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Wisconsin engineer

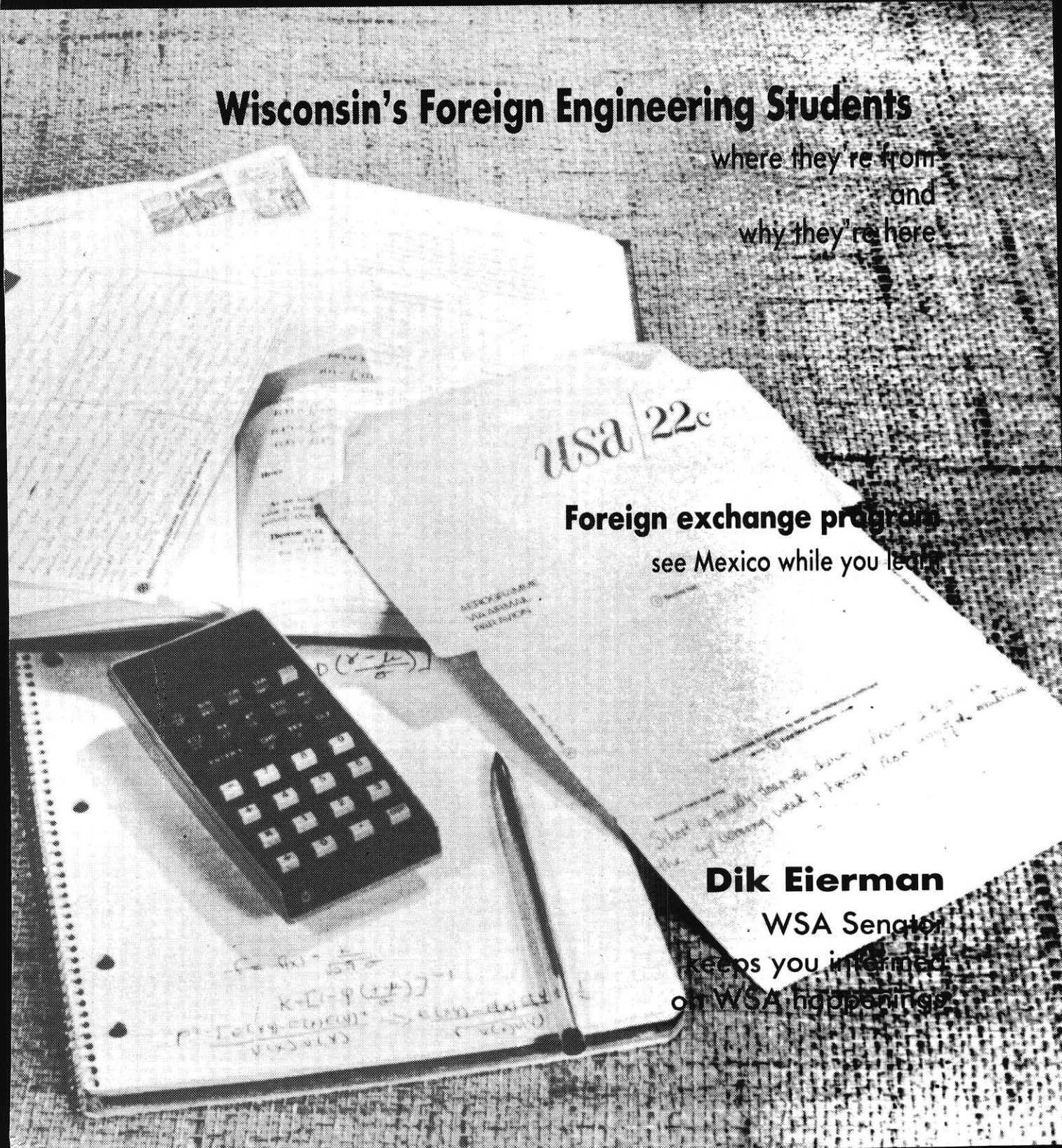
Wisconsin's Foreign Engineering Students

where they're from
and
why they're here

Foreign exchange program
see Mexico while you learn

Dik Eierman

WSA Senator
keeps you informed
on WSA happenings



If your middle name is impatience,



maybe we can put things on a first name basis.

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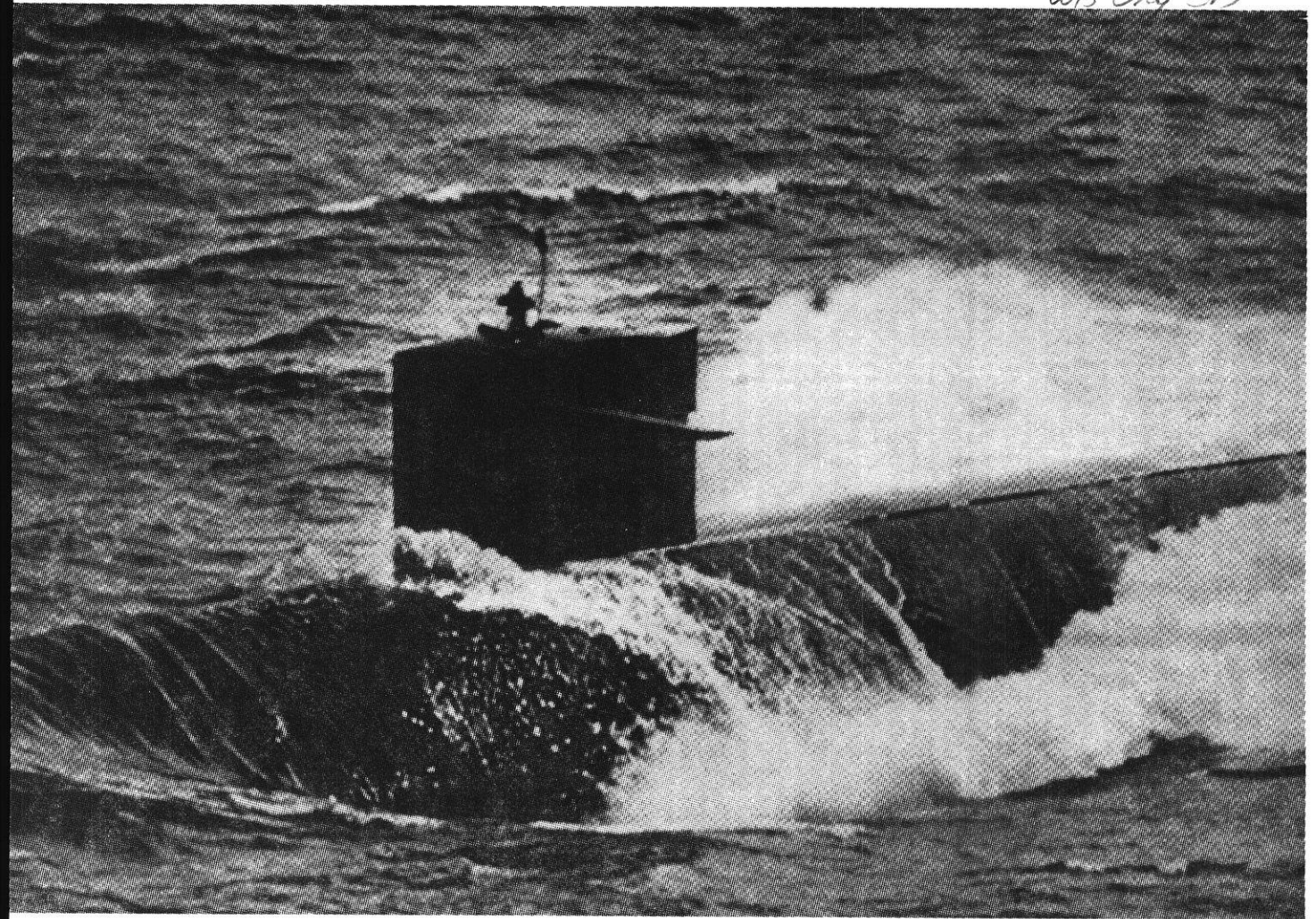
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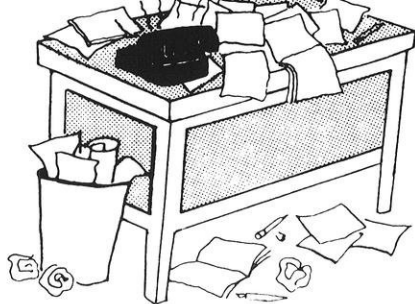
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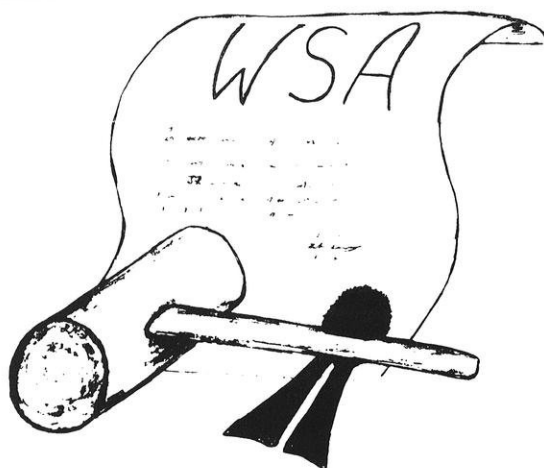
NAVY OFFICER. IT'S NOT JUST A JOB, IT'S AN ADVENTURE.



It feels like only yesterday that I left my summer job, and now here I am in the middle of six week exams. I will cross this small hurdle just in time for the next set of exams, closely followed by finals. Then, after a short break, the circle will start all over again. It makes me wonder where the time goes. What about the things I've been planning to do "when I've got the time?" I've been here two and one-half years now, and I'm still planning to do them. . . sometime. But, if they're ever to happen, I'll have to start now, and not wait "till I've got a little more time."

From the Desk of the Editor

If you're looking for a worthwhile way to spend some of your valuable time, consider joining the staff of the *Wisconsin Engineer*. We can offer you experience in communications, business, sales, photography, and graphics, as well as a few crazy moments. We always have a need for writers, layout people, photographers, advertising salespeople, and anyone with a few good ideas. We're also looking for someone to start training in January to become our new business manager. A knowledge of accounting would be helpful, but isn't a must. Our office hours are 1-4 PM, Tuesday and Thursday. If you would like to join, find out more about us, or just make a few comments, drop in at 276 Mechanical Engineering.



It seems to be in vogue these days to exhort engineers on to bigger and better solutions to the seemingly unending crises in the news. Solving a technological crisis requires a technical description of the problem as well as an understanding of the principles applied in reaching the solution. However, in our present time, technology isn't rationally separable from a society, nor are the problems partitioned as such. If a difficulty is discussed in only a particular light, the chances are slim the solution will be all encompassing. So let's consider our position.

Be It Resolved

The United States is big and big business is here to stay. This requires a specialization on most peoples part, at least with regard to a decent job. Our specialization in engineering requires a knowledge of the technological vocabulary and an understanding of the attending assumptions and concepts. But, if we expect to be represented in the major decision-making process, we must be consistent in presenting our beliefs and sharing our technical knowledge at all levels of society.

One of the challenges of serving in the WSA is ensuring a well-rounded discussion of the business at hand. Engineers can no longer permit discussions with technological impact to be made lacking our insights. To accomplish this, engineers must become aware of and involved in the day-to-day affairs of the governing bodies. I encourage all of you to consider a project of incomplete representation. I then challenge you to seek an alternative view and have it heard. Take the Senate, for instance. . .

wisconsin engineer

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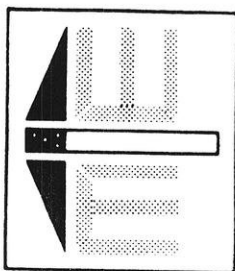
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A unique opportunity for the adventurous student

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Engineer's Day Award-1977

Prof. George W. Washa, 68, whose career spans 47 years at University of Wisconsin-Madison, was honored October 7 as the University's outstanding teacher of engineering students for 1977.

Washa accepted the Benjamin Smith Reynolds Award at the annual Engineers Day banquet from Edward E. Hales, president of the UW System Board of Regents. The honor carries a \$1,500 award.

"He sets an example of high professional integrity and demands the same high level performance of his students," Hales said in remarks prepared for the ceremony at Union South.

Washa received his bachelor's and master's degrees in civil engineering from UW in 1930 and 1932, and stayed to receive his doctorate in engineering mechanics in 1938. With the exception of two summer jobs during the 1930s, he has been an instructor or professor within the College of Engineering here continuously since 1930.

His teaching within the department of engineering mechanics has ranged over construction materials, soil mechanics, statics and dynamics. More than 75 graduate students have received higher level degrees under his direct tutelage. Looking to the future, he has

participated in a hundred-year long research project on the strength of concrete which isn't to be completed until well into the 21st century.

Washa is listed in a dozen "Who's Who" type books and has belonged to more than a dozen professional societies, contributed to four books and published more than two dozen articles. His numerous campus committee memberships have included being chairman of the search and screen committee to find the engineering dean, chairman of the University public functions committee and member of the student life and interests committee.

The teaching award has been presented annually since 1955 and is named after the co-founder of the Burgess Battery Co. Reynolds, a member of the University's Board of Visitors, was presented a distinguished service citation by the College of Engineering two years before his death in 1954. The annual recipient of the Reynolds award is selected by an engineering faculty committee.

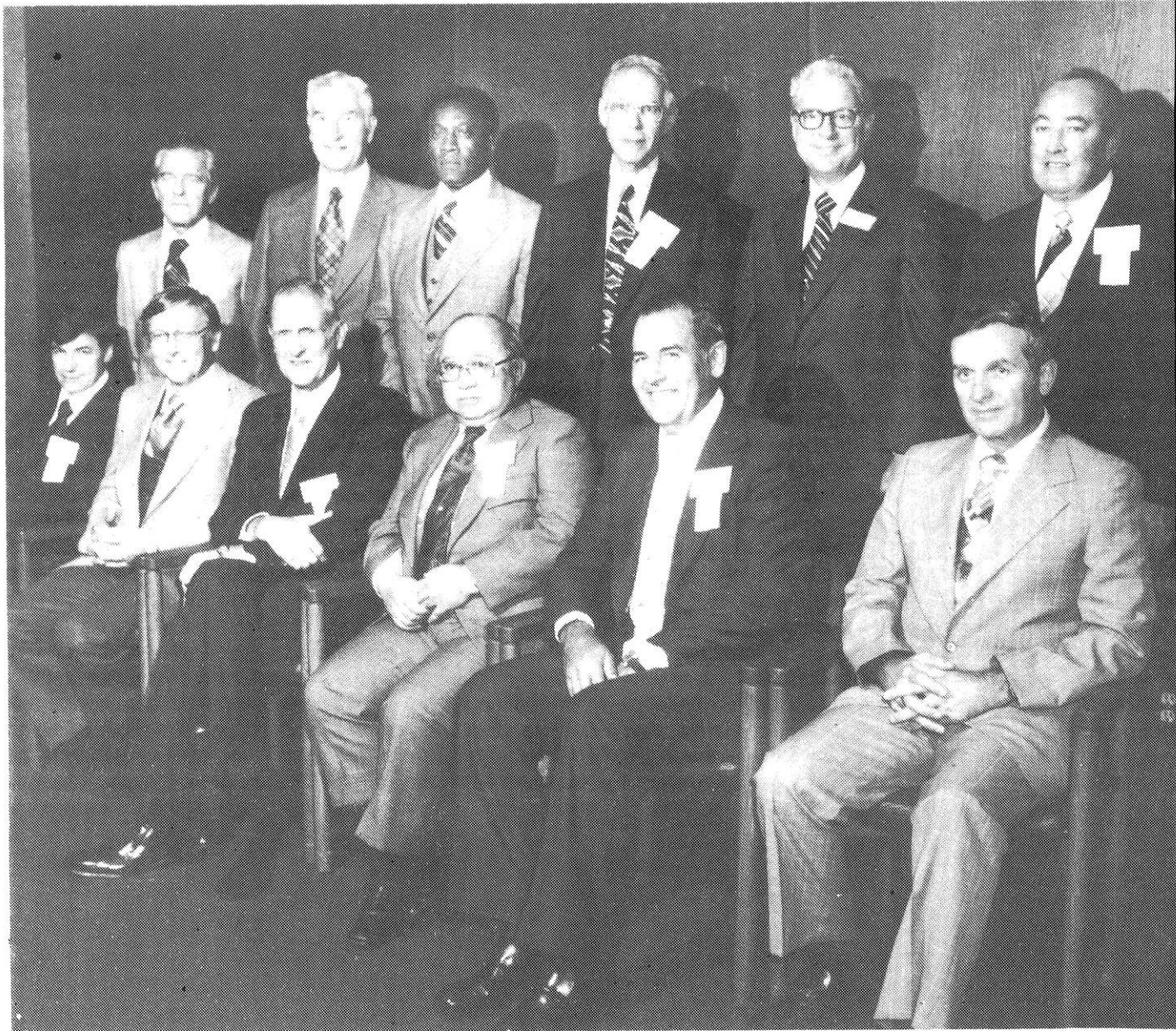
Nine men also received distinguished service citations on Engineers Day, October 7, at the University of Wisconsin-Madison.

Eight of the nine are graduates of the UW-Madison College of Engineering; the ninth taught physics at the University for 17 years. The UW graduates who will be cited for their outstanding records in engineering are:

—Thomas F. Airis, 71, an Eau Claire native, for public works construction. A former member of the U.S. Army Corps of Engineers, he was in charge of constructing the



Edward E. Hale, President of the UW Board of Regents, presents Professor George W. Washa with the Benjamin Smith Reynolds Award for the outstanding teacher of engineering students of 1977.



Engineer's day 1977 (standing, left to right) Edwin J. Buszynski, UW-Madison Chancellor Irving Shain, UW Board of Regents President Edward E. Hale, Robert G. Saehs, Dean W. Robert Marshall, R. Ross Blackwood. (Seate, left to right) James R Randall, Robert W. Flogum, Thomas F. Airis, Toru Iuna, Ronald H. Fillnow, Robert L. Cattoi.

U.S. International Section of the St. Lawrence Seaway Project from 1954-59. He later headed the District of Columbia highway department and now is with the firm of Tippetts-Abbett-McCarthy-Stratton, Washington, D.C.

—R. Ross Blackwood, 49, Milwaukee, for his developments in the heat treatment of metals. He started with the A-C Spark Plug Division of General Motors and now is president of Tenaxol, Inc., and vice president and chief metallurgist for T. H. Cochrane Laboratories, Ltd., both in Milwaukee.

—Robert L. Cattoi, 49, a Hurley native, for achievements in designing aircraft navigation systems, computers and microwave communications. His entire career has been with Collins Radio Co., which merged with Rockwell International in 1973. Last year he was named vice president-engineering for the electronics operations of Rockwell International.

—Edwin J. Duszynski, 64, director of public works, Madison, for innovative contributions to public works. He has been with municipal

public works departments in Milwaukee, Cudahy, Appleton and Madison. Since taking his present job in 1963, he has been active in solid waste management, stressing salvage and reclamation.

—Ronald H. Fillnow, 55, a Clintonville native, for development and application of peaceful uses of atomic energy. His career has been spent exploring the uses of nuclear power for Westinghouse Corp. Responsible for development of viable fast breeder reactor design, he is general manager of Westinghouse's advanced reactor division at Waltz Mills, Pennsylvania.



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Try this little experiment and chances are you'll find the last few seconds unbearable.

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ing, hospitals, wastewater treatment and the chemical industry.

But, in a way, the Walker is the most important use of our oxygen. Because to the people who use it, it is the breath of life.



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Strangers in a Strange Land

by Mike Verdin

No, the melting pot of the United States is not owned by U. S. Steel. In fact it may be closer than you think. With a quick look up from this page you can see students from A to Z—that's Afghanistan to Zambia (or Norway to Saudi Arabia, or Canada to Bangladesh).

Whether you have stopped to notice it or not, the College of Engineering at the University of Wisconsin is a proverbial United Nations, graced by approximately 595 students from 60 foreign lands. That's one-fifth the entire enrollment of the College. The greatest number of these students hail from Hong Kong, Taiwan, India, and Iran. However, each continent is well represented.

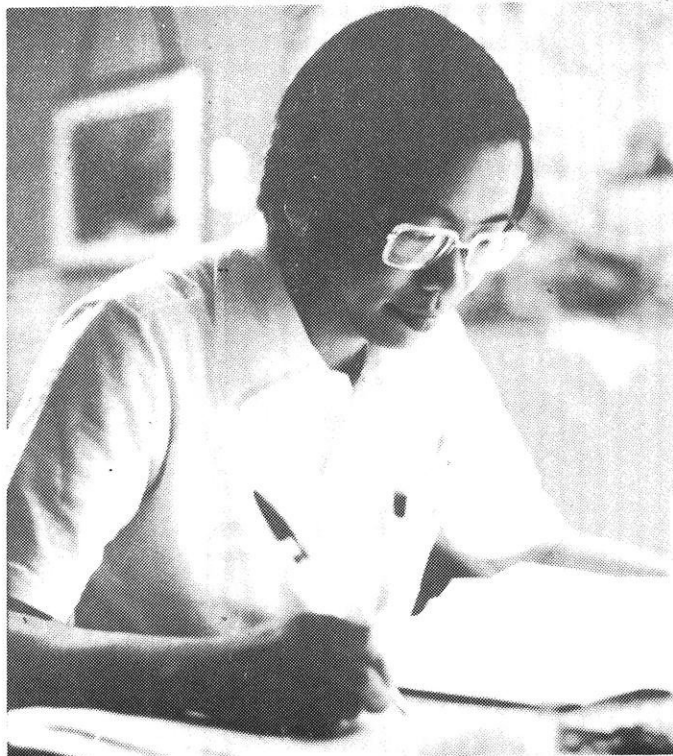
Expectedly, the middle eastern countries have shown quite an increase in recent years, mostly because of oil trade with western

nations. For the college as a whole, last year there were 490 international students.

Could it be that word is getting around about the University of Wisconsin? Yes. UW is a well-known campus throughout the world. But what are other reasons that make collegians travel half-way around the world to attend the UW? Some answers may surprise you. Word of mouth, word of literature, certainly. For instance, an electrical engineering major from India heard about UW while in India. She picked Wisconsin from a list of recommended schools from the U.S. Embassy—among the colleges: Harvard, Stanford, and MIT. Although she came mainly for the academic offerings, she felt it would be an enjoyable experience and also a chance to learn about the American people.

Echoing on the academic offering theme, an Iranian ME major checked university rankings and professors' advice and thusly chose UW.

Another reason for coming was course offerings. Many international students could not find their desired field in their homeland and came statewise. Example: a Nigerian senior at UW could not take metallurgical and mining engineering in Nigeria. He then did research in the library, looking for academically sound schools. Several students also commented that they had heard UW was a good school for foreign students to attend. In addition, a number of students said that they came to the state of Wisconsin only to live but later decided to try college here—either continuing their education or starting.



Obviously with the different modes of living there must be different modes of studying and living academically. These differences are varied as the nations themselves. "There are many courses here not offered in India," comments our EE from India. "The majors (scientific theory like Physics or Chemistry) are not job-oriented like they are here."

But that's not the only problem. Take the tale of a former Brazilian undergrad, now a grad student in Civil and Environmental Engineering. "There was no campus in a united sense. There were even two buildings 40 miles away from each other." He also mentioned the Rio de Janeiro-located school separated the college of engineering from other colleges within the university, as is the case in many countries.

Other differences included observations from a ME major from Great Britain who noted the large size of UW and the different styles of teaching. He also commented on the collegiate sports, saying "A crowd of 70,000 to see a college sport in England would be unheard of."



Stressing the tougher academics was a Lebanese EE. "There's more competition here, the courses are harder, and they go into more depth. In Lebanon a "C" is not too hard, but here you must work for it." He also described the quarter system used in England where he went for a while. The entire school year is divided into four quarters with the final quarter devoted mainly to the final exam.

In Viet Nam there is a rigid program that must be followed. In fact, there are not too many engineering schools, and the competition to get into them is tough. The Viet Nam representative also said that the curriculum is not really employment preparatory.

Some students that were interviewed spoke of a language problem; however, all seemed to converse quite well in English. Some foreign students felt that other students weren't noticing or accepting them. But this is a misconception since American students treat

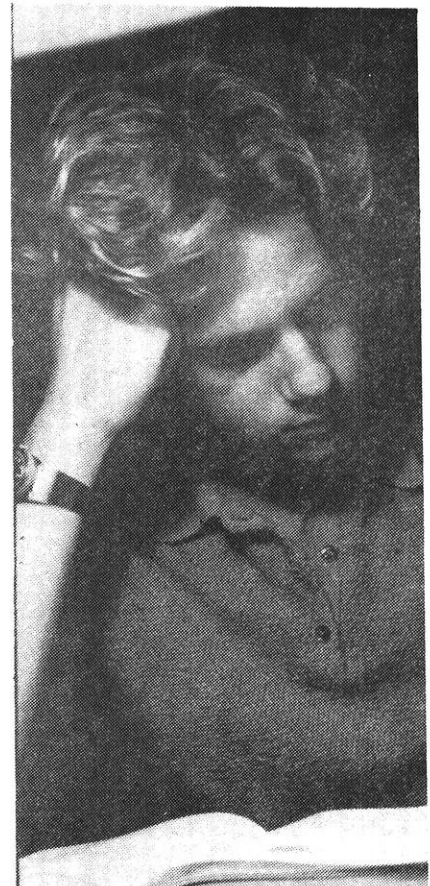
other American students the same way. Perhaps the toughest scholastic adjustments to make was adapting to the higher standards of work demanded in the UW College of Engineering.

But what happens to the students when they are through studying? The majority of the students are on student F-1 visas. Usually a native country scholarship allows the student to attend, so when he/she finishes his/her education (many go on to graduate school) he/she must go back. As of September 1, 1977, however, a student may be allowed up to one year of practical training in his/her field. An F-1 student cannot take a job here during the school year unless absolutely necessary, e.g., money is turned off because of political upheaval, currency devaluation, medical bills, etc. In short, the student must be self-sufficient.

The foreign students of the college of engineering comprise only a fraction of the total foreign student population at UW. For these students exist many organizations on and off campus. But there are few

as far as dialogue between American and International is concerned. Mrs. Bonnie Kienitz set out to try to bridge the gap several years ago. She was coordinator of a group of U.S. and foreign students who met at informal luncheons and talked of their homelands. Forming another such organization would be simple to do and would also be a good way to meet people. School can be more than just studying and mixing with one's own. All that would be needed would be a group of Foreign and American students—plus effort. The organization could easily grow and start new programs. Intermingling with other cultures is always an experience. For details on forming a planning committee, call Mrs. Kienitz at 263-4811.

All in all it appears that foreign students in the college of engineering are here to stay. The ever increasing number of foreign students come here for an opportunity to learn. Perhaps that is an opportunity both Americans and their brothers can share.



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-Pam Tutwiler



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Junior Year Abroad

Have you ever wondered what it would be like to live in another country, maybe even go to school there? If you're a freshman or sophomore in the College of Engineering, this article could be the beginning of the answer to your question. UW engineering students have a unique opportunity to study and travel during their junior year in Mexico and Germany and receive credit for doing it.

The Mexican program was started in 1961 with a grant from the Carnegie Corporation. The school is El Instituto Tecnológico y de Estudios Superiores de Monterrey, in Monterrey, Mexico, better known as "the Tec." It is a private school with an outstanding reputation throughout Latin America. School starts with an intensive review of

first year Spanish during a six week summer session. One year of college level Spanish is required. During the year, classes are all taught in Spanish. UW students sometimes have an advantage in the fact that some of the engineering textbooks that are used were written in the United States and haven't been translated into Spanish. Because of this, the classes move much slower, but most Tec students carry an average of 24 credits per semester. Traveling is also an important part of the program. Some trips are planned for the UW students during Tec vacation periods, and there are opportunities for them to plan others for themselves.

The German program, which was started in 1972, is very different. Students usually spend the summer

before their school year working somewhere in Germany. They have a choice of several different schools, all state universities. Before they leave, students plan their own programs with the help of an advisor, being sure that all credits will transfer. While they're in Germany, the students are registered at UW, and are admitted to the German universities as special students. They are promised UW credit as long as they do well. Two years of college level German is required for

this program.

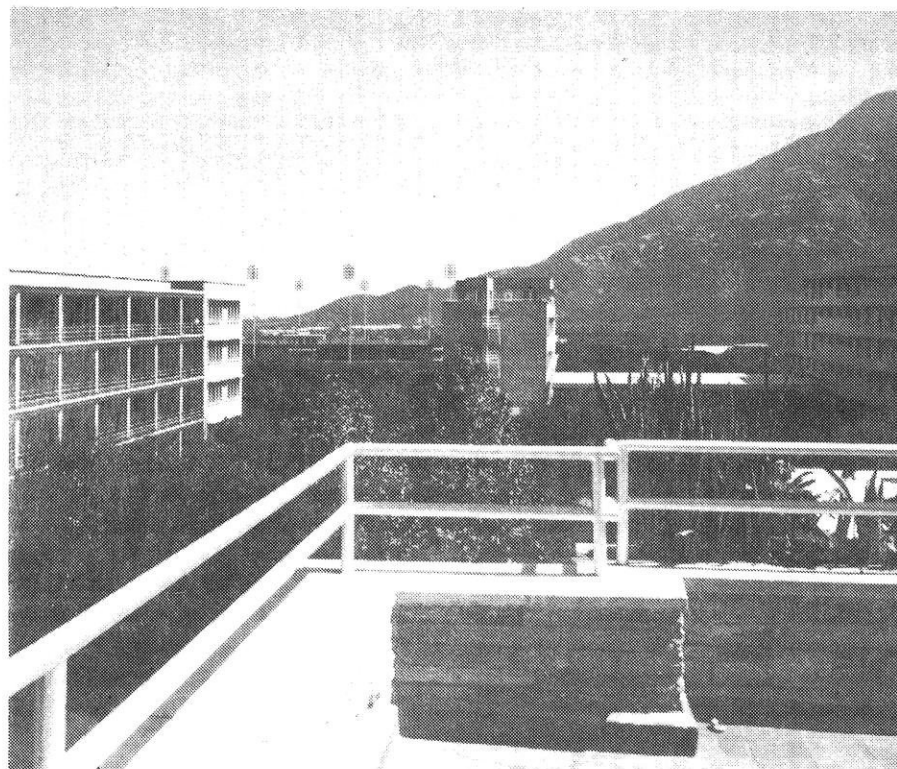
Both of these programs are considered self-selecting. This means that anyone who meets the requirements can go, if he/she wants to. The only qualifications are: 1) the language requirement (one year of



The Library Frieze at Monterrey Tech, Monterrey, Mexico

Spanish or two years of German); 2) a minimum 3.0 grade point average; and 3) freshman or sophomore standing in engineering now. The costs for the year are approximately the same as for a year here, plus \$500 for spending money. For the Mexican program, the university pays for round trip transportation and also some of the vacation trips.

This year, there are five students in Germany and one in Mexico. Last year, five went to Mexico and none to Germany. A directory is kept up to date of all participants, for any corporation which might be looking for engineers with a language background. These people are now in areas as diverse as business, military service, law, and medicine. If you're qualified and interested, the coordinator of the program is Mrs. Bonnie Kienitz, 737 ERB.



A view of the Monterrey Tech campus shows modern facilities and a beautiful environment.

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Fig. 2-

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Upcoming Interviews

MONDAY, OCTOBER 24

Air Products & Chemicals
Babcock & Wilcox
Cargill Inc.
Conwed Corp. (1 of 2)
Alexander Grant
Johnson Controls
Eli Lilly & Co.
3M Co. (1 of 3)
*Kemper Insurance

TUESDAY, OCTOBER 25

Conwed Corp. (2 of 2)
General Dynamics (All divisions)
(1 of 2)
General Motors (1 of 3)
3M Co. (2 of 3)
PPG Industries (1 of 3)
Pillsbury Co.
Wisconsin Electric Power
Co. (1 of 2)

WEDNESDAY, OCTOBER 26

General Dynamics (2 of 2)
General Motors (2 of 3)
Interstate Power
3M & Co. (3 of 3)
Shure Brothers Inc.
National Security Agency
*General Motors Research
(2 of 3)

THURSDAY, OCTOBER 27

General Motors (3 of 3)
All divisions
McDonnell Aircraft

FRIDAY, OCTOBER 28

Allen Bradley Co.
Bechtel Corp.
I.B.M. (All divisions)
(2 of 2)

McDonnell Aircraft (2 of 2)

MONDAY, OCTOBER 31

American Appraisal (1 of 2)
Battelle Columbus (1 of 2)
Battelle Northwest (1 of 2)
Borg Warner Chemicals
Cleveland Cliffs
Dorr Oliver Co.
I.T.T. — Telecommunications
Intel Corp.
Owens Illinois
Trane Co. (1 of 5)

TUESDAY, NOVEMBER 1

Battelle Northwest (2 of 2)
Ph.D.'s
C.P.C. International
Conoco
Consol. Coal
FMC — Northern Ordnance
GTE Automatic Electric
Kraft Inc. (1 of 2)
Polaroid Corp.
Sperry Univac (1 of 2)
Trane Co. (2 of 5)
Wisconsin Power & Light
Co. (1 of 2)
N.A.S.A. — Lewis Research
Center

WEDNESDAY, NOVEMBER 2

Albany International
(Changed to Nov. 7)
American Can Co. (1 of 2)
General Telephone Co.
of Wisconsin

Lawrence Livermore Labs
Marathon Oil
Menasha Corp. (1 of 2)
Miller Brewing Co.
Occidental Research
Trane Co. (3 of 5)
BASF Wyandotte Chemicals
U.S. Public Health
(Rhineland) (1 of 2)

THURSDAY, NOVEMBER 3

American Can Co. (1 of 2)
Barber Colman
Ford Motor Co. (1 of 2)
McGraw Edison Power Systems
Mobil Oil Corp. (1 of 2)
Mostek
Trane Co. (4 of 5)
Western Gear Co.
U.S. Dept. of Public
Health (2 of 2)



FRIDAY, NOVEMBER 4

Ford (2 of 2)
 General Tire
 Harris Corp., Computer
 Systems Div. (2 of 2)
 Hercules Research — Ph.D.'s
 Honeywell — Information
 Systems
 Std. Oil of Ohio (2 of 2)
 Trane Co. (5 of 5)
 Walker Mfg.

Cincinnati Milacron
 Chemical Co.
 Dow Corning (1 of 2)
 Sandia (2 of 2)
 Shell Companies (2 of 3)

Wisconsin State Gov't
 Bureau of Personnel
 *Analytic Sciences
 *Data General
 *Zimpro

WEDNESDAY, NOVEMBER 9

Bemis Co. & Curwo
Bemis
 Bemis Co. & Curwood Co.
 Dow Corning (2 of 2)
 Republic Steel
 Rockwell International
 1) Aerospace
 2) Electronics
 Sandia Labs (2 of 2)
 *Phillip Morris Research
 Shell Companies (3 of 3)
 U. S. Steel Corp.

FRIDAY, NOVEMBER 11

American Cyanamid (2 of 2)
 Amoco Production Research
 Brunswick Corp.
 Eastman Kodak (2 of 2)
 Fiat Allis
 B. F. Goodrich Research
 Hughes Aircraft
 Texaco (2 of 2)
 Union Camp R & D
 U. S. Navy (2 of 2)
 *Argonne National Labs
 *Oak Ridge National Labs (2 of 2)

MONDAY, NOVEMBER 7

Albany International
 Bethlehem Steel (1 of 2)
 Boeing Co. (1 of 2)
 Eastman Kodak (1 of 3) — Ph.D.'s
 Ryerson (1 of 2)
 Shell Companies (1 of 3)
 Shell Development
 *Eastman (TN) Ph.D.'s

THURSDAY, NOVEMBER 10

Louis Allis
 Eastman Kodak Co. (1 of 2)
 Henry Ford Hospital
 B. F. Goodrich
 Texaco Inc. (1 of 2)

WEDNESDAY, NOVEMBER 16

*I.I.T. Research
 *Added since August 26

TUESDAY, NOVEMBER 8

Bethlehem Steel (2 of 2)
 Boeing (2 of 2)
 Caterpillar

Awards- continued from page 6

—Robert W. Flugum, 53, an Oconomowoc native, for leadership in electric power research. After working as an engineer and executive for Westinghouse Corp. and Ohio Brass Co., he was named in 1974 an assistant director in the Electric Energy Systems Division of the U.S. Energy Research and Development Administration. He is a recognized authority on power transmission and distribution.

—Tora Iura, 54, San Francisco, for developing solutions to a variety of complex engineering problems. At Rocketdyne Corp., Propulsion Research Corp., Space Technology Laboratory and, since 1960, Aerospace Corp., he specialized in rocket propulsion. More recently he has been responsible for research into the environment, pollution control and automotive energy conservation.

—James R. Randal, 53, a native of rural Augusta, for contributions to increased productivity in food processing. Currently president of Archer Daniels Midland Co., Decatur, Illinois, he is chairman of the boards of Lakeland Engineering and Equipment Co. and Control Assemblies Corp., both in Minneapolis.

The one non-UW graduate, Robert G. Sachs, 61, is director of the Argonne National Laboratory, Argonne, Illinois, and will be recognized for his contributions to education and to national programs in nuclear engineering and fusion technology. Before joining UW to teach from 1947-1964, he taught or conducted research at four other universities and worked for the Aberdeen Proving Ground and Argonne lab. He joined Argonne again after leaving UW-Madison and was appointed director of the laboratory in 1973.

* * *

A prisoner is going to the electric chair.

The warden says, "You can have anything you want for your last meal."

The prisoner says, "I want strawberries."

The warden says, "Strawberries won't be in season for six months."

The prisoner says, "I'll wait."

* * *

ChE: Heat expands and cold contracts.

Professor: Can you give me an example?

ChE: Hot summer days are long; cold winter days are short.

Help Yourself.

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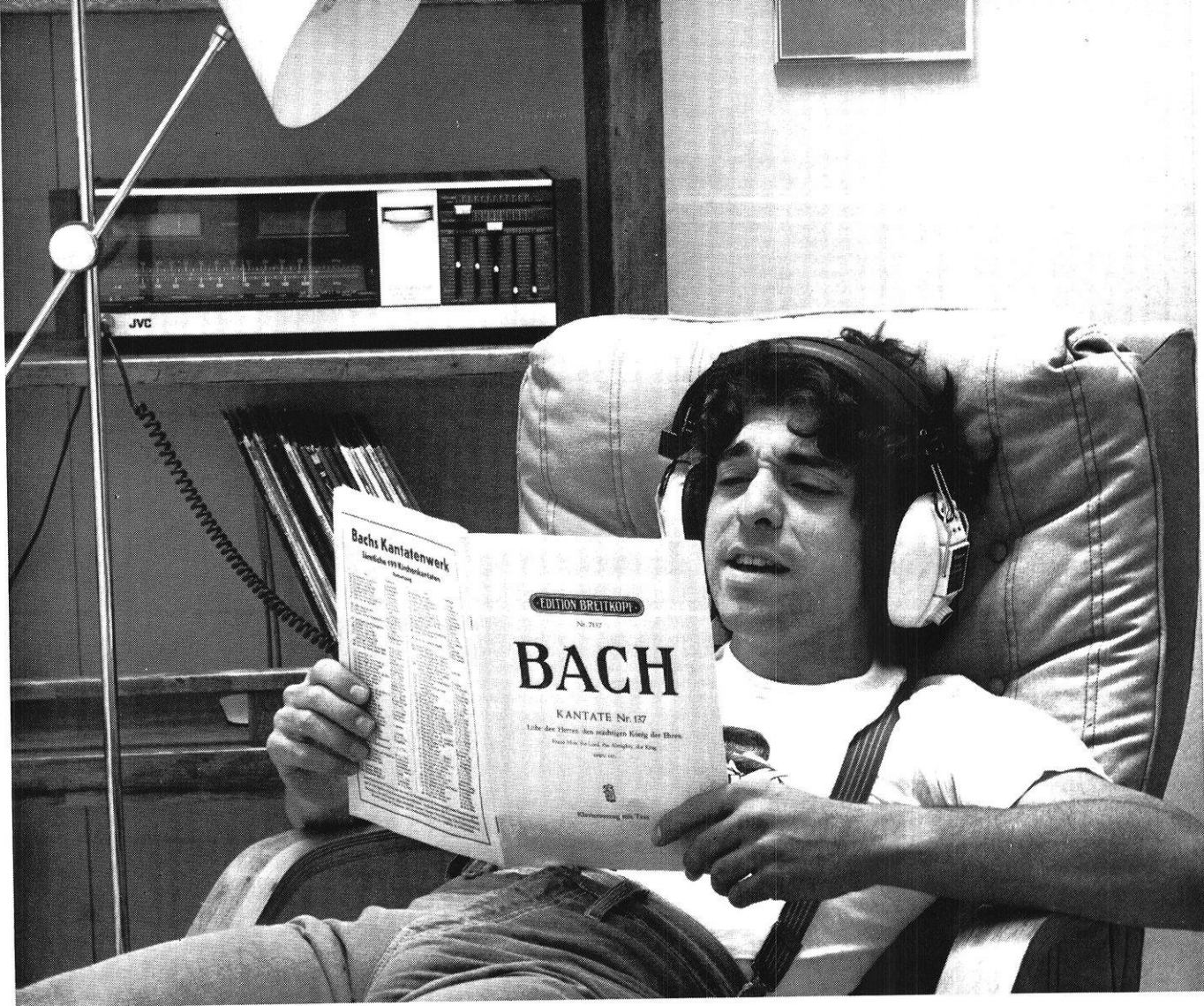
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Enjoy college

Education not only makes life more interesting but eventually brings more influence in society than can be expected by those who have never bothered to read, study, listen, and reflect on the pleasure and pain of it all. That includes influence as articulate citizens, customers, and investors.

Nevertheless, the truth in this may not be apparent right out of college when a desire for steady income leads some B.A.'s to come to us with a major in, say, political science or Romance languages, seeking a start toward an executive career. We listen and then ask, "Are you a born salesperson and how can you prove it?"

In a way, that question reflects our own limitations. For a person well educated in something other than technical fields, it is usually only in sales that we can match qualifications to openings.

For you, who may have lost out on some of the pure pleasure and sheer fun of college because of the kind of

technical courses you've had to grind away at, the choice can be wider. Sales is just one possibility. You can also consider research, development, design, manufacturing, and various combinations of those. Decision-makers throughout our organization, in work often far removed from the subject matter of a technical curriculum, first attracted interest by their success in coping with technical problems. Then, having demonstrated an ability to lead, they exercised their option to move on to broader responsibilities. That sort of choice, for the outset of a career and later, is earned in courses where quantitative thinking rather than personal opinion is demanded.

This includes choice from among other technologically oriented organizations just as good as we are for an interesting life. If it's us you want to challenge, so signify to Business and Technical Personnel, Kodak, Rochester, N.Y. 14650.



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