, 1967. He's now an IBM programmer working on a new teleprocessing system linking IBM divisions.

Earl defines a "program" as a set of instructions that enables a computer to do a specific job. "Programming involves science," says Earl, "because you have to analyze problems logically and objectively. But then you have an infinite variety of ways to write your program."

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He began by rediscovering firsthand some of the vibrant situations that confront young teachers. With that background he was ready to coordinate the nominating and judging.

Planning and coordinating come naturally to Bob. As a Production Control Specialist with General Electric's Medium AC Motor and Generator Department, he keeps production lines running smoothly. Coordinating machinery, raw materials and labor is crucial to any efficiently run business.

With a mechanical engineering degree from Cornell, in 1962, and an MBA in personnel administration from George Washington, in 1963, Bob sought to plunge

directly into meaningful work. He'd had enough theory and simulations to last him for awhile.

At General Electric he found people that agreed with his thinking, and what's more, GE offered him immediate responsibility via the Manufacturing Management Program.

Like Bob Nerad, you can get a fast start at General Electric, in R&D, design, production or technical marketing. Talk to our man when he visits your campus. Or write for career information to: General Electric Company, Room 801B, 570 Lexington Avenue, New York, N. Y. 10022

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