AUGUST 1975

WPI journal

"Our Republic was never created to be a leveler of man. It was created to be a lifter, a developer of men.

"Our Republic was created to let the gifted, the energetic, and the creative rise to new heights of achievement, and to let each man find his own level on the stairway of existence.

"Our Republic was created to encourage men to meet their personal responsibilities and to shirk no public duties. That is why our people have always been concerned about the honest needs of their fellow citizens, the chief of these needs being liberty, justice, and opportunity.

"Our Republic demands that the nation be governed by the capable, the honorable, the far-seeing, the clear-seeing, and not by mediocre men. In the beginning it was so. May it be so again.

"Our Republic demands more from men than any other system in the realm of self-discipline, dependability, cooperativeness, industry, thrift, and honor. For anyone to foster class consciousness, class conflict, misrepresentation, covetousness, violence, theft, and an open defiance of established law—even when done "legally"—is to breed anarchy and tyranny.

"Our Republic was not designed to interfere with the inalienable right of its people to be masters of their own destinies.

"Our Republic was established to make men free!"

We welcome this 200th anniversary as we welcome every important milestone in our lives . . . a significant occasion for celebration, reflection and rededication.

WYMAN - GORDON WG

WPI journal

Vol. 78, No. 7 August 1975

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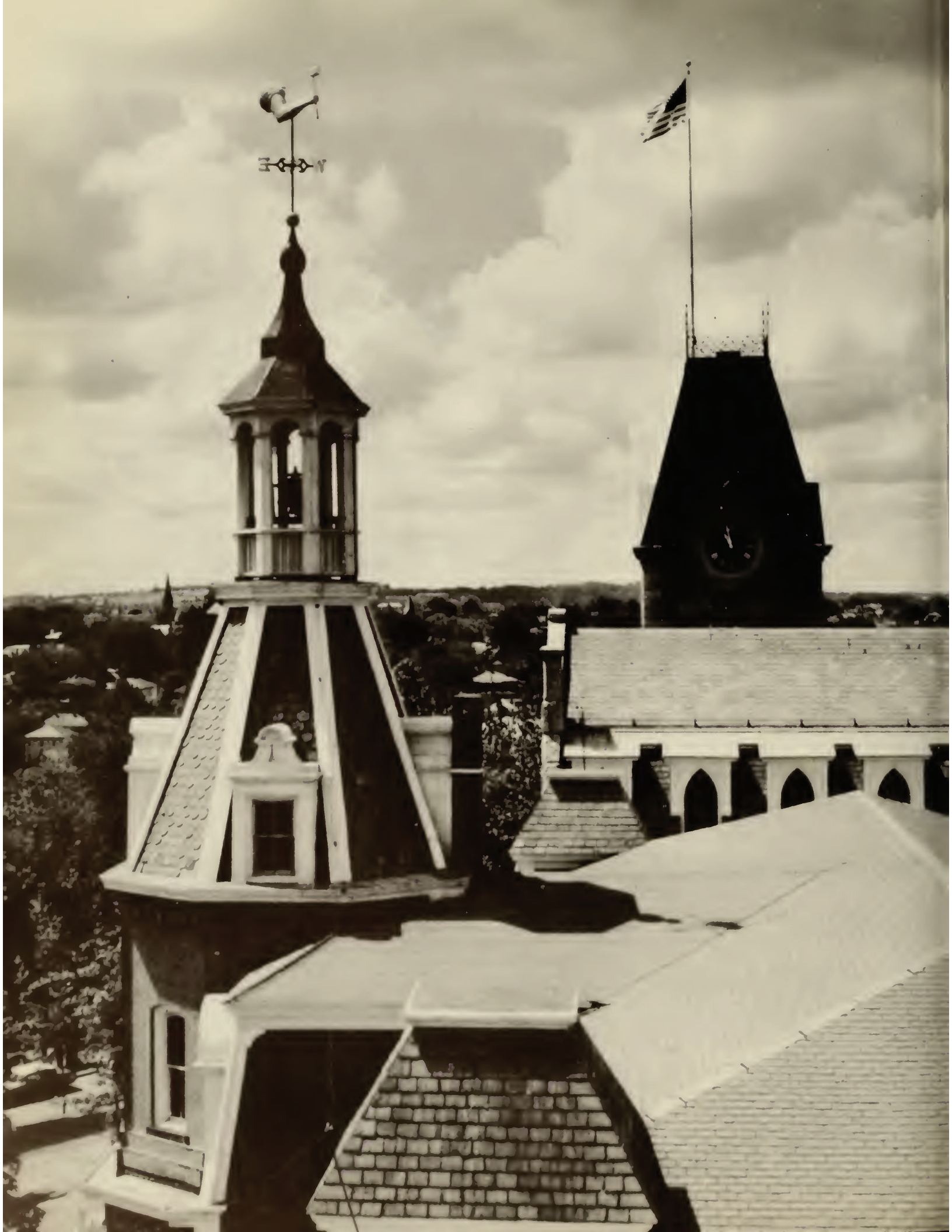


by the editor

Time's toll . . . Boynton flagpole

After several years in a decrepit and deteriorating condition, the once-white flagpole atop Boynton Hall has been dismantled and removed. In recent years the flagpole has not been used, and its rusty appearance has been something of an eyesore. Although Boynton Hall now looks much better for the pole's absence, those of us who remember with fondness Roger Perry's magnificent photograph (at left) of the twin towers of Washburn and Boynton, echoing the college's motto "Lehr and Kunst," will mourn, if only briefly, the flagpole's passing.

Commencement: Economist asks, in 200 years, poverty or potential?

It was a hot and muggy May 31, with rain threatening all morning and afternoon, but the college's 107th Commencement Exercises came off on schedule, and the rain held off until everyone had left.

Rain was only one of the day's problems, though. The commencement speaker was Dr. Kenneth E. Boulding, an economist at the University of Colorado's Institute of Behavioral Science. The timbre of Dr. Boulding's voice evidently coincided with one of Harrington Auditorium's resonant frequencies, and as a result Dr. Boulding's address was largely unintelligible to many in the audience. That was unfortunate, because he had a lot to say.

"Basically," said Dr. Boulding, "the Bicentennial is a good excuse to look forward 200 years as we are now looking backward. The men of 1776 had an implicit 200-year vision, of filling up a great continent, empty by the standards of European technology, and a vision also of a new moral and political order. What 200-year vision can we have now, looking forward to 2175?

"1. It must be a *world vision*. The impact of science-based technology, which was latent in 1776 and exploded after 1860, is so large, so worldwide, and so destructive to traditional non-scientific societies which cannot adapt, that we are faced with the choice of one world or none.

"2. Our vision should aim for a *sustainable high-level technology*. We must become independent of the exhaustible stocks of oil, gas, and coal, and the exhaustible mines of materials. The only known sustainable technologies are low-level and poor, relying on the inefficient use of solar energy through agriculture and muscle power. A sustainable high-level technology must ultimately depend on the efficient use of solar energy applied to the recycling of materials. This is some way off; it may be postponed by developing nuclear fusion, though this is uncertain.

"3. We should aim for *political* institutions which eliminate war, protect cultural variety and individual liberty, and create a framework within which population is held constant and every child born has a fair chance of achieving its potential for a good life. This may not mean "world government" in the conventional sense, which could easily slip into world tyranny. It might mean a world of 500 states of great variety, held together in a framework of world political institutions of many kinds. We cannot predict the political inventions that may yet be made, but political inventiveness is essential, as it was in 1776.

"4. Our vision should aim for *economic* institutions that provide for variety, for a measure of individual choice, for inventiveness and responsiveness to demand, yet avoid inflation and unemployment, involuntary poverty or corrupting wealth, and preserve the sustainability of the system. Again, we cannot now predict what mix of exchange and grants, private property and public organization, will achieve this end. Neither the unrestrained market capitalism of the 19th century nor the tyrannical socialism of the 20th will do. Economic inventiveness is essential.

"5. We should aim for *religious* and *moral* institutions which meet the deep needs of human beings for larger identity, which foster compassion and a sense of community with the whole human race — past, present, and future — and which give hope of a meaning and significance to life which transcends the here and now. We must expect continuing revelation and the continuing renewal of potential. We must be sensitive both to moral criticism and to a criticism of morals, so that we do not fall into personal wrongdoing or into an insensitive and unrealistic moralism."

Dr. Boulding concluded that "the task is enormous. But we do stand in a dawn, however faint, of a better world than we have ever seen. It is a very stormy dawn. Catastrophes, perhaps greater than the human race has ever known, may lie between us and the Great Dawn. Famines, wars, environmental disasters are all too likely to lie in our path, and the probability that they will be fatal is not zero. It may be that humanity will fall back into universal, stable, and irretrievable poverty, or even that the whole evolutionary experiment in this part of the universe will fail.

"But there is a chance, large enough to bet our lives on, that we will make it across the tightrope of the next 200 years to that dream of the full realization of human potential which has always haunted the human imagination."

Journal cover wins college magazine award

The cover of last August's *WPI Journal*, a pen-and-ink drawing of a technological sphinx by Steve Tozier, '74, received an award of merit in the 1975 publications competition sponsored by the Council for the Advancement and Support of Education, a new organization formed in 1974 by the merger of the American Alumni Council and the American College Public Relations Association.

Letters policy adopted

At its spring meeting, on May 10, the Alumni Council approved the following statement of *Journal* policy regarding the publication of letters to the editor. The statement was drawn up by the Alumni Publications Committee in response to inquires regarding the publication — and non-publication — of letters.

ALUMNI PUBLICATIONS
POLICY ON LETTERS TO THE EDITOR

The *WPI Journal* is interested in attracting letters to the Editor because (1) the Letters to the Editor column should serve as a forum for interchange of alumni views on alumni or WPI matters, (2) letters are the simplest, most direct means of communication for alumni and (3) letters are a measure of alumni interest in both the *Journal* and WPI.

The *Journal* will publish letters to the Editor within the following limitations:

(1) Any letter that deals directly and on a timely basis with an article, or the issues presented in an article, published in the *Journal*.

(2) Any letter dealing directly and on a timely basis with an issue of general or special interest to the alumni.

(3) Any letter dealing directly and on a timely basis with any concern, action or policy of or relating to the Alumni Association or WPI.

(4) Any letter dealing directly with social, economic, cultural, political, historical or religious issues relating specifically to *Journal* articles or WPI activities.

The Editor of the *Journal*, under the guidance and direction of the Publications Committee, will exercise due discretion and caution in:

(1) Reviewing all letters to assure conformance to reasonable standards in style, language and presentation. He shall have the option of returning the letter to the author for changes or clarification but, in no case, shall he attempt to impose his views on the author.

(2) Selecting letters that are quantitatively and qualitatively representative of diverse views submitted in response to a specific article or issue.

(3) Deleting material to concentrate a letter on a single topic if such concentration is in the best interests of the *Journal* and its readers.

(4) Consulting with the Alumni Secretary, WPI officials, Alumni Publications Committee members and others, as necessary, to resolve special problems. After such consultation, the Editor shall have the right to decline to publish any letter deemed inappropriate.

Short takes

Editor: I endorse John Zorabedian's comments re the purposes of the *Journal*. The Liverwurst article is a good example of the WPI-relevant information he and I would urge you concentrate on. Good story.

R.H. McMahan, '50

Editor: After two sessions of "refresher" studies in planning, economics, financing, and operations of water supplies — one at IBRD Washington and the other at MIT and Harvard — I appreciate more than ever my *solid basic training* in civil engineering at WPI.

Prescott A. Stevens, '48

Editor: I generally don't read the articles unless one catches my attention. I believe that the dollars spent for this magazine could be better spent on the academic growth of WPI. I generally don't send $$ because of irrelevant dribble (sic) of this type.

R. Mandel, '71

Editor: I would like to see a more detailed coverage of the WPI Hockey Club. Perhaps your active interest would bring the sport out of the doldrums of being a "club" and into one of the ECAC competitive divisions.

Joseph F. Kieronski, '67

Editor: The new format is great. I also believe that "Completed Careers" is very well placed at the END!

W.F. Reardon, '32
Schenectady, N.Y.

Mysterious numbers

Editor: I am always curious about codes and computers. Would you tell us what lies coded in the numbers above our name (on the mailing label)?

000559301
Fred McGowan, '29
Guilford, Conn.

(Would I could tell you of the secret information revealed about you in that nine-digit number, Mr. McGowan. The unvarnished truth, however, is that it's merely an identification number which allows the computer to find your name and address record as well as other information about what fraternity you were in at WPI, and so forth. The director of alumni records and services suggests that you not try to memorize your number, because the whole computer file system is being changed and you'll soon have a new ID number — possibly with this issue of the Journal. *But in any case, the number alone doesn't mean much. —Ed.)*

Change at WPI — two responses to Marshall Kaplan's charges

two responses to Marshall Kaplan's charges

Editor: I have just finished reading, with much interest, a letter by Marshall Kaplan in the April 1975 issue of the *WPI Journal*, and it left a bad taste, one to which I must respond.

As one of the first of three graduates under the WPI Plan, in 1972, my reaction is somewhat biased. However, I shall endeavor to be as objective as possible in my remarks.

It has been my experience that the single most important aspect of my education at WPI has not been the body of knowledge with which I left, that being a very narrow field of study

known as Urban Planning, but a basic understanding of the various aspects of the learning experience and the ability to adapt to many different social and economic environments. This ability is embodied in the WPI Plan, and it is through the WPI Plan that I gained it.

Although I am unable to practice the profession of Urban Planning, because I choose to live in rural New Hampshire, far away from the nearest city or large town, thanks to a broader educational experience than those who passed before me at WPI, I am able to make a comfortable living at times. My education is not complete, in that I plan on getting an MBA within the next year, but at this point I can say that I am entirely happy with the education I received at WPI.

I would suppose that you, Mr. Kaplan, would consider me a subversive liberal, as perhaps I was while attending WPI, in that I worked for the creation of the WPI Plan. (I subverted the status quo while seeking a more humane environment from which to learn engineering, or anything else taught at WPI.) However, let me assure you that I still believe in the free-enterprise system, democracy, God, motherhood, and apple pie, as well as the necessity for engineers to obtain the very best education in their field of endeavor. There was something missing at WPI before the Plan. Call it social awareness or whatever, but you still missed it, Mr. Kaplan, and your letter aptly points out how badly it was needed when you attended WPI.

I would suggest, Mr. Kaplan, that you and everyone else stop using such derogatory jargon as "subversive liberals," because that only tends to alienate people into factions, and when that happens nothing is accomplished.

Neil C. Herring, '72
Haverhill, N.H.

Editor: If for some reason you should see fit not to print this letter, I would appreciate your forwarding it to Marshall; we spent two good years together as fraternity brothers.

Dear Marshall,

I was dismayed but not surprised to read your letter in the April issue of the *Journal*. I have found the thoughts you expressed common among other alumni who attended prior to the institution of the WPI Plan, as we did. It seems that in many cases two general ideas are usually expressed: (1) that an alumnus can barely recognize the old place on returning, and (2) that the academic excellence is being compromised.

To the first point, I must reply that the only constant is change, a worn cliche but apt. Considering the rate of change in this world it would be a sad case to return to Tech, say ten years after graduation, to find only minor changes in lectures to keep up with the pace. As a certified teacher, I urge you to investigate the changes that education at *all* age levels, both public and private, has undergone since your last contact with formal schooling; I trust you will be amazed. These "untested systems" are, already, bearing fruit to those whose motives are sincere. The educational literature is proof far beyond anything I could present. Or better yet don't just visit but involve yourself in one of the alternative educational endeavors in your area. I think you might have second thoughts about what is really "time tested".

The second point elicits a response that is more personal and much more difficult to get on paper. I believe the academic excellence of WPI is something that we, as students, built into a myth. I remember how tough those courses were and how damn many of them there were, it seemed a never-ending stream. After speaking with other engineering graduates from other places in New England and around the country in general, I have come to realize that the requirements and quality of education at Tech were totally in line with other good engineering schools, and I found it increasingly more difficult to use objectively the superlatives I had become so used to using.

I also remember 'fudging' labs, using exam files to study for examinations rather than learning the theory, and — what I consider most unfortunate — studying for grades because the pressure was on. I soon found out how meaningless the grades were after being employed in a responsible position. Finally, I remember that we really thought that our big cousin in Cambridge was superior to the school we attended and how depressing it was to think how hard we were working and how WPI's academic reputation was always second to that other Tech. WPI has moved, finally, out from rating second, as I see it. As Gary Davis so aptly put it — engineers are people. I knew that when I was at Tech; I was too busy to do anything about it. A school where curiosity and inquiries are stifled in any field is not a school but a factory. Don't confuse liberalism with nurturing curiosity. There are no "liberal arts type people." There are, as there always have been, two types of college students — "serious, questioning types" and "screw-off types." I believe the Plan will do much for both of these groups, by encouraging and possibly initiating curiosity, and by helping those not interested to find other outlets for their creative energy.

I agree that broadening limitlessly the scope of a small private college can be suicide in these days of tight money. I think the answer lies in enforcing the ties with other area colleges to fill in the gaps and limit duplicated effort. After meeting Dr. Hazzard, I am confident that if a solution to the dilemma is possible, it will be found. When was the last time you saw a newborn baby win a 100-yard dash?

Neil Glickstein, '69
San Francisco, Calif.

The nuclear debate — Some factual corrections

Editor: As a WPI alumnus with 33 years experience in the field of nuclear reactor design, engineering and evaluation, I was somewhat appalled to read the familiar anti-nuclear refrain in the April 1975 issue of the Journal. Neither of the letters from our overseas alumni, Messrs. Baker and Rollins, presents any material that is factually correct. Without attempting to refute all of the statements made, I would like to answer a few points from both letters as follows.

In regard to the question of reactor safety, the statement "of early AEC reports that a single nuclear accident could well result in 45,000 fatalities, etc." apparently refers to AEC Report WASH 740, issued 18 years ago. The quote is incorrect! WASH 740, actually stated that "the theoretical estimates indicated that personal damage might range from a lower limit of *none* injured or killed to an upper limit in the worst case of about 3400 killed and about 43,000 injured." Since WASH 740 was not really an accident analysis and did not attempt to quantify the potential accident, the AEC contracted for a more complete study several years ago under the direction of Dr. Rasmussen of MIT. This study, costing about $3 million, was completed in August 1974 and published in a 3500 page report. The probabilistic approach used arrived at the following set of values for a single reactor operating for 1 year:

Accident Probability	*Accident Consequence*
1 in 150,000	10 or more deaths
1 in 2,000,000	100 or more deaths
1 in 100,000,000	1200 or more deaths
1 in 1,000,000,000	2300 or more deaths

Thus the statement that there would be one chance in 33 of a *major* accident occurring over the 30 year life of 1000 reactors does not correctly reflect the results of the Rasmussen study.

As for the Price-Anderson Act which is aimed at protecting the public against these remote probabilities, so far the cost to the taxpayers has been essentially zero. In view of the unlikelihood of any future payoff the Price-Anderson Act is the last thing we taxpayers should be worrying about!

In Rollin's letter, the implication is that somehow the population will be harmed by routine releases of radioactivity from nuclear power plants. Since the estimated total man-rem dose from nuclear plants over the next 30 years will be 0.001 times that received from medical diagnosis and dental x-rays, I find it difficult to be concerned.

As for the "pittance" in R&D funds handed to the so-called "non-polluting" energy sources — geothermal, wind, tide, and solar — ERDA's budget for these areas amounts to more than $100 million for FY 1975 and FY 1976.

Contrary to what he believes, Alumnus Baker might be interested to know that the majority of those who worked on WASH 740 18 years ago are still employed by the AEC (ERDA).

My final point is that the majority of the steam electric generating plants in the U.S. operate at steam pressures between 1800 psi-3500 psi rather than at 200-300 psi as stated by Mr. Rollins.

J.A. Lane, '36
Oak Ridge, Tenn.

How wide the gap before disaster?

Editor: The cost to educate a Massachusetts resident in an independent or tax-supported college or university in this state is surprisingly close. The combined expenditures per student for 1975 are estimated as follows:

University of Massachusetts (includes Medical School)	$7,514
Private Independent Colleges	$4,590
State Colleges	$4,228
Community Colleges	$4,326

But the cost to the students for this education differs radically. Here at WPI, for instance, our students paid a tuition of $2,900 last year while at a college in the public system they paid a mere $300. Our students are paying ten times more, or $12,000 over four years at WPI.

The reason for this incredible gap is no mystery. WPI as an independent institution must each year raise the bulk of its funds (except for some federally funded programs, mostly in research) from private sources: from its students through tuition, and from alumni and other friends through their gifts. Students must bear a large portion of the cost through tuition. Colleges and universities in the state system are funded by the Commonwealth. The more students they register, the more money they get — automatically. Every student at a tax-supported school receives a large but hidden scholarship from the taxpayer. More remarkable still, this support is provided whether the student needs it or not.

Massachusetts policy provides support for higher education to students *only* if they go to a tax-supported school whether the help is needed or not. If they go to an independent college, students are on their own.

This policy has had three predictable results. It has provided students access to higher education only in state colleges and universities. It has stimulated the flow of larger numbers of students to tax-supported institutions. Since the budget of these colleges and universities is based on enrollment, this policy has led to the proliferation of new programs to attract more students. However, there has been no overall planning or coordination between the independent and public sectors. Programs are constantly being developed in the state system that duplicate those in the private sector.

As long as the demand for college exceeded available places for students, this way of running things didn't upset enough people to raise a real controversy. But as birth rates dropped and inflation soared, the pressure for college space lessened, with the result that fewer and fewer students could afford to go to independent schools. This now became a decision based on financial considerations, not on what program or college might best suit their needs.

In the meantime the tuition gap between the public and private sectors has widened. The question now is: How wide the gap before disaster strikes? Present policy, if allowed to continue, will push many if not most of our independent colleges and universities right out of existence. If that happens, it will have been brought about with taxpayers' dollars.

To prevent this from happening, what can and should be done? The first step was taken when the voters of Massachusetts last November adopted an amendment to the Constitution removing the prohibition of state aid to private institutions of higher education.

Of the many proposals submitted, the Massachusetts Taxpayers Association has argued that tuitions at tax-supported institutions should be increased to bring them closer to their true spending. They recognize that many students would need financial help to attend college and propose a state fund to meet this need. The taxpayers argue more of the cost of education would be met by the beneficiary.

An alternative way to avoid the threat of state control over all higher education would be to adopt a program similar to the New York State Tuition Assistance Plan. Under it, students residing in that state may get a tuition grant as large as $1500. They can use it at any school of their choice within New York State, provided they qualify for admission. This has reduced the tuition gap between the public and private sectors.

The advantages of a New York State Tuition Assistance Plan are many. It eliminates the control question, because the funds are directed to the student. It provides all students with considerable access and choice in selecting a college within their state. Unfortunately, because TAP funds cannot be taken out of New York State, the program has reduced the flow of New York students to independent colleges and universities in Massachusetts, exacerbating their financial plight.

A proposal free of the drawbacks of most would be a system of educational "contracting." Under it, the Commonwealth of Massachusetts would contract out specific educational tasks based on needs. It would pay for these tasks in the way it pays for all its other contracts for goods or services. Let's assume the Commonwealth finds there is a need for 300 more engineers in certain fields. It could come to WPI and ask us to educate, say, 100 of these engineers. If we had the space available we might enter into a contract with the state. Such contracting isn't unprecedented: Boston University, Tufts, and Northeastern are educating physical therapists on contract right now.

The financial benefits of contracting are many: it would free the Commonwealth from creating ever-new educational programs and facilities; it would use those which already exist at independent colleges and universities; it would save the taxpayer money; and it would preserve the independent college and university, which has been such an inestimable cultural asset of our Commonwealth for over three hundred years.

This combined approach of contracting and student support would use and preserve what we have. It would save money for taxpayers and provide greater opportunity to all students.

Whatever the answer to the plight of the independent institutions of higher education in our Commonwealth, public policy and philosophy should be changed to: provide all our students with the greatest possible access in choosing the college or university which best meets their needs and interests; allow independent and tax-supported institutions to compete with equal ability for students; preserve the priceless heritage of our independent colleges and universities.

The gap is wide and time is running out, but it can be closed before disaster.

Thomas J. Denney
Vice-President for
University Relations
WPI

Three alumni named Trustees: Lewin, Smith, Graham

Three alumni were elected term trustees at WPI last spring. They will each serve for five years on the Board.

Carl W. Lewin, '39, is vice president for international sales development at the Austin Company. He joined Austin as a field engineer in 1940 and became a project planner in the Chicago district in 1942 with responsibility for the sale of projects for Sinclair Refining Co., A.B. Dick Co., Rand McNally and others. In 1965 he was named vice president and general sales manager of Austin's international operations and was given responsibility for coordination of sales activities of the firm's overseas subsidiaries. He was appointed president of the International Division of Austin Company in 1972. Currently he is corporate vice president and is responsible for promotion of sales for Austin's international companies.

Mr. Lewin is a member of the American Society of Civil Engineers and the American Management Association. He is past president of the Board of Education in Palatine, Illinois. Twice he served as United Fund Drive chairman in Palatine. A member of the Northwest Council, BSA, he was awarded the Silver Beaver, the top adult honor awarded by the council of the Boy Scouts of America.

Arthur E. Smith, '33 former chairman of the board of United Aircraft Corporation, is retired. He joined the Pratt and Whitney Division of UAC as a test engineer in 1935, becoming a project engineer in 1938 and chief engineer of the Missouri plant in 1942. He was named assistant engineering manager in 1952 and engineering manager in 1956. In 1967 he was appointed president of Pratt and Whitney and executive vice president of the United Aircraft Corporation that same year. Promoted to

director of UAC in 1968, he served as its president and chief administrative officer until 1971. He was executive committee chairman in 1971-1972 and operated as chairman of the board from 1972 until 1974.

Mr. Smith is a member of the Society for Automotive Engineers and a former member of the Committee for Development of Supersonic Transport. He was trustee of the Manchester Memorial Hospital and a term trustee at RPI from 1969 until 1973. Formerly he served as a member of the Manchester Redevelopment Agency and as director of the Hartford Fire Insurance Co. Presently he is director of Travelers Card, the Savings Bank of Manchester, and United Aircraft Corporation of Canada.

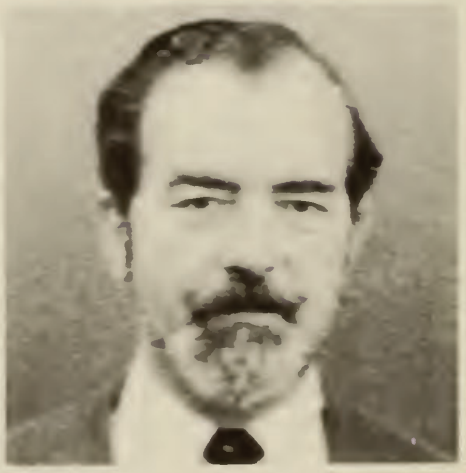
In 1969 he received an honorary doctor of engineering from WPI and the Robert H. Goddard Award in 1967. His son, David, graduated from WPI in 1961.

Thomas B. Graham, '38, is a lawyer. He was a former technical assistant to patent counsel at Allied Chemical and Dye Corporation in New York from 1940 to 1942. He served as patent adviser to the director of the Naval Reasearch Laboratory from 1943 to 1946 in the U. S. Navy in the office of the Judge Advocate General. He was assistant patent counsel from 1946 to 1950 with the Pure Oil Company in Chicago and from 1950 to 1955 was an associate member of a large firm in New York City. From 1956 until 1959 he operated his own law office, later becoming a partner in a large New York firm from 1959 until 1965. He reopened his own office in 1965.

Mr. Graham, who received his J.D. degree from Georgetown University, is a member of the bar in the District of Columbia, Illinois, and New York, is admitted to practice before the U.S. Patent Office, various federal courts, and the U.S. Supreme Court. Since 1957 he has been an adjunct professor of law of industrial and technological property at the Polytechnic Institute of Brooklyn. He is a member of the American Bar Association Patent-Trademark-Copyright Section, the Anti-Trust Section, and has served on various committees and continuously as a member of the Chemical Practice Committee. He is also a member of the International Union of Pure and Applied Chemistry and the Patent and Trademark Institute of Canada. He is active in the Scarsdale Town Club and started a Boy Scout troop at his church.

Carl W. Levin

Arthur E. Smith



Thomas B. Graham

He is past president of the New York Chapter of the WPI Alumni association and former member of the Alumni Council, Alumni Fund Board, and Committee on New Students. He has served as a WPI alumni trustee since 1970.

Fran Harvey '37 elected Association president

New Officers for the Alumni Association for the coming year are:

President: Francis S. Harvey, '37 president and treasurer of Harvey & Tracy, Worcester, Ma.

Vice President: Richard A. Davis, '53, president of King-Seeley Thermos Co., Thermos Division, Norwich, Ct.

At large: Julius A. Palley, '46, co-owner of Commonwealth Stationers, Worcester Ma. John Lott Brown, '46 director of the Center for Visual Science of the University of Rochester, NY.

Past President: Walter J. Bank, '46 marketing manager for Systems Consultants, Washington, D.C.

Alan Briggs, '76, is named WPI's first All-America in track

The temperature at Sacramento (California) State College was 102 degrees when the race started. One mile and exactly 4 minutes and 15.0 seconds later, Alan Briggs crossed the finish line in seventh place at the NCAA Division II National Track Championships held May 31. As one of the top eight, Briggs was named All-America in track, the first WPI student to be so honored. Briggs' time was just 5½ seconds off the winning pace of 4:09.5. (The two top-seeded runners in the event finished 11th and 12th . . . in a twelve-man field.) For more about Briggs, read the next story about

A grand and glorious track season!

If WPI coach Merl Norcross had his choice of days to live over again, May 6, 1975, would certainly be one of them. On that particular Tuesday, his track team came through with flying colors. In defeating Trinity College 102 to 52, the team presented Norcross with his 100th track victory and rang down the curtain on WPI's first-ever undefeated and untied season. (In 1963 the track team was undefeated but tied.)

During the season, three new school records were set and one other tied. Alan Briggs, '76, ran the mile in 4 minutes 10 seconds. Team captain Jeffrey Wnek, '75, ran the three-mile event in 14 minutes 40.7 seconds, while co-captain Robert Donle, '75, achieved a triple jump of 46 feet 7½ inches. Gary Pearson, '77, tied the 13 foot pole-vault record.

In recognition of their outstanding achievements, the Poly Club presented each member of the squad with a plaque featuring a color photograph of the team, the season, the record, and the names of the team members. The Alumni Association also gave each member a citation.

The team posted impressive wins over city rivals Worcester State, Clark, and Assumption, then went on to defeat northern circuit opponents Colby, Middlebury, and Norwich as well as the strong teams of M.I.T. and Tufts.

In the city meet it was WPI's overall depth that did the trick, with eight first-place finishes.

Over JP weekend, WPI trounced Colby and Norwich — this time with eleven firsts. Gary Pearson topped the day with a pole vault of 13 feet 6 inches, but because of wind conditions his jump was disqualified. Against M.I.T., the WPI track men won 89 to 65. Four days later, Donle set his triple jump record against Tufts. Then, at the Easterns, held at Bowdoin in May, Briggs set his mile mark.

Coach Norcross attributes the outstanding season to "the overall team balance and depth, which insured repeated victories all season." One important factor in the strength of this year's team was in the efforts of three outstanding performers who were second-generation WPI students — and whose

forebears at WPI were also prominent in the sports scene.

Jon Hatch, '75, a four-year letterman in track and a consistent winner in the 100-yard dash, wanted desperately to break the school record in the 220 — which his father, Edwin Hatch, '37 had set back in 1935. Jon didn't make it, though, and the senior Hatch's record of 21.6 seconds still stands.

Richard Brandoli, '76, once held the WPI record for javelin (at 195 feet 11 inches) and also throws the hammer. His father, Raymond A. Brandoli, '49, played football at Tech while his uncle, Harvey Vigneault, '49, was active in interfraternity sports.

Alan Briggs, '76, comes from a long line of WPI athletes. One brother, Oliver, '70, was captain of the basketball team while another, Douglas, played football. His uncle, Henry Dumas, '56, was a baseball player. Briggs' grandfather, Charles D. Briggs, was a member of the Class of 1913. Briggs has served as co-captain of the cross country team and was a sports writer and editor for *Newspeak*.He has been elected co-captain of next year's team.

"This year Al broke the record in the mile," reports a smiling Norcross. "When he was at Wachusett Regional, he was the Knights of Columbus Road Race Champion and Class B state mile champion. With talent like that — plus the seniors' four-year record of 40 wins and 7 losses, how could we lose?"

Team talent, certainly, is a prerequisite for a championship season. So too is superior coaching, and Merl Norcross provided plenty of that. Speaking about him, Prof. Robert Pritchard, head of the department of physical education and athletics, says, "Merl's outstanding success this year comes as no surprise to those who work with him daily. He is devoted to working with the track team, and no squad member could ask for any more dedication than he gives. I know that his quiet, consistent recruiting of qualified high-school track men, done almost exclusively by letter-writing and phone calls, is paying off. Further, Merl's position on the NCAA Track and Field Rules Committee has earned him recognition in the collegiate world and brings great credit to WPI. He richly deserves this moment of triumph."

In turn, Norcross credits the efforts of others who contributed to the winning season, citing Prof. James Herrion, his assistant coach, and Dean John van Alstyne and professors Allen Hoffman, '63, Hal Corey, Tom Keil, Bill Miller, and Bob Pritchard, who served as officials. Managers of the undefeated team were Ron Matthews, '75; Tina Tuttle, '78; Carol Sigel, '77; Cynthia Gryniuk, '78; and Steve D'Alssandro, '78.

Merl Norcross arrived at WPI in 1952 as a physical education instructor after graudating from the University of North Carolina with an AB and a master's degree in education. He had been a member of the 1948 Sugar Bowl team, the 1949 Cotton Bowl Team, and had run on two Southern Conference championship track teams. In 1957 he was promoted to assistant professor at WPI, and since 1967 has been associate professor of physical education and athletics. He belongs to the U.S. Track Coaches Association and the New England Football Coaches Association. In 1973 he was appointed a member of the previously mentioned NCAA rules committee. He is currently chairman of the Division II Track and Field Committee, which runs the national championships. Professionally speaking, he knows his stuff!

Only two school track records have not yet been beaten or tied by WPI athletes coached by Merl Norcross in the past 23 years — the 220 by Hatch, '37, and the long jump by Al Deloid, '49, are still standing. This year he coached the WPI track team to that rare achievement — the first unbeaten, untied, season in the school's history. His record speaks for itself.

Alan Briggs winning the mile run against Trinity. You might just be able to make out the second-place finisher—he's just rounding the turn.

There was *another* young lady from Becker . . .

or, The alumni get their revenge on WPI

In the February issue we printed the more printable results of an on-campus limerick contest. We followed that with a challenge to alumni to see what they could produce, holding out the inducement of a beer on the house for each published specimen. While the response was not overwhelming, the quality was high and those who sent in entries certainly put in a lot of time and effort. It would appear that the grand prize for effort belongs to Phil Pierce, '31, who sent in six (count em, six) limericks!

Evidently the limerick-writing process is just not that easy. Three entrants chose to comment on the difficulties and the quality of the finished product:

With limericks I am not a master;
This rhyme, no doubt, 's a disaster.
But I could care less
'Bout poetic finesse;
It's free beer at the Pub that I'm after.

—John E. D'Amico, '74

There once was an incredible bunch
Who came up with a ridiculous hunch:
They each wrote a rhyme
For the very first time
And made me regurgitate lunch.

— C. Chapin Cutler, '37

There once was a Pub on the Hill
Where students at bay drank their fill.
They all tried to write rhymes
And failed time after time;
Better work comes from graduates still.

— John P. Hyde, '45

On other subjects:

The swordfish are gone and forgotten.
For us the job market was rotten.
To become bigger fools
We all went to grad schools,
And now we mine coal and pick cotton.

— R.A., '71

Mention limericks and I rise to the bait.
No somber sonnets do I wish to relate.
When the subject is Poly,
My sentiment: "How jolly!"
Her praises on paper I'll state.

— Phil Pierce, '31

And finally, in case you sent in a limerick which doesn't appear here, Phil Pierce has the last word on that:

A limerick requires no great style;
Just let your thoughts idle a while.
Send the results to R.K.
And when he's had his way,
"No good, sorry," he'll say with a smile.

WPI

The next most popular topic was the famous (infamous?) WPI Plan:

Said a peddler by name of John Boynt,
While towards this great Hill he did poynt:
"Hey, let's build a school
Where any damn fool
Can get a degree from the joynt!"

— Alex C. Papianou, '57

There once was a grumpy alum
Addicted to cola and rum,
Resulting in letters
Insulting his betters
Who'd *Planned* for the future to come.

— anonymous

At a school on a Hill in Worcester
Proffed by graybeards and 8 or 10 roosters,
They devised a great Plan
First espoused by Grogan
And turned many more grads into boosters.

— Bill Bushell, '37

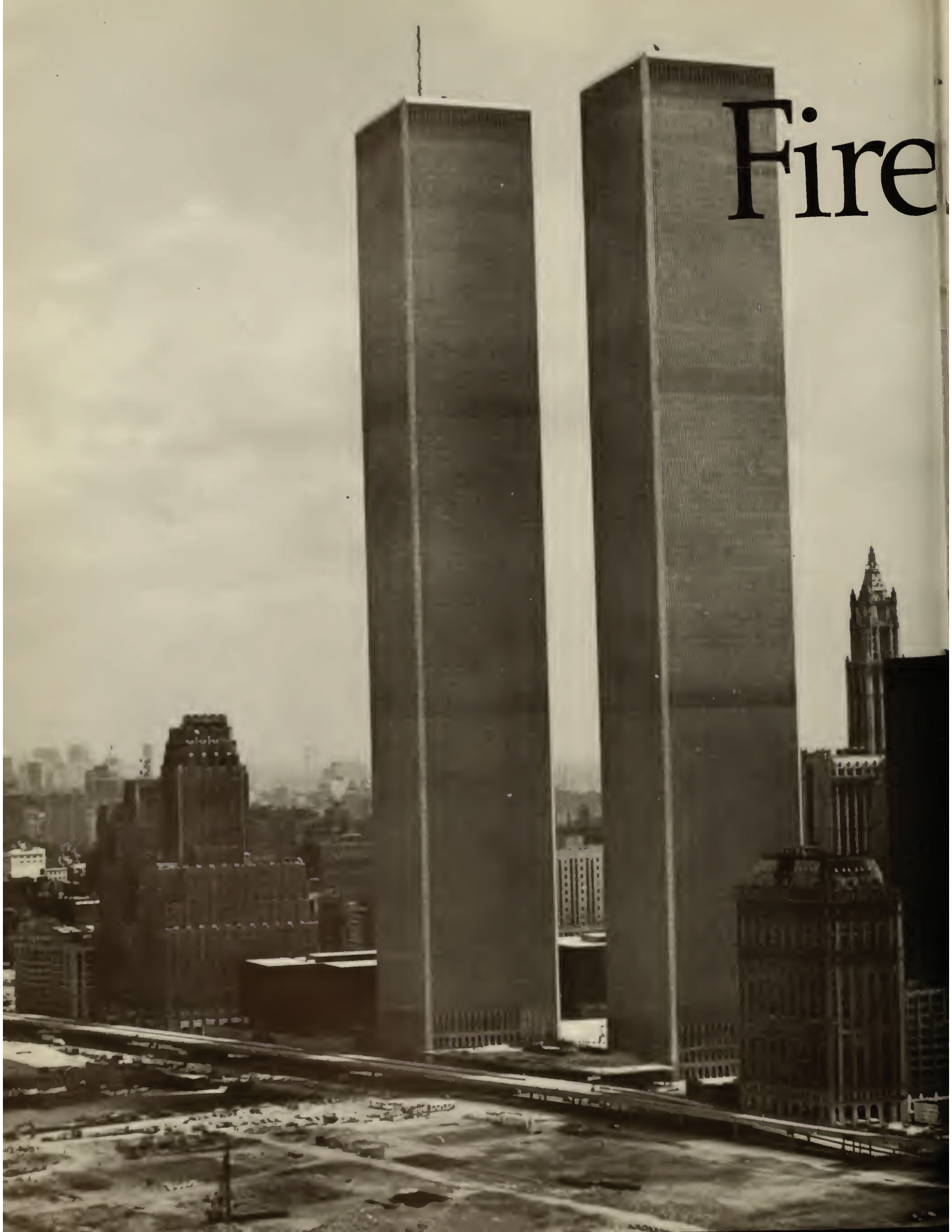
The problems of women came in for some attention:

There was a young lady from Becker
Who lived in a high-rise three-decker.
She ran up the stairs
Which started her cares,
But the rooms had all gone with the wrecker.

— Herbert Neuman, '36

There was a young woman of Tech
Who decided to stick out her neck.
"An alumna am I,"
She said with a sigh,
"But they never bother to check."

— Allison Huse Nunn, '73


Fire

up above!

The movie Towering Inferno *was still playing to packed houses. Along with other 'disaster' pictures, it had sharpened the public's uneasy awareness of danger from catastrophic events.*

And then the nation was stunned when it learned, on the morning of Friday, February 14, 1975, that fire had broken out in the World Trade Center, New York City's tallest building, the second-highest in the world.

That fire was not the tragedy envisioned by Hollywood. No lives were lost, and the building was not seriously damaged. But the question remains:

Could life imitate art?

Could Towering Inferno *really happen?*

One of the people best able to answer that question is W. Robert Powers, '37, superintendent of the New York Board of Fire Underwriters, one of the nation's leading authorities on fires in high-rise buildings. Powers was in charge of the Board's investigation of the World Trade Center fire, and his findings pinpoint the problems of making and keeping such buildings safe for people to live and work in.

. . . think of this article the next time you're waiting to see someone on the 43rd floor.

THE EARLY MORNING NEWS reports set the minds of all fire buffs in the New York metropolitan area to feverish activity. Fire was reported from the 9th to the 19th floor in the North Tower of the World Trade Center. The possible consquences and solutions radiated throughout the area. Suppose 6,000 people have to go to the roof, with flames licking up the stairs, elevators, and windows. How can they be rescued? The French tightrope walker showed how easy it was to do this. Get a bow and arrow and shoot a fishing line from the South Tower to the North Tower. Pull a heavier line and then a steel cable between the two roofs. A breeches buoy then could make a round trip every minute carrying one of the trapped occupants to safety. **Every minute!!** With 6,000 people waiting, that would take 100 hours, or over four days. The last survivors would be dead of starvation or dehydration if they managed to survive the advancing flames.

There must be a better way

The most commonplace solution that flashed through people's minds to rescue the imagined trapped 6,000 was by means of helicopters. A phone call to New York Airways would bring two of their 30-passenger helicopters to pick the people off the roof and deposit them safely at Battery Park only a few blocks away. Since a copter could make the round trip in five minutes, two of them could save 720 people per hour. The whole 6,000 could be moved in 8½ hours . . . which is a long time when flames are singeing your feet. Besides, this plan ignored the TV transmission antenna being erected on the roof, the winds that always blow at the 110th story, and the danger of engine failure because of smoke and heat.

There must be an even better way

Fortunately there were no trapped occupants on the roof during this fire, and there certainly is a better way to safeguard the tenants. A study of the fire and of the World Trade tower buildings is necessary to comprehend that better way.

ABOUT 11:35 p.m. on Thursday, February 13, 1975, a porter finished his chores on the 12th floor and took the elevator to the 11th. After working about ten minutes, he heard a crackling sound and saw flames under the door leading to the R.J. Saunders' office. He turned in the fire alarm to the World Trade Center Police. The city fire department was called, three policemen with a fire-equipment cart went to the fire floor, and the engineer was prepared to put the air conditioning into its purge mode. One minute after the manual alarm was received, the smoke detector in the air conditioning plenum at the southeast corner of the 11th floor operated. Smoke detectors on the 12th to 19th floors, except for the 15th, operated successively at about one-minute intervals. In the meantime the police, wearing air packs, reached the 11th floor and found the door to the Saunders' office too hot to open. They used a standpipe hose from a nearby stairway to try to cool the door. They reported via walkie-talkie of the serious fire, and the air conditioning was placed into the purge mode. This meant that fresh air was being blown into the core area to keep it free of smoke, and air was being drawn out of all the tenant areas to prevent smoke from spreading throughout the building. The fire department arrived promptly and spread hose lines to bring the 11th floor fire under control.

This was a hot and stubborn fire to extinguish. It was not recognized immediately that fire had spread to other floors, but a search disclosed that fire from telephone closets on the 12th and 13th floors was igniting files in these office areas. This discovery caused the fire department to order evacuation of all cleaning and service personnel in the building. Further search showed that the fire had extended to telephone closets on the 9th through 19th floors. These fires were readily extinguished. The fire involved about 9,000 square feet of the 11th floor, destroying about half the contents and damaging the remainder. It completely burned out telephone panels and wiring on three floors and caused severe damage in eight others. Four steel bar trusses were distorted slightly.

During a fire, it is extremely difficult to determine details on causes and effects. The prime consideration is to put the fire out. As soon as the smoke had cleared, though, and for many days later, a detailed study was made to determine the origin and reasons for the spread of the fire.

R.J. Saunders occupied the southeast corner of the 11th floor of the North Tower, also known as Tower A or 1 World Trade Center. On the day of the fire, the last Saunders employee left the office about 9:30 p.m., and the cleaning woman left about 10:30 p.m. Both reported conditions normal when they left. The cleaning woman does not smoke. It is believed that the fire originated in the executive offices from some unknown source at about 11:30 p.m. Overstuffed furniture burned fiercely and the fire spread south and west along corridors toward the open office area. The fire entered the file room where numerous records were stored on narrow shelves, some with steel shutters. Unfortunately, all of the shutters were open. A gallon of methyl-alcohol duplicating fluid in this room was set aflame by the heat.

It appears that a flashover occurred just as the Port Authority policemen reached the office door, driving the fire out of the office it started in and breaking seven windows in the east wall. Fresh air to fan the fire entered the 11th floor through these broken windows. The outer skin of the building suffered no smoke or heat damage because the airflow was inward. Fire also spread through the horizontal channel in the peripheral heat diffuser units to adjoining offices. At about the same time the windows broke, the air conditioning was placed in the purge mode and exhaust fans pulled air into the plenum to the return air duct at the southeast corner of the core. The air conditioning is not operated at night so there was no movement of air in the system prior to the purge.

Telephone cables in the plenum were ignited by the fire. Because of openings around the cables and louvers in the telephone closet door, fire penetrated the closet to ignite telephone panel blocks and cables. Fire spread to upper and lower levels through openings in the floors of these closets. Cables passed vertically through the openings, but no fire-stopping was provided for spaces around the cables. The polyethylene and polyvinyl-chloride cable insulation and plastic panel blocks burned readily so that virtually everything that could burn, including the fire-retarded wood paneling on the telephone closet walls of the 10th and 12th floors, was destroyed. Fire emerged from the telephone closets on the 12th and 13th floors in the same manner it entered on the 11th floor. Fortunately, there were relatively small amounts of combustibles near the closet doors on these floors so that the fire department had no trouble controlling these blazes.

Meanwhile, back on the 11th floor, smoke and fire gases were being kept out of the southeast quadrant by a

one-hour fire partition that subdivided the floor area in accordance with New York City's Local Law No. 5. Some heated gas was being drawn around the core to the northeast and northwest return air outlets, but closing of protective dampers now caused all the fire gases to flow to the north end of the building. Eventually a fusible link on the northeast shaft melted, closing a shutter, but it is believed that the fire was under control at this point. However, high temperatures in the plenum radiated enough heat into the offices north of the fire to melt plastic phones and char papers on desk tops . . . but ignition did not take place.

CONSIDERABLE DISCUSSION ensued after this fire regarding its effect on occupants had it occured during working hours. It also raised the question as to whether more fires could take place which could threaten the thousands of people located throughout the 110 floors. The World Trade Center is unique in many respects, but it has sufficient points in common with all high-rise office buildings that its story is applicable everywhere.

The twin towers of the World Trade Center, each 209 feet square and 1,350 feet tall, rise above a five-acre open plaza. There will eventually be four low-rise buildings surrounding this plaza to complete the project.

While the casual outsider sees two towers stretching skyward, a closer look would show that each building is divided into three vertical sections about 32 stories high by the mechanical equipment rooms. Tenants would consider the building to be three units because of the sky lobbies where they transfer from express to local elevators. Elevator engineers might consider each tower to be a series of seven- and eight-story buildings because this is the number of floors served by individual elevator banks. None of these concepts is correct, however, because of overlapping of the various supposed zones.

Sky lobbies are located at the 44th and 78th floor levels. Express elevators carry passengers to either sky lobby, which functions the same as the ground-floor lobby. There are four banks of elevators for each segment serving six or seven floors and having no openings into other floors. This is an important feature because evacuation during a fire could be carried out by the use of all elevators except for the bank that has openings to the fire floor. There is one elevator which stops at all floors, and it is set aside for fire department use during an emergency. The air-conditioning system actually divides the building into four vertical sections. Fan rooms on the 7th, 41st, 75th, and 108th floors provide air conditioning for floors 1-24, 25-58, 59-91, and 92-106, respectively.

The basic fire protection consists of standpipes with hose and two fire extinguishers in each of the three stair towers. Water supply for the standpipes is from 5,000 gallon tanks on four levels. Only two pumps in series are required to provide the pressure needed to reach the top of the tower.

At the time of the fire smoke detectors were being installed at the return air outlets in the four quadrants of each floor. This installation is now complete. These will sound an alarm and identify their location at the Police Desk. In addition, operation of these smoke detectors will shut down the air-conditioning system.

There is a manual fire alarm box on each floor that provides two-way communication with the Police Desk in the basement.

Some floors or sections of floors have been sprinklered, including all restaurants not under Port Authority ownership. Sprinklers have not been provided in Port Authority restaurants because the furnishings meet their special flammability standards. Hoods in all kitchens are equipped with automatic fire protection of various types.

Any discussion of the World Trade Center would be incomplete without mentioning two unique fire safety features: their limits on contents combustibility and their fire safety plan. In 1970, before the first tenants moved into the building, the Port Authority Safety Department recognized the hazard of combustible furnishings, especially foamed plastic cushioning for chairs and sofas. Specifications for flammability of furnishings were developed; they are adhered to in Port Authority and New York State Offices and are urged for use in other tenants' offices. Briefly, these recommendations ask that chairs be no more hazardous than red oak, that upholstery materials, drapes, and curtains be self-extinguishing as defined by federal specifications, and that carpets have specified low flame-spread ratings. These recommendations do not call for completely non-combustible furnishings, but they do limit the fire hazard to prevent extremely rapid combustion.

The fire safety program of the World Trade Center is excellent. It should be, since 50,000 tenant workers and 65,000 visitors each day are anticipated in this complex. There is a full time fire protection engineer and five fire safety directors, trained and certified by the New York City Fire Department, for the Center during the day. At night there are two fire safety directors. Their duty is to control fire-fighting, notify tenants of conditions, and

guide evacuation until the fire department takes control. In addition, there is an initial fire brigade of three trained policemen to respond immediately to each alarm with a fire-fighting cart containing extinguishers, air packs, resuscitators, and first aid kit. Communication between units is maintained by walkie-talkies carried by all of these men and furnished to the fire department on arrival. This is not just a paper organization — fire drills are held every three months with every tenant and its wardens participating. Once each year informatory sessions are held to update tenants on the latest fire-prevention information. Of prime importance are fire drills held monthly (on Sundays) by the New York City Fire Department. The same crews are not brought in every time, but second and third alarm companies in remote locations also drill in case they must respond to the Center.

One important factor to be aware of is New York City's Local Law No. 5, Fire Safety in High-Rise Buildings. This law, generally speaking, gives a building owner the option of installing automatic sprinklers or providing a series of other alternatives.

1. The law requires large floor areas to be subdivided into compartments of no more than 7,500 square feet by one-hour fire partitions. Where a tenant wants a large open area, the entire floor is sprinklered.
2. The law requires that stairs be pressurized or an automatic smoke-evacuation system provided.
3. Smoke detectors must be provided on each floor at each return air shaft.
4. There must be a manual fire alarm and communication system that provides two-way communications with the fire wardens on every floor and a public-address system to communicate with the tenants on one floor or any series of floors.
5. The law requires smoke detectors in all elevator lobbies to send elevators to the ground floor or sky lobby on actuation.
6. It is required that interlocks on elevators be wired with high-temperature wire and equipped with a fireman's switch that gives a fireman complete control of the elevator.
7. It is required that there be floor wardens, fire safety directors, fire-command centers, and evacuation drills with tenants.

MANY PEOPLE have asked: How safe are the two World Trade Towers? Realizing that about 65,000 people may be in one tower at any height from ground level to 1,350 feet, it is obvious that there is no margin for error. Overall, these towers may be considered among the safest buildings in New York City. There are bad points — fireproofing of the steel may be missing in places; openings have been made in floors and walls, but it must be said that the World Trade officials have reacted quickly to fire-stop these openings; fire rating of shafts is just above minimum requirements; wiring ducts under the floor (as in many other buildings) have questionable fire resistance; and construction hazards and deficiencies due to incomplete construction are still present.

However, the good points outweigh the bad:

- Limited combustibility of furnishings is a proper point to start. If tenants would support these recommendations, the chance of a serious fire would be small.
- Good vertical protection between windows and at the junction of the outer wall and floor slab.
- Non-combustible building components including thermal insulation.
- Ability to vent smoke and pressurize core.
- Automatic sprinkler protection in basements, shops, and special hazard areas.
- The presence of trained fire safety directors and police for fighting fires, as well as drills with the New York City Fire Department in case of fire.

Last and perhaps least understood is the building arrangement. The building is subdivided into many vertical components so that total involvement in fire is almost impossible. There are only three vertical shafts that travel the height of the building, and only one has openings on every floor and is designated for fire department use. The other two elevator shafts have openings only at ground floor, the sky lobbies, and in the upper third of the building. The chimney effect so often mentioned as a danger in high-rise buildings cannot be 100 stories in effect, but will be divided into four components by the action of the air-conditioning systems. None of the stairs run straight from the top to the bottom of the building. Stair towers are offset at various floors where the size of the core changes or the number of elevators serving a floor is reduced. At each of these points, horizontal passageways lead to the new shaft locations and fire doors are provided. These doors would prevent smoke from contaminating a stairway from top to bottom. The arrangement of elevators is such that they could not carry fire throughout the building, but could only be a factor in a limited number of floors.

THE NEED for a better way to save people trapped in a fire has been demonstrated. There is a better way — **Don't let it happen**. What is true of the twin towers is true of many, if not at all, high-rise office buildings and will be applicable in varying degrees. Similarly, what has been learned in other high-rise office fires in New York City will certainly be applicable to the World Trade Center.

There are over 2,000 high-rise buildings in New York City, excluding residential structures. Of this total, 805 are Manhattan office buildings. Experience has shown that about 170 fires will start in these buildings each year, and most will be of no consequence. In 151 of these office buildings that are fully sprinklered, records show that in the past six years there were 85 fires in which sprinklers came into operation. Sixty-four of these were controlled by one head, 11 fires by two heads, 6 fires by three heads, and single fires by four, five, and six heads. There was only one failure, which was caused by a shut floor valve. These fires occurred from the basement to the 34th floor.

The experience in New York City for almost 75 years shows that fires can be started from many different causes, ranging from an Air Force bomber crashing into the Empire State Building to a cigarette dropped into an over stuffed chair. Somewhere in between are the incendiary device hidden in a reception room and the welder's sparks that have been responsible for many fires. However, the list of spectacular fires In New York City for the fifty years from 1917 to 1967 is very small, and the loss of life was essentially zero in all high-rise fires in this period. The exception, of course, is the plane crash, which sprayed about 800 gallons of gasoline on two floors but still did not jeopardize the strength of the building. Not all fires have been confined to one floor: the Woolworth Building had a grease duct fire that extended from the basement to the roof of the building; the Empire State had an insulation fire that spread from the 31st to the 66th floors, and fires in elevator shafts are relatively common. There were serious and unusual fires, but they were readily controlled before reaching conflagration proportions.

However, in 1968 and early 1969, experience changed dramatically with the occurrence — only months apart — of the Time and Life Building fire that provided spectacular television shots, the Chemical Bank fire that frightened occupants because of smoke penetrating many stories, and the fire in an architect's office that killed ten occupants. The fact that this last fire was not in a high-rise building, but on the 3rd floor of a small five-story fire-resistive building, heightened the concern of New Yorkers for their safety. The fires in 1970 at 1 New York Plaza and 919 Third Avenue, where a total of five people died, showed that the safeguards of the past no longer existed. It was apparent that hazards and deficiencies do exist in high-rise office buildings, and local Law No. 5 was enacted to reduce or eliminate the danger to life.

WHAT ARE THE HAZARDS today that were not present in the fifty-year trouble free period?

1. **Combustible furnishings.** In order to have a fire, it is necessary to have something to burn. The all-steel office of the 20s and 30s with steel desks, steel files, steel and glass partitions, and masonry-enclosed stockrooms are becoming a thing of the past. In their place, fashion dictates the use of overstuffed chairs, wood desks, combustible "landscape" partitions, combustible carpeting, and combustible paneling or finish on the walls. The most serious aspect is that very highly flammable foamed polyurethane and foamed rubber cushioning is used, which burns at an extremely high rate and gives off flammable gases and copious smoke. Burning of this material is so rapid as to pose a threat to people in the immediate or nearby areas.

Not to be overlooked is the tremendous quantity of paper used in offices. Computer printouts use large quantities of paper and generate masses of used carbon paper. The storage of files on open racks or in cardboard cartons can turn an office into a small warehouse. Reference libraries in lawyer's offices and drawing racks in architects' offices create a severe fire-loading and have caused several serious fires.

2. **Central air conditioning.** The central air-conditioning system itself is not a fire hazard. It is important because it can spread smoke throughout a building, carry fire from one section to another, and intensify a fire. Smoke can carry through a system even when it is shut down and create intolerable conditions on floors other than where the fire is. The fresh air brought in by the air conditioning tends to fan a fire, and drawing the air into the plenum can spread the fire in the direction of the return air shaft. Because of this, no combustibles should be allowed in the plenum to create additional heat and more problems. This tendency for fire to travel to the return air shaft can be an advantage if the shaft is non-combustible and smoke is discharged to the outside. This will tend to prevent a build-up of pressure in the fire floor from the heated gases and lessen the spread of smoke in the building. If only a portion of a space is involved in fire, sufficient cool air will be carried along with the hot gases to moderate the temperature impact.

The popularity of air conditioning has introduced another hazard — combustible insulation in the walls. Foamed plastics are excellent insulation materials, but they are extremely flammable. Tests have shown that exposed polyurethane foam on a wall burns so rapidly it can outrun the fusing and operating of sprinkler heads. Such insulation should never be exposed in walls, shafts, or concealed spaces but should always be enclosed by a noncombustible thermal barrier.

3. **Design faults.** Building codes in general have requirements that will provide a reasonably fire-safe building. Tests by fire at impartial laboratories are conducted by manufacturers to prove their products meet code requirements. Unfortunately, no provision seems to be made for protection of openings in floors and walls. Consequently, some holes are not filled or others are filled with materials that disappear in the first few seconds of fire. It is ridiculous to spend time and money to prove that a floor or wall can withstand a two-hour fire and then allow holes to be cut in it that destroy the fire resistance.

There is another design fault in the creation of vertical shafts around columns in exterior walls, or in the exterior skin of the building. Such openings have allowed fire to spread from one floor to another where only flammable plastic foam served as a fire barrier to the shaft.

Another problem is the entire design of the modern light-weight building. Although the components have passed fire tests, they provide no reserve for unexpected conditions. For example, a concrete-block wall will be still standing and preventing fire spread long after its two-hour fire exposure. By contrast, many modern assemblies will disappear if fire lasts only a few minutes longer than specified test durations.

Similarly, sprayed fireproofing has successfully passed fire tests, but conditions in the field are not the same as in the laboratory. Even if the sprayed material is properly formulated and applied to the proper thickness, it may not adhere to the surface or it may be knocked off as other building services are installed. The result is that the expected fire protection is not here when it is needed.

In many discussions of protection of high rise office buildings, much has been said of the trade-offs that should be allowed where automatic sprinklers are installed. The facts of life are that the trade-offs have already been taken in the modern design of buildings. The installation of sprinklers is the best way to return building protection to the level of the past.

The only other alternative is to provide a redundancy of protection such as required by New York's Local Law No. 5, minimize the fire hazards within the building, and constantly supervise the maintenance of building protection.

4. **Communication and power wiring** The sheer bulk of the electrical and communications equipment in a major office creates a problem because of the number of wires and cables required to supply them. Where conduit or under-floor raceways are provided, the hazard is almost nonexistent. All that is required is fire-stopping where the cables pass under or through power or telephone closet walls. The worst and most hazardous condition is when wires and cables with combustible insulation are run through plenums to service the floor above. This provides a double hazard by introducing combustibles into the air conditioning system and by requiring openings in the floor that are not equipped with fittings or fire-stopping equivalent to the fire resistance of the floor itself. Telephone cables can carry more than messages — they can carry fire through a wall even when conventional fire stopping is provided. The mass of cables that supplies communications equipment in many offices is sufficient to sustain a substantial fire. While an individual cable is extremely difficult to ignite, a group of cables lying parallel will burn intensely, just as will a group of logs in a fireplace. A fairly recent development is the installation of telephone and communications equipment by other than the local telephone utility. The equipment is often not located in telephone closets, and it and its wiring contains considerable combustible plastics that could be a source of fire.

The contention that telephone and other communications wiring cannot create a hazard because of low voltage and low amperage is simply not borne out by experience in New York City. A substantial number of fires of electrical origin have occurred in telephone equipment in office buildings. In addition, faults of installation such as lack of fire-stopping or installation in improper locations threaten the fire safety of buildings.

5. **Elevator call buttons.** Finger-sensitive elevator call buttons have been responsible for calling elevators to a fire floor. If the car is occupied, its riders are subjected to the fury of the fire when the doors open. These buttons can be operated by heat, smoke, flames, and other conditions present during a fire.

6. **Hazards of construction.** Many fires in New York City have shown that the fire hazard of a building which is still in the process of construction, but partially occupied by permanent tenants, are serious. There is a dual control which makes it difficult to implement safety plans. There are operations and hazards that will not be there when the building is completed. Openings are left in floors for future electrical or air-conditioning equipment. Temporary elevator doors to accommodate large equipment are substandard or left open. Protection is not applied to air-conditioning ducts that pass through corridors. Openings are not fire-stopped in walls and floors. Protective coatings are removed from structural steel; and large accumulations of combustible materials or combustible packaging are usually present. Alarm devices may be only partially operable or not yet accepted by the building owner. Welding, cutting, soldering, and careless smoking can start fires.

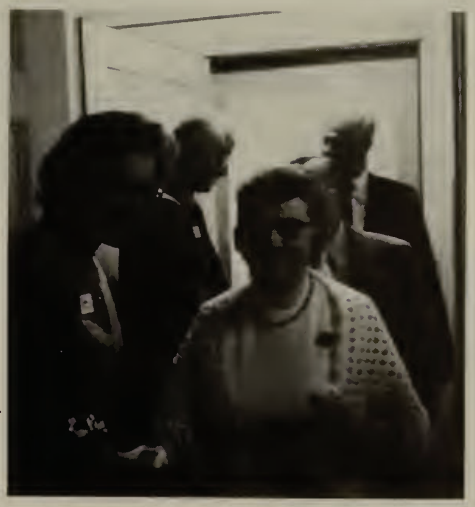
To cope with these hazards, basic fire protection features such as stairs, elevators, alarms, and standpipes must be in service to the level of the highest tenant. Fire partitions around the tenant's space must be complete even if temporary fire-stopping is necessary until work in the area is completed. Tenants should be acquainted with evacuation procedures, location of fire-protection equipment, and most of all with information on hazards and hazardous areas to be avoided. Strict supervision must be provided to prevent operations that might endanger tenants, such as chopping holes in stair towers, welding adjacent to occupied areas, or creating smoke conditions in air-handling equipment. It is not possible to anticipate all of the hazards, but the precautions can be narrowed down to providing the tenants with totally enclosed fire-safe construction with no unprotected openings.

IN CONCLUSION, fire safety at the World Trade Towers, as in all other high-rise buildings, is what the owner and the tenants make it. The owner must provide an inherently safe building, competent personnel to maintain it, and proper supervision of hazards in the building. The tenants have the obligation to be aware of the safety features and evacuation plans and to participate in drills. They, too, have the responsibility for safeguarding hazards in their operations, and in minimizing the effects of a fire in their premises. Only this kind of cooperation can ensure that no conflagrations, such as recently occurred in Brazil, can endanger the people and the businesses in their building.

Reunion 1975

C. Marshall Dann, '35, comparing notes with Stephen J. Hebert, '66, secretary-treasurer of the Association.

President and Mrs. Hazzard welcomed members of three reunion anniversary classes — 1925, 1935, and 1950 — into Jeppson House, the president's residence; for cocktails and conversation.



At the Hazzard's reception for them, '35 class members Homer Morrison and Ray Granger meet old friends.

It was billed as the "Good Old Days Get-Together," and though a bit late in getting started, was a pleasant relaxation for those at Reunion. Music for dancing was provided by a banjo band, and the whole thing took place in "the Wedge," the new addition connecting Daniels and Morgan halls. Pretzels, peanuts, candlelight. Add something to drink, friends to talk and laugh with, spirited music for those who like to dance, and what you had was the Friday night's GODGT.

Members of the Class of 1910, back for their 65th reunion, gather around the sundial in front of Boynton Hall. The solar clock was a gift of the class when they graduated. Although the Reunion attendance cup traditionally is won by the 50th anniversary reunion class — and it was this year — 1910 came within a couple of percentage points of carrying off the trophy.

"Bud" Thayer, '24, tips his hat to one of the ladies at Reunion.

Francis S. Harvey, '37, accepts the gavel symbolizing the presidency of the Alumni Association, from Walter J. Bank, '46, who has led the Association for two years.

Carl Backstrom, '30, being given a surprise Taylor Award at Saturday's luncheon. Carl is chairman of the Citations Committee, but this was one citation he had no hand in writing!

C. Marshall Dann, '35, Goddard Award winner (and U.S. Patent Commissioner), presents President Hazzard with a check for his class's 40th anniversary gift to the Institute—over $57,000!

Herbert F. Taylor Award winners Carl Backstrom, '30; Edwin B. "Ted" Coghlin, '23; and Earl C. Hughes, '14 showing off their award certificates to WPI's president.

Goddard Award winner Sigurd ("Si") Wendin, '25, with Mrs. Robert Goddard and President George W. Hazzard.

That was Reunion '75

Coming up is a super spectacular HOMECOMING

October 18, 1975

Mark your Calendar

The data on which these class notes are based had all been received by the Alumni Association before June 1, when it was compiled for publication. Information received after that date will be used in succeeding issues of the WPI JOURNAL.

1906

The **L. Norman Reeves** recently sold their winter home in Florida and now reside all year at 24 Melrose Ave., Falmouth Heights, Mass.

1908

Class Secretary **Donald D. Simonds** writes that Marion Kendall, the widow of **Clayton Kendall**, passed away on February 25, 1975.

1912

The proposed Rte. 20 bypass paralleling Main Street in Marlboro, Mass., might be named Granger Boulevard in appreciation of a lifelong commitment to the community by **J. Francis Granger.** The proposal was recently made by the Massachusetts commissioner of public works, Paul Sharon, and is subject to the approval of the city council. Mr. Granger was superintendent of streets in Marlboro for 34 years and was clerk of the works for Marlboro Hospital. Currently he is a vice president of the Marlboro Hospital Corp. and a secretary of the Massachusetts Highway Association.

1913

William R. Stults, who now resides with his son in Macon, Ga., recently has taken trips to Ridgecrest, N.C., DeLand, Fla., and Massachusetts.

1918

Benjamin Luther continues to reside in Erie, Pa. and is active on behalf of the college. He has been named to the President's Advisory Council at WPI.

1922

Prof. **Carl F. Meyer** is still leading his second professional life as a cellist in the Florida Symphony Orchestra, which has a yearly budget of $670,000. Although he retired ten years ago from teaching at WPI, he retains his ties to engineering by keeping his 26-year-old textbook, *Route Surveying and Design,* up to date. Alumni will be interested to know that the co-author of the new 5th edition will be Prof. **Robert Schultz, '55,** a full professor of civil engineering at Oregon State University. Recently Prof. Meyer has visited with **Russ Cushing, '22,** and **Bill Raymond,** a former student from the class of 1944. Bill is chief of the traffic section of the consulting firm of Gannett, Fleming, Corddry and Carpenter.

1928

Harold R. Voigt retired from the U.S.A.F. after 21 years of federal civil service. At the time of his retirement he was chief of the Fire Protection Division at Wright-Patterson AFB in Ohio.

1929

Francis Wiesman has been elected to the board of directors of the American Institute of Parliamentarians, St. Louis, Mo. He teaches parliamentary procedure at the School of Industrial Relations run by the archdiocese of Boston.

1930

Stanley H. Fillion is self employed part time. Most of his work is for the Dresser Transportation Equipment Division of Dresser Industries. He also enjoys woodworking, fixing up the house, and browsing in second hand book shops. . . . **James E. McLoughlin,** who was an engineering group leader at the A.W. Haydon Co., Waterbury, Conn., is retired. . . . **Fred P. Peters** continues as adjunct associate professor of management at Seton Hall University and is also an associate in BCM Associates, Inc., New York City.

1931

Everett E. Johnson, formerly of the Navy Department in Washington, D.C., is retired. He was married two years ago to Elizabeth Cameron and currently the couple resides in Bethesda, Md. . . . **William H. Mill,** a field manager with the Factory Insurance Association in Charlotte, N.C., for many years, has retired. . . . In March **Albert I. Palm** was commended by the Chief of Police in San Diego, Calif., for deliberately colliding his car with a driverless runaway vehicle which was rolling down a steep hill. The tribute read: "Your actions in this situation are commendable. You risked yourself and your property to stop a vehicle which, if it had been allowed to run its course, could have resulted in much more damage to property and/or to the death or injury of some innocent person."

1932

Edgar C. Ansaldi has retired. He was chief of the test department of Pratt & Whitney Aircraft, East Hartford, Conn. . . . **John O. Charles** has also retired. He was with the American Steel & Wire Co. in Dallas, Texas. . . . Other retirees include **Theodore S. Chmura,** American Bosch Corp., Springfield, Mass.; **Roland F. Downing,** plant engineer, Pratt & Whitney Aircraft, North Haven, Conn.; and **Earle E. Green,** division underwriting manager for the metropolitan New York area of Liberty Mutual Insurance Company following 42 years of service. Green was also general manager of the 600 employee, Lynbrook, L.I., office as well as assistant secretary of the company. . . . **Carroll C. Misener** recently retired as a mechanical engineer with the U.S. Naval Ordnance Lab. in Silver Spring, Md. . . . **Edwin L. Pollard** works for Ralph L. Woolpert & Co., Dayton, Ohio. . . . On the retired list is **Lawrence J. Sarkozy,** who had been a district sales manager for the Fenn Mfg. Co. in Newington, Conn.

1933

Alexander L. Alves has been elected chairman of the board and chief officer at Engineered Sinterings and Plastics Co., Inc., in Watertown, Conn. He had been president of the company since it was founded in 1954. Under his guidance the firm has grown from eight employees and sales of $109,733 to a current work force of 135 and sales of over $4.5 million annually. His company manufactures gears, cams, clutches and pole pieces for the electrical industry. . . . **Frank Eaton** retired in January after 19 years at Hamilton Standard, Windsor Locks, Conn. He was a senior designer in environmental control systems and was involved in design of equipment for the 747, L-1011 and other aircraft. He also worked on projects for the lunar module. The Eatons, who have four children and two grandchildren, recently returned from a two-month vacation visiting their daughter in Jupiter, Fla. They intend to concentrate on gardening and traveling during the retirement years. . . . **Robert W. Fulton** has completed forty years with the Factory Insurance Association of Hartford, Conn. He was the company's senior engineer in Portland, Me., and is a registered professional engineer in Maine and Massachusetts. . . . **William A. Slagle** is with the Massachusetts Division of Water Pollution Control in Boston.

1934

G. Standish Beebe serves as construction manager at Pfizer, Inc., New York City. . . . **Kenneth E. Bennett** is retired but keeping busy with a small chair reseating business. He writes that his older daughter, Kay, is a teacher and that his younger one, Freda, is a top student at Drew University.

1935

William E. Wyman has retired as a physical science administrator at the Office of the Secretary of Defense at the Pentagon in Washington, D.C. His son, Jon, graduated from WPI in May.

1936

Perry Clark recently celebrated the first anniversary of doing business with his own firm, Perry Clark Realty in St. Croix, V.I. He writes: "Glad to see any Tech men who may get down this way." . . . **Julius E. Guild** retired from American Optical Corp., Keene, N.H., last December. Since the Guilds' only daughter and family are in Washington State, they expect to settle somewhere in the west later this year.

1937

William S. Bushell, who was chief of the schedules branch of the National Airspace System Program office (F.A.A.) in Washington, D.C., has retired. . . . **H.I. "Red" Johnson** retired in February from the Bethlehem Steel Corp. after a 38-year career in the shipbuilding division and fabricated steel division.

1938

Richard I. Gray is a retiree. He was with the Department of the Navy, Bureau of Ships, in Washington, D.C. . . . **F.H. Jenkins** works for Phillips Getschow Co., Chicago, Ill. . . . **Henry M. Ritz,** president of R&R Plumbing Supply Corp. in Worcester, recently announced a $250,000 addition to his existing structure. His son, Jesse Ritz, entered the family business last June after receiving his master's degree from Boston College. He will be the third generation in the company which was started in 1905 by Henry's father. . . . **Dr. John B. Scalzi** works for the National Science Foundation in Washington, D.C. . . . **Stephen P. Stafford** is with Kennecott Copper Corp., Washington, D.C.

Dana D. Stratton retired from the federal government last November after 35 years of service in the field of naval aviation. He started at the naval aircraft factory in Philadelphia in 1939 and devoted his career to engineering specifications for the construction of carrier-based naval aircraft. At the time of his retirement, he was the director of the Engineering Specifications and Standards Department at the Naval Air Engineering Center, which is now being relocated to Lakehurst, N.J.

During his naval career he was a member of the Council for Military Aircraft Standards and the Navy liaison representative on the National Aerospace Standards Committee. Much of the work he did during World War II contributed to the establishment of the Department of Defense Standardization Program. He is a member of the Standards Engineers Society and the Naval Civilian Administrators Association. His name is listed in the Federal Roster of Key Scientists and Engineers.

At a banquet in his honor he was awarded the Meritorious Civilian Service Award and the Navy Outstanding Service Award. The Strattons' son, Wayne, graduated as an electrical engineer from WPI this year.

1939

Thomas F. Beatty, Jr. is now an estimator for GTE Sylvania in Needham Heights, Mass. . . . **James H. Bryson** is associated with the Chandler Glass Co., Inc., West Springfield, Mass. . . . **Allan H. Chase,** who was with Procter & Gamble, Cincinnati, Ohio for 35 years, recently retired. The Chases hope to relocate on Cape Cod. . . . **E.B. Crabtree** is assistant sales manager at Bryant Grinder Corp., Springfield, Vt. . . . **Gleason W. Jewett** works for J.W. Miller Aviation in Marble Falls, Texas. . . . **Edwin L. Kiem** has retired. He was a mathematics teacher at Warrington Middle School, Warrington, Fla. . . . Another retiree is **Edwin M. Moggio,** who had been an aerospace technologist for NASA. . . . **John T. Rushton** is with Harvey Engineering & Mfg. Corp. in Hot Springs, Arkansas.

1940

Married: **Rolfe Johnson** to Miss Margaret Morris in Cheshire, England, on August 31, 1974. The bride is a nurse. Currently Johnson is a resident engineer working on the construction of a plastics plant in Grangemouth, Stirlingshire, in Scotland. The Johnsons tour Britain and the continent as often as possible on their new BMW 750 motorcycle.

Dr. Clayton H. Allen is president of the Clayton H. Allen Corp., Cambridge, Mass. The consulting and development engineering firm is concerned with acoustics and noise control. . . . **S. Carlton Dickerman,** who retired in 1973 from active duty at New York University, has been named a Professor Emeritus of chemistry. He served as the last chairman of the department of chemistry in University College of New York University. (This campus is now the home of Bronx Community College.) The Dickermans are currently located in a lovely home on ten acres in Lyme, Conn. and write that they "don't miss the city one bit."

Clark Goodchild has received his master's degree in engineering management from Northeastern University, after an unfortunate year in 1974. He had jury duty during a murder trial; had his appendix and gall bladder removed; suffered two heart attacks and a bout of phlebitis. He finally was able to return to work in March. . . . **Sumner Meiselman** has joined the Truck-Trailer Manufacturs' Association in Washington, D.C. . . . **Frederick B. Miller** is with Dale Johnson Travel Agency in San Jose, Calif. . . . Presently **Richard E. Ryan** is a certified life underwriter at John Hancock Life Insurance Co., Falls Church, Va. . . . **Sidney E. Scott** works as a sales engineer with Electrolux in Hyannis, Mass., where he is also in real estate. . . . **James I. Thurston** is general manager at Waite's Industrial, Worcester.

1941

K. Blair Benson has been named vice president of engineering for Goldmark Communications Corp., Stamford, Conn. He will head the firm's engineering activities including divisions involving pay and cable TV. He has been with Goldmark since 1972. . . . **Francis J. Boyle** is a senior project engineer at Bendix Aviation in Kansas City, Mo. . . . **Robert E. Dean's** daughter, Julie, is currently with the Peace Corps in the Philippines. . . . **Anton J. West** is a self-employed income tax consultant in Bethel Park, Pa.

1942

Walter K. Deacon holds the post of president at Servonic Instrumentation Division of Gulton Industries, Inc., Costa Mesa, Calif. . . . **Harvey W. Maurice** owns Ramseyer and Miller, Inc., engineering consultants in Butler, Pa. . . . **William H. Moulton** is chief industrial engineer at Anaconda Wire & Cable in Sycamore, Ill. . . . **David Nyquist** serves as superintendent at Lykes-Youngstown Corp., Chicago. . . . **Charles P. Powell** is a design engineer at Rockwell International, Acme Chain Division, Hopedale, Mass. . . . **Frederick W. Schneider** works at Parkersburg (W. Va.) Community College.

1943

George F. Fairhurst holds the position of executive vice president of the Northridge Hospital Development Association in Northridge, Calif. . . . **Carl E. Hartbower** is now with the Federal Highway Department in Washington, D.C. . . . Lt. Col. **Charles A. Jenkins, Jr.,** who has retired from the U.S. Air Force, is now a self-employed periodontist in Tuscon, Arizona. . . . **James L. Loomis, Jr.,** works for Fryer Corp., Oxford, Conn.

1944

Glen R. Betz retired in June. He had been general supervisor of process engineering for Frigidaire in Dayton, Ohio. . . . **T.A. Bombicino** is manager of manufacturing and engineering at Allied Products Corp., New Haven, Conn. . . . **Sherman B. Campbell** currently serves as chief industrial engineer at Champion Products, Perry, N.Y. . . . **Alfred F. Larkin, Jr.,** is president of the International Group at Rexnord, Inc., Milwaukee, Wisconsin. . . . **Arthur P. Pingalore,** director of training at Cincinnati-Milacron, Heald Machine Division, Worcester, has been appointed to a five-year term on the advisory board at Anna Maria College, Paxton, Mass. . . . **George D. Williams** is a project engineer for NEGEA Service in Cambridge, Mass.

1945

William C. Howard, vice president of the Abrasives Marketing Group at Norton Co., Worcester, was recently elected a member of the executive committee of the American Supply and Machinery Manufacturers' Association, Inc. He has been a member of various ASMMA committees in the past. The association has 500 members which are manufacturers of a wide variety of products used in industry. . . . **Roger N. Perry, Jr.,** public relations director at WPI, has been elected to the New England district executive committee of the Council for the Support and Advancement of Education (CASE). CASE is a new organization created by the 1974 merger of the American College Public Relations Association and the American Alumni Council. . . . **James J. Shea** is a project leader at the Nuclear Regulatory Commission in Bethesda, Md.

Roger Roberge's consulting engineering firm, Roberge & McGrath, Inc., of Lexington, Mass., has been named a winner of the 1975 annual award for engineering excellence presented by the Consulting Engineers Council of New England. The award was given to the company for its environmental energy conservation design of the Billerica (Mass.) High School addition. Through unique reuse of energy and its conservation, the new addition will have minimal operating costs and construction costs will be 25 percent less than planned, the firm reports.

Included in the design is a mechanical system which provides separate air supply and air conditioning components for each fifteen feet of exterior wall. Heated or chilled water is circulated to these units as needed. Refrigeration machinery being driven at slow speed and fueled with natural gas and heat recovery devices capture 60 percent of the heat needed to make ice, hot water, and to cool and heat the building. Overall, heat energy use was cut by 40 percent and construction costs were held to $26 per square foot.

Albert P. Talboys holds the post of project manager at the Pan American Health Organization in Port-of-Spain, Trinidad. He retired as chief engineer for International Health in the U.S. Public Health Service last year.

1946

Currently **Richard H. Ackley** is with the electromagnetic systems division of Raytheon in Goleta, Calif. . . . **Robert D. Bartlett** works for Hobart Corp., Kansas City, Kansas. **Robert E. Boddorff** has been named director of the specialty products division of the coatings and specialty products department at Hercules, Incorporated. He began working for the company as a research chemist following graduation. He has served as a technical representative in the firm's Chicago office, senior technical sales representative, and manager of the Houston office in the coatings and specialty products department. He became assistant director of marketing of the department in 1971 and director of sales for specialty products in 1973.

Richard Galuhn works for the Los Angeles County Facilities Department. . . . **Robert S. Gamble** is with New England Petrochemical in New York City. . . . **Theodore E. Gazda** serves as projects manager at Fluor Engineers & Constructors, Inc., in Commerce, Calif. . . . Judge **Ernest S. Hayeck** of Worcester's Central District Court has been named the 1975 recipient of the Beth Israel Brotherhood Good Neighbor Award. . . . **Robert C. Manahan** is now group manager of marketing services at Johns-Manville Corp., Arlington, Va. . . . **I.T. "Tom" McDonald** has been appointed manager of the new Deltona office of the First Federal Savings and Loan Association of Daytona Beach, Fla. He joined the association last year as a loan counselor in the DeLand office. He retired with the rank of colonel from the U.S. Air Force in 1973, completing 31 years of military service. At the time of his retirement, he was chief of the policy and plans division for Air Force Intelligence in Washington.

John C. Meade is a technical representative at Ashland Chemical Co. in Commerce, Calif. . . . **Richard H. Merritt**, a senior product engineer and manager of abrasive machining for Bay State Abrasives in Westboro, Mass., participated as a session leader at the 1975 ASAM International Technical Conference and Exhibition held in Chicago last May. His topic was "A Decade of Abrasive Machining — So What?" . . . Presently **Walter O. Muller** is plant manager at the Chevrolet gear and axle plant in Detroit, Michigan. . . . **Joseph F. Pofit** is assistant chief engineer at Crane Co., Indian Orchard, Mass. . . . **Arthur P. Rosenquest** serves as president of Dust Vent, Inc., Addison, Ill. . . . **Herbert H. Slaughter, Jr.** has retired. He was chief of the engineering and manufacturing division of the Federal Aviation Administration in Washington, D.C. . . . **John L. Wilki, Jr.** is president of CVM Corp., an air pollution control business, at 406 Philadelphia Pike, Wilmington, Deleware. . . . **Robert E. Willis** serves as area manager for General Electric in Omaha, Neb.

1948

Robert W. Henderson, vice president of marketing for Rodney Hunt Company, Orange, Mass., has been elected a director of the firm. He joined the company in 1956 as an application engineer in the water control equipment division. Later he was a manager, vice president, and marketing head. . . . **Frank S. Holby** works in the Apollo System Space Division of General Electric in Huntsville, Alabama. . . . **William T. Nurney** is on a temporary assignment as a group leader for the Mitre Corp. in Houston, Texas.

1949

Paul H. Beaudry is project manager at IBM-Real Estate & Construction Division in Austin, Texas. . . . **Russell F. Bradlaw**, a project engineer for the Turner Construction Co., was in Saigon in April. He reports that he saw no panic, no looting, and no anti-foreigner attitude. Currently he is engaged in building a $40 million apartment complex in Hong Kong. Called Mei Foo Sun Chuen, the complex is probably the world's largest privately financed housing project. It will comprise some 100 twenty-story blocks housing up to 90,000 people in 13,000 apartments. Previously he had helped to build a $10 million water treatment plant for Turner Construction in Saigon.

In March **Philip G. Buffinton** was appointed vice president and secretary and chief administrative officer of the State Farm Fire and Casualty Company in Bloomington, Ill. . . . **Samuel E. Franc, Jr.** writes that he is now a real estate salesman for Country Homes Real Estate in Danville, Calif. Marcia is in the eighth grade and Susan, the sixth. Betty works for Social Security. . . . **Donald Taylor** holds the post of president of the Nordberg Machinery Group at Rexnord, Inc., in Milwaukee, Wisconsin.

James B. Morin, who had been a captain in the U.S. Navy, was promoted to Rear Admiral in ceremonies held at the Naval Base in Norfolk, Va. last May. He is the deputy director of the National Military Command Center, Joint Chiefs of Staff, Washington, D.C. He won his wings in 1948. As commanding officer of Attack Squadron 155 on the carrier USS Coral Sea in 1965, he flew 157 combat missions over North Viet Nam. He was awarded a Distinguished Flying Cross during one of those missions when he attempted a rescue. He has commanded the amphibious transport USS LaSalle and the carrier, USS Franklin D. Roosevelt. His decorations include two DFC's, the Bronze Star Medal, two Meritorious Service Medals, eighteen Air Medals, and three navy Commendation Medals.

1950

Robert O. Budd is manager of plant safety at Westinghouse-Hanford Co., in Richland, Washington. He is married, has three children, and is a member of the city of Richland Ecology Commission. . . . **Robert L. Moison** operates Robert L. Moison & Associates, Inc., Apple Valley, Minn. . . . **Jeremiah P. O'Neil** has been appointed manager of energy utilization by Nabisco, Inc., New York City. . . . **Richard C. Pieper** is senior vice president and general manager at Bently Nevada Corp., Minden, Nevada. . . . **Eli S. Sanderson** has been appointed manager of planning and control for engineering and construction services at Norton Co., Worcester. He has been with Norton since 1950 and has served as supervisor of industrial engineering and most recently as manager of facilities and services. He is a registered professional engineer.

1951

Phillip G. Blair is plant engineer at Paper Products, Inc., Long Beach, Calif. . . . **Dexter Cate** has been promoted from project engineer, custom systems, to manager of quality control at Fairbanks Weighing Division, Colt Industries, St. Johnsbury, Vt. In his new assignment he is responsible for all the inspection and test done in the division. . . . **Walter J. Kolodne** has joined Titan Atlantic Construction Corp. in Towson, Md.

1952

Currently **Harold R. Althen** is vice president of sales at the Mikropul Division of United States Filter Corp. in Summit, N.J. . . . Mr. and Mrs. **Bruce Campbell** and **Ojars Silarais, '65,** recently co-hosted a farewell party honoring the **Wayne L. Pierces, '68,** who are moving from Louisiana to New Jersey. All three alumni lived in a 500-ft. circle in the same apartment building overlooking the same swimming pool until Pierce was transferred. The trio met again at Pier 4 in Boston on May 31st.

Lex Carroll, president of Carroll Chevrolet, Inc., West Brookfield, Mass., was recently reappointed manager of the National and World Competitive Water Ski Team for 1975 by the American Water Ski Association. The team will compete in the World Championships in London, England, in September. Carroll was originally appointed to the post in 1973 when the World Championships were held in Bogota, Columbia. He has been water skiing for 30 years, becoming well known as an all around show skier, barefooter, and kite flyer. He is the founder of the Lake Wickaboag Ski Club in West Brookfield and cofounder of the Central New England Water Ski Association. He and his wife became noted in North and Latin America in the 1950s for their competitive skiing and were the East's top representatives in regional and mixed doubles competition. They achieved an overall record that may never be surpassed.

1953

Richard A. Davis, president of the Thermos Division of King-Seeley Thermos Co., Norwich, Conn., has been named to the Norwich Advisory Board of Hartford National Bank & Trust Co. . . . **Dr. Robert Fitzgerald,** associate professor of civil engineering at WPI, was the keynote speaker at the Connecticut State Fire Officers' Conference held in May in Meriden, Conn. . . . **George A. Garrison,** SIM, is now vice president of manufacturing at Anderson Corp., Worcester. . . . **Thomas R. LaCrosse** serves as manager of computer programming in the oceanic division at Westinghouse Electric Corp., Annapolis, Md. . . . **John E. Leach,** who continues with E.I. duPont de Nemours, is currently plant manager in San Francisco, Calif. .. . **Dale E. Westbrook** is chief, quality control group, for Marine Data Systems Program, National Ocean Survey, Rockville, Md.

1954

Leslie W. Johnston, Jr. works for Singer Co., Binghamton, N.Y. . . . **Vahram Keshishian** works for TRW Systems in Redondo Beach, Calif. . . . **Donald E. Ross** has been named general manager of MPB Corporation's Split Ballbearing Division in Lebanon, N.H. The firm manufactures high precision ball and roller bearings for aircraft, materials-handling equipment, hydraulic pumps, medical equipment, and machine tools. Ross is a director of the National Bank of Lebanon and a member of the corporation of Mary Hitchcock Memorial Hospital. He joined Split Ballbearing in 1962 and had been operations manager since 1971. . . . **B. Lawrence Sova** is with the U.S. Power & Environmental Branch in Aberdeen, Md.

1955

Dr. Howard J. Dworkin is presently chief of the department of nuclear medicine at William Beaumont Hospital in Royal Oak, Mich. . . . **R. Bruce Brodie** is a patent attorney at IBM Patent Operations in San Jose, Calif. . . . **Norman M. Lawrence** serves as a planning and scheduling engineer for Allied Chemical Corp., Morristown, N.J. . . **Donald M. McNamara** has been appointed product manager of plasticizers at USS Chemicals, a division of U.S. Steel Corporation in Pittsburgh, Pa. He will be in charge of the marketing and distribution of plasticizers and their derivatives internationally. He began his career with the corporation as a New York sales representative in 1963. In 1965 he became product manager for dibasic acids in Pittsburgh and regional sales manager for the Midwest four years later. He is a member of the Society of Plastics Engineers.

Patrick J. Murphy is at the Naval Surface Weapons Center, Dahlgren, Va. . . . **Walter B. Power III** has been appointed by the mayor to the planning board in Salem, Mass. Currently he is serving as chairman of the School Building Commission. He is a registered professional engineer and a senior sales engineer for McGraw Edison, Power Systems Division. . . . **Howard D. Youmans,** SIM, now serves as a sales manager at Morgan Construction, Worcester.

1957

Salvatore H. Bello works for U.S. Steel Corp., Worcester. . . . **Robert F. Galligan** was recently elected vice president of operations and secretary at Gibbs/Cook Equipment in Des Moines, Iowa. He joined the company in 1964. . . . **Walter C. Kress** is manager of facilities planning at American Cyanamid Co., Pace, Fla. . . . **David N. Olson** operates D.J.B. Mobile Homes in Shingle Springs, Calif. . . . **James F. Richards,** general sales manager for the R.H. Miller Division of Pennwalt Corp. in Homer, N.Y., wrote an article, "Alkaline Preclean to Cut Costs," which appeared in the February issue of *Wire Journal*. . . . **John O. Stinson,** former hospital administrator for the Berkshire Medical Center in Pittsfield, Mass., has been selected town manager in Hanover, N.H., from over 100 applicants. Previously he was city manager of Ipswich and Saugus, Mass. He has an MBA from the University of Massachusetts.

Not long ago, **Donald Striby** was helping to send men into space at Cape Canaveral as a NASA launch-test conductor. Today he and his family are literally living off the land on their 13-acre farm in Rehoboth, Mass. The Stribys raise 85 percent of what they eat, including beef, poultry, eggs, and vegetables. They also cut their heating and light bills by using wood stoves, kerosene lamps, and candles. Just to keep busy, Striby does all his own plumbing, electrical work, carpentry, and auto repairs. On the side he helps his wife raise English sheep dogs, and he has built her a ceramics workshop. Their sons bake and help with the chores. In spite of what seems like a 'round-the-clock schedule, the Stribys claim their new life is "a lot more relaxing!" . . . **Ronald Wilson** is a senior research assistant at the Worcester Foundation for Experimental Biology in Shrewsbury, Mass.

1958

Foster Wheeler Energy Corporation has currently assigned **Everett W. Angell** to the company office in Rio de Janeiro, Brazil. . . . **Robert J. Donegan** works for ESL, Inc., Sunnyvale, Calif. . . . **Roy E. Handy, Jr.,** SIM, has been appointed vice president of manufacturing at Wain-Roy, Inc., Hubbardston, Mass. He is a chairman of the board of directors of Asnacomet Federal Credit Union, a director of the Hubbardston Industrial Development Corp., and has served many years on the Hubbardston planning board and industrial commission. . . . **Stanley L. Green** is now with the Drug Enforcement Administration of the U.S. Department of Justice in Washington, D.C. . . . **Alan A. Miller** holds the post of planning engineer at Western Electric Co. in Winston-Salem, N.C. He also owns Puppy Country Kennels and breeds and sells purebred puppies. . . . **Ralph Paganetti** is with American Science & Engineering, Inc., Cambridge, Mass.

The recent paintings of **Bill Rabinovitch** were exhibited at the Rabinovitch & Guerra Gallery in New York City in April and May. The title painting of the show, "New York Now," expresses the artist's vision of New York in February, a city caught up by its energy and mobility. According to the *Soho Weekly News,* the Rabinovitch & Guerra Gallery, in which Bill is a partner, "is a meeting place for artists whose thrust is aimed at expressing a visceral expression of what is closest to a given artist's most immediate concern: his inner life and visualization thereof."

Donald H. Tompkins is a physicist with the U.S. Geological Survey, Menlo Park, Calif.

1959

Robert G. Chadwick was recently promoted to manager of the Torrington Co. bearings plant in Sylvania, Ga. He had been manufacturing manager at Sylvania since 1973. Previously he was superintendent of drawn cup and thrust bearings at the Torrington, Co. in Connecticut. He began his career with the company as a project engineer. . . . **Joseph D. Daddario, Jr.**, works for Sylvania in Waltham, Mass. . . . **A. David Dickert** is now assistant to the vice president of corporate ventures at Rohm and Haas Co., Philadelphia, Pa. . . . **P.D. Edwards** is a project manager at Chemplex, Rolling Meadows, Ill. . . . **James M. Lawson**, SIM, holds the position of vice president of O.S. Walker Co., Inc., Worcester. . . . **Robert H. Lynn** left the Raytheon Company last October and joined the engineering firm of Chas. T. Main, Inc., in Boston. He serves as client relations manager for the industrial division, with offices in the Prudential Center. The Lynns, who reside in Framingham, have three children: Heidi, 8; Eric, 6; and Craig who is 4. . . . **Robert V. Sharkey** is now the owner of Shark's Marine in Keene, N.H. He sells Mercury outboards, Mercruisers, and snowmobiles. He is also a dealer for Glastron ski and sportsboats; Starcraft fishing boats, and runabouts; canoes; sailboats; and marine hardware. "Since moving to New Hampshire," Bob reports, "I've had a chance to do some fishing which I hadn't had time to do in nearly 20 years."

1960

Joshua C. Alpern is with the U.S. Army Scientific Liaison & Advisory Group in Washington, D.C. . . . **William K. Bonta** is deputy director of air quality control for the Maryland State Department of Health in Baltimore. . . . **Donaldson A. Dow** works as a senior structural engineer at Perry Ocean Engineering, Inc., Riviera Beach, Fla. . . . **Russell A. Fransen** is with Luchs & Beckerman in Glastonbury, Conn. . . . Currently **Richard L. Gess** works at Ketron, Inc., Warminster, Pa. . . . **Stephen J. Hewick** is a bridge engineer at Lewis Berger Co., East Orange, N.J. . . . **Paul W. Kendra, Jr.**, serves as a senior systems analyst at General Electric Co., Arlington, Va. . . . **Stuart P. Roberts** writes that his wife passed away on March 2 following a brief illness. . . . Dr. **Charles A. Stevens** is associate dean at Southern Technical Institute in Marietta, Ga. . . . **Derin K. Turkomer** serves as assistant general manager for Turyag AS in Izmir, Turkey. . . . **Stanley C. Wells, Jr.**, is now assistant to the director of research and development for N.D.M. Corp., Dayton, Ohio. He directs engineering for the extrusion and injection molding of medical products as well as materials engineering

1961

Married: **Robert A. Weiss** to Miss Bonnie Joan Geller of Milton, Massachusetts last August. Mrs. Weiss is a teacher at Needham High School. Her husband was recently named production and inventory control manager for Grinnell Fire Protection Systems Co. of Rhode Island and is located in Providence.

Born: to Mr. and Mrs. **Gerald E. Kuklewicz**, a second son, Andrew Train, on February 5, 1975. Gerry is a sales engineer for General Electric Co. and sells central air conditioning and heating.

Brad Cushing left the G.E. Knolls Atomic Power Laboratory in Schenectady, N.Y. last August and now works as a project engineer for Enviroengineering, Inc., a division of H.V. Weeks, Inc., located in Somerville, N.J. The consulting firm specializes in all phases of pollution control. Brad and his wife, Mary, have an 18-month old son, Terence. . . . **Roger E. Faulk** works for Travelers Insurance Co., Product Management Division, Hartford, Conn. . . . **William H. Gill** is currently director of environmental services at Development and Resources Corporation, Sacramento, Calif. . . . **Robert R. Hale** works for the Optical Radiation Corp. in Azusa, Calif. . . . **Arthur Kroll** has joined Fairbanks Weighing Division of Colt Industries in St. Johnsbury, Vt. as manager of product development. Formerly he was engineering manager for commercial products at EDMAC Associates in Fairport, N.Y. . . . **Thomas P. Lopresti** is now a health industry analyst for IBM, health industry development, Des Plaines, Ill. . . . **Richard H. Nelson** holds the post of principal engineer at Harris Corp., Electric Systems Division, Melbourne, Fla.

Normand L. Noel is district manager of sales engineering at Gilbane Building Co., Lanham, Md. . . . **John F. Ogorzalek** has completed work for his Juris Doctor degree at Western State University and will take the bar exam this summer. He is works manager at Tenneco Chemicals, Inc. in Long Beach, Calif. . . . **Thomas J. Pearsall** works at Quantum, Inc., Wallingford, Conn. . . . **Pierce "Ned" Rowe** serves as division manager at Burke Concrete Accessories, Inc., South San Francisco, Calif. . . . **Edward A. Sundburg** has been appointed product engineering manager of armor and Spectramic products in the Industrial Ceramics Division at Norton, Co., Worcester. He joined Norton in 1964. . . . **Kenneth J. Virkus** is a senior research chemist at General Cable Corporation in Union, N.J.

1962

Dr. **Charles F. Belanger, Jr.**, is now at the University of Massachusetts Medical School in Worcester. . . . **Bradford J. Booker** serves as a senior analysis engineer with United Aircraft's Power Utility Division in South Windsor, Conn. . . . **Currently** Robert C. **Clark** is with Monsanto Chemical Co. in Indian Orchard, Mass. . . .**Giacomo Corvini** has joined the sales office of the molecular sieve department at Union Carbide Corp., in Tulsa, Oklahoma. . . . **Sharad S. Gandbhir** has been named a senior process engineer at Stone & Webster Engineering Corp. in Boston. In 1967 he started work at the company as an engineer. . . . **Robert H. Hall** is now the manager of the new product development and technical services department at New England High Carbon Wire Corp., Millbury, Mass. He joined the company in 1962 and served as research metallurgist before being promoted to chief metallurgist in 1968.

George W. Holman is with Holman Engineering, Inc., Indian Orchard, Mass. . . . Presently **David N. Lyons** holds the post of chief of the compliance branch of Water Enforcement at EPA in Washington, D.C. . . . **Michael E. Rafferty** was recently named manager of the Boston operation and vice president of BSC Engineering, Inc., Boston survey consultants. . . . **John C. Rupprecht** works for R.B. Richardson Co., Royal Oaks, Mich. . . . **Jerome R. Temchin** is chief, statistical analysis support, at the Federal Energy Administration in Washington, D.C. . . . Currently **Walker T. Thompson** serves as associate manager of inventory planning and control at Union Carbide Corp. in Charleston, W. Va. . . . **John M. Wallace** is with Wallace & Wallace, Springfield, Mass. . . . **Raymond B. Wilson, Jr.** works for QEI, Inc., Computer & Information Systems, Bedford, Mass.

1963

Robert J. Craig has been employed by Hydrospace-Challenger, Inc., in Rockville, Md. . . . **Stephen D. Donahue, Jr.**, who is with Procter & Gamble, is now located in Madrid, Spain. . . . **Thomas M. Donegan** was recently made director of international development for Hughes AirWest in San Mateo, Calif. Currently he is directing aviation assistance programs in Nepal, Burma, Liberia, and Mauritania. His most recent contract, concluded in January, was with Saudi Arabia for the establishment of an "instant" domestic airline. . . . **Robert J. Hermes**, SIM, works as a sales manager at Birdsboro Corp., Birdsboro, Pa. . . . Dr. **Allen H. Hoffman** has been promoted to associate professor in the mechanical engineering department at WPI. He joined the teaching staff in 1964, did postgraduate study at Case Institute of Technology, and received his PhD from the University of Colorado. He has had industrial experience with Shell Oil Co. Riley Stoker Corp., and General Electric Co.

Dr. **Peter F. Lilienthal II** is a research leader at Western Electric Co., Princeton, N.J. . . . **James J. Magaldi** serves as a plant engineer at ITEK-Uniuis Optical, Guayama, Puerto Rico. . . . **Henry Schroeder** is a senior systems programmer at Foxboro (Mass.) Co. . . . Currently Major **James A. Velezis** is deputy chief of staff for the U.S. Department of the Army at the Pentagon in Washington, D.C. . . . **Harold H. Wright** holds the post of district sales engineer at Wer Industrial in North Reading, Mass.

1964

Donald A. Ghiz is operations superintendent at Continental Oil Co., Westlake, La. . . . **Gerald A. Gutman** is now vice president of marketing for Communication Associates of Huntington Station, N.Y. The company manufactures HF/SSB radio systems. . . . **Terrance B. Harris** has been transferred to Union Carbide's Tarrytown, N.Y. site where he is now assistant export marketing manager for the molecular sieve department. To date his travels have taken him to Brazil, South Africa, and Mexico, with tentative trips to Europe and Japan in the offing. . . . **Philip Johnson** works at Gould, Inc., Plantsville, Conn. . . . **Earle Megathlin, Jr.** works for Robert E. Owen & Associates, West Palm Beach, Fla. . . . **Bruce A. Ochieano** holds the post of treasurer at Advanced Micro Devices, Sunnyvale, Calif. . . . **Leo Pluswick** is currently an electronic engineer at Ft. Meade, Md.

Robert W. Wehrli, MNS, teaches at Gallaudet College in Washington, D.C. . . . Currently **William R. Phillips** is superintendent of finishing, Organic Products, at Norton Co., Worcester. . . . **William S. Shurbet** now serves as administrative manager in the Bureau of the Budget in New York City. . . . **William S. Swiger** works at Project Software & Development, Inc., in Cambridge, Mass. . . . **Louis A. Wargo** is with State National Bank in Bridgeport, Conn. . . . **Seymour Williams III** serves as a program manager at Computer Sciences Corp., Falls Church, Va.

1965

Born: to Mr. and Mrs. **Robert H. Cahill**, a daughter, Emma, on April 23, 1975. Cahill is with Hilti Fastening Systems, Stamford, Conn. . . . to Mr. and Mrs. **Robert Juckins**, their first child, a son, Christopher Anthony, on March 16, 1974. Bob is with the R & D Department at Wyman-Gordon in Millbury, Mass.

David S. Clayton has been named assistant to the chairman of Piper, Jaffray & Hopwood, Inc., a Minneapolis-based securities firm. He joined the firm's corporate finance department in 1972 and was elected a vice president in 1973. Previously he was with the First California Company and the Worcester County National Bank where he was a computer programmer and systems analyst. From 1966 to 1970 he was an instructor in math and reactor physics and a department head at the U.S. Naval Power School in Vallejo, Calif.

Charles J. DeSimone has been named senior corporate finance officer at the Society For Savings in Hartford, Conn. Previously he had been with the Hartford National Bank & Trust Co. where he was a corporate banking officer. Prior to entering the banking field he was with General Dynamics Corp. and Hamilton Standard, Windsor Locks, Conn.

Francis X. Dolan, Jr. is now a research engineer at Creare, Inc., Hanover, N.H. . . . **William J. Dolbow** works for Nashua (N.H.) Corp. . . . **James E. Frappier** is with Stauffer Chemical Engineering and Construction in Bucks, Ala. . . . **George L. Humphrey** is a computer specialist at Systems Development Corp., Falls Church, Va. . . . **Thomas R. Lee** works for the Bureau of Radiological Health, Rockville, Md. . . . **James S. Main** is at the National Library of Medicine in Bethesda, Md. . . . **Arthur A. Padovano** serves as district manager of the Dayton (Ohio) office of the Torrington Co.

1966

Born: to Mr. and Mrs. **Grant P. Maier**, a daughter, Jennifer Riley, on April 6, 1975. Grant is with Pratt & Whitney Aircraft, East Hartford, Conn.

Dr. Ahmet K. Atakan is an assistant professor at Bogazici University in Istanbul, Turkey. He received his PhD in physics from the University of Tennessee. . . . **Christopher G. Foster**, who married Miss Roberta Jill Hooper of Stoke Lacy, Herefordshire, England, last year, is still with the Naval Underwater Systems Center in New London, Conn. His wife is a graduate of Nottingham University. Currently she's doing graduate work at Eastern Connecticut State College. . . . **Thomas J. Curry** is with Naval Underwater Systems, Newport, R. I. . . . Captain **Eugene R. Dionne**, a launch vehicle systems officer assigned to Los Angeles Air Force Station, Calif., participated last winter in the Air Force world-wide ski meet held at Snow Basin, near Hill AFB, Utah.

Bernie Duesel writes that he recently joined Wickhen Products, Incorporated as the production manager of the Huguenot, N.Y. plant. The company manufactures chemical specialties for the cosmetics, pharmaceutical and allied industries. The family resides in Goshen, N.Y., where Bernie, his wife, Lynn Ann, and two children have spent the past three years enjoying the switch from urban to country living. . . . **Gordon E. Eaton**, MNS, has been installed as the new president of the Ludlow (Mass.) Education Association. He has been a member of the Ludlow High School science department since 1970. . . . **Kendall W. Gordon, Jr.**, holds the post of design engineer at Federal Products Corp., Providence, R.I. . . . **John J. Lenart** is with the U.S. Geological Survey in Reston, Va.

Currently **Richard Leon** serves as a technical sales representative for Eastman Kodak Co. and is located in Tuscon, Ariz. He is responsible for technical assistance to radiologists and sales promotion of X-ray film, chemicals and film processors. . . . **Donald R. Nitche** works for the Hartford Insurance Group, Hartford, Conn. . . . **George B. Ordway** serves as facility manager of applications engineering at the C.G. Bostwick Co., Hartford, Conn. . . . **Gerald J. Parker** works for the Federal Energy Administration, Washington, D.C. . . . **Joseph J. Pastic** was recently awarded his professional civil engineering license at ceremonies at Guam, Mariana Island. Presently he is prinicipal engineer of the Department of Public Works planning division in Guam. He is completing requirements for his MBA degree at the University of Guam.

Raymond V. Pierce is a TVA field engineer on a nuclear plant site in eastern Tennessee. . . . **Michael F. Salvini** works as a wire mill superintendent for Bedford Wire in Bedford Heights, Ohio. . . . **Ashok D. Shah** owns Quest, Sherman Oaks, Calif. . . . **Earle L. Sims, Jr.** is a sales engineer at Farrel Co., Ansonia, Conn. . . . Dr. **Henry R. Skutt** is an electrical engineering professor at Virginia Polytechnic Institute, Blacksburg, Va. . . . **Richard H. Somers II** holds the post of director at Different Drummer Building Associates in Howard County, Md. and Montgomery County, Va. The firm is an open-ended but limited partnership of architects, builders, craftsmen, engineers, and designers dedicated to quality construction. . . . **Earl C. Sparks III** is a project engineer at Sobin Chemical Corp. in Ashtabula, Ohio. He recently received his MBA from the State University of New York in Buffalo. Earlier he was with Hooker Chemical Corp., Niagara Falls, N.Y., for four years. . . . Presently **Roman Sywak** serves as an administrative assistant at Pratt & Whitney Aircraft in East Hartford, Conn. . . .**Robert W. Thompson** works for the Chesapeake Division of N.A.F.A.C., Washington Navy Yard, Washington, D.C. . . . **Robert J. Zavatkay** has joined Associated Spring Corp., Bristol, Conn.

1967

Married: **Paul E. Kazemersky** to Miss Marianne Seabury on May 17, 1975 in Ansonia, Connecticut. The bride, a graduate of Bridgeport Hospital School of Nursing, is employed by Griffin Hospital. She belongs to the American Association of Critical Care Nurses. Her husband has been with the Navy in Groton.

Born: to Mr. and Mrs. **Edward W. Piltzecker, Jr.**, a daughter, Kristin Sarah, on May 21, 1974. Ed is now employed by the Foxboro (Mass.) Co. as a system engineer.

Richard A. Alliegro, SIM, director of research and new business development of the Industrial Ceramics Division at Norton Co., Worcester, has been named to the board of directors of Laser, Inc., Sturbridge, Mass. The company develops and manufactures industrial laser machines for welding and drilling applications. Alliegro has eight patents and is credited with the development of lightweight ceramic armor presently in use on advanced helicopters and attack aircraft. A registered professional engineer, he is a fellow of the American Ceramic Society, president of the National Institute of Ceramic Engineers, and serves on the ceramic committee of the Society of Automotive Engineers.

Frank M. Amazeen works as a design engineer for AMF Precision. . . .**Dwight M. Baker**, who operates Affiliates in Civil Engineering, Marshfield, Vt., was elected selectman for Marshfield last March. He also is president of the town's volunteer fire company, a licensed surveyor, and a registered professional engineer in Vermont. Formerly

he was president of the Capital City Jaycees, president and treasurer of the Vermont section of ASCE, and chairman of the Marshfield planning commission. . . **Gene Baldrate,** a senior engineer with the Southern New England Telephone Co., New Haven, Conn., was recently elected to the Board of Directors of the Federal Telephone Employees Credit Union. . . . **Russell P. Bone** works for Stone & Webster Engineering in Boston. . . . **Patrick Butler** is a test engineer at the U.S. Air Force Rocket Propulsion Lab., Edwards AFB, Calif. . . . Presently **Robert J. Dashner** serves as manager of data processing at the Millipore Corporation in Bedford, Mass. . . . Dr. **Richard A. Fine** is an advisory engineer at IBM in Rochester, Minn. . . . **Robert E. Gohsler,** a systems engineer with IBM, is located in San Diego, Calif. . . .

Lawrence R. Gooch holds the post of project engineer at Farrel Co. in Ansonia, Conn. Currently he is project manager and resident engineer on an equipment installation and building modification for the 3M Company in Bristol, Pa. . . . **Joseph Goulart** recently joined the National Highway Traffic Safety Administration in Washington, D.C. He is a safety research engineer . . . . **Joseph A. Lagana** is part owner of Liberty Store in Meriden, Conn. . . . **Burton F. O'Rourke,** SIM, has been appointed chief engineer of project engineering and kiln design for engineering construction and services at Norton Co., Worcester. He began working at the company in 1937. . . . **Charles Pollock** is with public relations at the National Machine Tool Builders Assoc., McLean, Va. . . . Capt. **Bruce F. Rogers** serves as a test designer for the U.S. Army Operational Test & Evanuation Agency in Ft. Belvoir, Va. Recently he completed graduate degrees, MBA and MSOR, at Tulane University where he was sponsored by the army's advanced degree program. . . . **Kenneth G. Schurzky** has been promoted to project scientist in the research and development department at Union Carbide in Piscataway, N.J. He joined the department in 1967. . . . **Raymond P. Seguin** holds the post of manager of quality control at Carrier Air Conditioning in Collierville, Tenn. . . . **Robert C. Young** is market manager at EG & G, Inc. Environmental Equipment Division, Waltham, Mass.

1968

Married: **Mark A. Freyermuth** and Miss Mary Zailskas on April 19, 1975 in Waterbury, Connecticut. Mrs. Freyermuth graduated from the Waterbury Hospital School of Nursing. She received her BS in nursing from the University of Bridgeport and is studying for her master's at Southern Connecticut State College in New Haven. She is a public health nurse for the city of Waterbury. . . . **Carl P. Steele** to Miss Helena P. Cuddy in West Roxbury, Massachusetts on February 22, 1975. The bride graduated from Boston State College, where she also earned a master's degree.

Francis L. Addessio recently received a PhD from Purdue University and is now doing postdoctoral work there on gas discharges with applications to molecular lasers. . . . Dr. **R. Omur Akyuz,** who received his PhD in physics from Brown University, is currently an assistant professor at Bogazici University in Istanbul, Turkey. . . . **Stephen O. Allaire** has passed the Connecticut Bar Association examination. He has been appointed to a one-year clerkship for Chief Justice Charles House of the Connecticut Supreme Court. He attended Georgetown University Law School. . . . **Robert G. Balmer** is an environmental engineer at Exxon Research & Engineering, Florham Park, N.J. . . . **John C. DeMeo** is on the staff of Coginchaug High School, Durham, Conn. . . . **Jeffrey A. Decker** was recently promoted to manager in the Northern New Jersey real estate office of the Prudential Insurance Co. in Newark. He joined the company's New York City real estate investment office in 1973 and has just been transferred to Newark. Currently he is a member of the Young Men's Mortgage Committee, New York.

Carl R. Dupre works for Monsanto Co., Indian Orchard, Mass. . . . Prof. **Robert B. Gillies,** MNS, who has been teaching at Quinsigamond Community College, Worcester, for nine years, has been selected to appear in the 1975 edition of *Outstanding Educators of America.* The national honor is in recognition of his academic accomplishments and contributions. . . . **William J. Giokas** and **Andrew J. Giokas '70,** are partners in the firm, William J. Giokas, Chicopee, Mass. . . . **David J. Gumbley** works for Getty Pipe Co., Hazelton, Pa. . . . **Steven G. Halstedt** was recently elected a director of Cominvest of Hartford, Inc., a minority enterprise small business investment company organized by Society for Savings. He is an analyst in the securities department of the Travelers 'Insurance Co., Hartford. . . . **Jeffrey J. Hultman** received his JD in Law from Southwestern University, Los Angeles, in May and has been studying for his bar exam.

Charles D. Konopka serves as a special assistant to the commissioner of education in the Connecticut State Department of Education. This summer he receives a certificate of advanced graduate study in education administration from the University of Connecticut, where he is also enrolled in a PhD program. He was coauthor of an article, "Curriculum Design Through Operations Research" which will appear in the *Journal* of the American Educational Research Association. His current job deals with the development of a computerized management information system for the Connecticut State Department of Education.

Allen A. Kutz is with Winthrop Laboratories, a division of Sterling Drug, Inc., New York City. **Arnold S. Novick** works for Jono Textile Co., Hartford, Conn. . . . **Scott W. Ramsay** serves as a management analyst for the state of Maine in Augusta. . . . **David R. Speirs** is with Speirs Plumbing Old Lyme, Conn. . . . **James M. Wendell** has joined Dell Manufacturing Co., Inc., Farmington, Conn. . . . **Gregory F. Wirzbicki** works for Union Oil Co. of California at the Union Oil Center in Los Angeles.

1969

Born: to Mr. and Mrs. **Gordon J. Mears,** their first child, Donald Gordon, on August 6, 1974. Gordon is now a buyer for GE in Wilmington, Mass. . . . to Mr. and Mrs. **Edward A. Mierzejewski** their first son, Mark Edward, on January 16, 1975. They also have an older daughter. Ed has joined the Southeastern Virginia Planning District Commission in Norfolk as head of the transportation planning section . . . . to Mr. and Mrs. **Stephen E. Platz,** a son on April 19, 1975. Platz is a scientific programmer at Pratt & Whitney Aircraft in East Hartford, Conn. . . . to Mr. and Mrs. **Stephen O. Rogers,** a son, Timothy Drew, on June 26, 1974. Steve is plant supervisor for E.I. duPont de Nemours in Healing Springs, N.C. . . . to Mr. and Mrs. **Barry Shiffrin,** a daughter, Andrea Beth, on April 17, 1975.

Arnold Barr is an environmental scientist at the Radiation Management Corp., Philadelphia. . . . **Raj K. Chauhan** is with Parle Products Private LTD., Bombay, India. . . **Roger E. Dennison** works as an energy conservation engineer at R.G. Vanderweil Engineers in Boston. . . . **Andrew G. DiLeo** is a bridge maintenance engineer in the Arizona Department of Transportation, Phoenix, Ariz. . . . **Warren F. Follett** left Hughes Aircraft in Culver City, Calif. in January and is now with Emerson Electric Co. in St. Louis, Mo. He is an engineering specialist in the electronics space division. He, his wife, and daughter reside in nearby Hazelwood. . . . **Leslie T. Hatch** is a project manager at Buchart-Horn, Inc., York, Pa. He is a professional engineer.

Andrew J. Heman is a chemical engineer on the production staff at Tampa (Fla.) Electric Co. . . . **Gregory T. Hopkins** serves as a senior systems analyst at Republic National Bank of Dallas, Texas. He is also with Regent Engineering of Wilmington, Del. . . . **Charles A. Kalauskas** holds the position of senior transportation planner with the Central Transportation Planning Staff in Boston. Last year he graduated from the Graduate School of Design at Harvard with a master's degree in city planning. . . . Capt. **Anthony F. Leketa** is serving with the U.S. Army Engineers in Seoul, Korea. . . . **David Lieberman** is a senior systems analyst at Bausch & Lomb, Inc., Rochester, N.Y. . . . **Bidyut K. Rath** is a structural engineer for Brown & Root, Inc., in Houston, Texas. . . . Currently **Robert J. Rose** works as a production supervisor for DuPont at the Sabine river works in Orange, Texas, where he is supervising the construction and start-up of a new plastic product unit. . . . **Donald L. Sharp** serves as a senior engineer at Simmonds Precision in Vergennes, Vt. . . . Last May **John A. Taylor** received his MBA from the University of Rochester in New York. . . . **Charles E. Trent** has been transferred to Reading, Pa., with Crompton and Knowles Corp., where he is an analytical chemist.

South Pacific

Students who want the best secondary education provided in the tiny South Pacific island kingdom of Tonga can be found at Tonga High School where Peace Corps volunteer **Mervyn L. Hamer, '73,** has been teaching for the past two years. This elite public school, which selects the brightest students in Tonga, is known for its rigorous scholastic program and its top notch faculty. It enrolls 460 students and is located in Nuku'alofa, capital of this country of 95,000 people and 150 islands.

Hamer, who is one of six Peace Corps volunteers on the high school staff, teaches chemistry, general science, and mathematics. Although he had never taught previously, he went to Tonga a month after graduation and immediately plunged into teaching.

"I just got thrown right into the situation and started teaching," he said. "It was kind of a new thing at first.

"I really enjoy it and I enjoy the kids," he added. "You have your bad times but not very often. I usually feel pretty good at the end of the day."

Teaching science in an isolated, traditional island nation poses its own unique problems, he noted. "It's difficult in the sense that it's fairly technical, and kids here don't have any exposure to things like television and mechanical gadgets. You have to spend time teaching them things that we take for granted. But it isn't hard using visual aids and class demonstrations."

In class, Hamer stresses demonstrations and experiments so that students can see scientific principles for themselves. "They do most of the experiments themselves," he said. "It's easy to keep them interested. I'd rather let the kids do things themselves so that they get used to handling things. I figure that you learn what you do."

Most of his students are in the fifth form — roughly equivalent to the eleventh grade — and are studying to pass examinations for their school certificates, similar to high school diplomas. Hamer teaches them from a syllabus intended to prepare them for the exams. Both the syllabus and the tests are geared to New Zealand's educational system, which serves as the model for that of Tonga.

Hamer must cover the given topics on the syllabus, but his lesson plans and teaching methods are up to him. "I don't like to try to change things too much in class because passing this test means a lot to some kids," he noted. "I don't want to spoil their chances."

He teaches in English, Tonga's official language and the medium of instruction in the secondary schools. The students' first language is Tongan, however, and not all of them are adept at reading, writing and understanding English. "It's tough to give them problems that are really abstract," Hamer said. "English is their second language and they don't really understand them." The students are not allowed to speak Tongan at the school.

Hamer's school day runs from 8 a.m. to 4:30 p.m. After school he may work on lesson plans, correct papers, go to the movies, play handball or soccer with the students, or teach special night classes for students preparing for the exams.

He lives in Nuku'alofa, the only urban center in the country, in a small oceanside house with running water but no electricity. "Life is simpler here, so there are fewer things that can go wrong," he said. "I don't really have that much free time, but I find that things move a lot easier here."

A 1969 graduate of New Bedford (Mass.) High School, Hamer will wind up his two years of Peace Corps service in Tonga this summer. He is one of about 75 Peace Corps volunteers serving in Tonga in a wide variety of education, health and professional services programs. Around the world, about 7,900 Americans are serving as Peace Corps volunteers and trainees in 68 developing nations.

The Peace Corps is part of ACTION, the federal agency for volunteer service established in July, 1971 to administer volunteer programs at home and overseas.

WPI

1970

Married: **Kalvin W. Ngoon** and Miss Sandra E. Lilley on April 26, 1975 in Oxford, Massachusetts. The bride, a registered nurse, graduated from the University of Massachusetts School of Nursing in Amherst. The groom is a senior programmer at Syntex, Inc., Palo Alto, Calif.

James F. Bagaglio, a medex (medical assistant) trainee from the Dartmouth-Hitchcock Medical Center at Dartmouth College in Hanover, N.H., began a nine-month apprenticeship with Dr. Christian Briggs of Nantucket, Mass. in April. As a medex, he is trained in taking complete physical examinations and detailed medical histories. He is competent in taking blood samples, giving shots, checking blood pressure, and conducting lab work. Previously he was a supervisor at North Shore Children's Hospital in Salem. . . . **Francis L. Belisle, Jr.,** is with Hughes Aircraft in Culver City, Calif. . . . **Mark E. Brown** works as a lab supervisor at Minneapolis Medical Research Foundation, Minneapolis, Minn.

John D. Cattel serves as a district representative for Betz Labs in Trevose, Pa. . . . **Bernard J. Dodge,** who has been associate projects administrator at WPI for the past three years, is spending the summer studying Spanish as the Centro Intercultural de Documentacion in Cuernavaca, Mexico. In September he starts graduate studies in the area of instructional technology in the School of Education at Syracuse University. . . . **James H. George** is a chemical engineer at Uniroyal Chemical Co. in Naugatuck, Conn. . . **Robert J. Goodness** vice president and general manager of Man-Flight Systems, Inc., Worcester, appeared in a prime-time television special, "Fly Like a Bird", which was broadcast on Boston's Channel 4 on March 21st. The special highlighted the new sport of hang gliding and included film footage of Goodness and others participating in the sport on the outer sand banks of Cape Cod.

Robert Grillo works for F.H.W.A. in Hartford, Conn. . . . **Alan F. Hassett** has received his registration as a professional engineer in New York state and also has completed the requirements for a master's degree in sanitary engineering from Syracuse University. Chip is a project engineer for the civil engineering division of O'Brien and Gere Engineers, Inc., Syracuse. . . . **Roger Henze** received his master's degree in regional planning from Cornell University in January. For a year he and his wife, Judy, will be working as VISTA volunteers. They are being sponsored by the Yadkin Valley Economic Development District, Inc., in Boonville, N.C. Their project is to organize and set up a senior citizen center in Davie County. . . . **Thomas G. Mallory** is an applications engineer at USM Corp., Shelton, Conn.

1971

Paul B. Ash has been elected president of the Dover-Sherborn (Mass.) Teachers' Association. A chemistry teacher at the Dover-Sherborn Regional High School, he was a delegate to the Mass. Teachers' Association Convention in 1974-75 and served on the committee to draw up the constitution of the Dover-Sherborn Teachers' Association. He chaired the committee to form the Honor Society at the high school. As president of the 142-member teachers' association, he hopes to improve communications between the communities, the administration, the faculty and the school committee. . . . 2/Lt. **Richard C. Brunet** has been awarded silver wings upon graduation from U.S. Air Force navigator training at Mather AFB, California. He is being assigned to MacDill AFB, Florida, for flying duty with a unit of the Tactical Air Command.

John N. Brusseau was recently promoted from assistant to associate professor in the school of engineering at Western New England College, Springfield, Mass. . . . **Steven A. Clarke** is a biomedical engineer at Thermo-Electron Corp., Waltham, Mass. . . . **Gregory S. Dickson** is now a manufacturing supervisor at the Allyns Point Plant of Dow Chemical Co. in Gales Ferry, Conn. . . . **William B. Ericson** holds the post of design engineer at Digital Equipment Corp., Marlboro, Mass. . . . The Rev. Mr. **Anthony S. Kazarnowicz** was ordained to the priesthood on May 17 at Our Lady of Jasna Gora Church in Clinton, Mass. He studied for the priesthood at SS Cyril and Methodius Seminary, Orchard Lake, Mich., and completed his deacon internship in Our Lady of Jasna Gora parish.

James Lavallee is a field engineer at Sargent & Lundy in Chicago. . . . **Scott McCandless** is now an adjunct assistant professor in the CE department at WPI. . . . **John R. Oscarson** works at Pfizer Chemical, Groton, Conn. . . . **Donald K. Peterson** has been promoted to senior investment analyst at State Mutual Life Assurance Company of America in Worcester. In 1973 he received his MBA from Dartmouth and then joined State Mutual's securities organization. Last year he was promoted to investment analyst. . . . **Steven M. Purpura** has opened his own glass business, Wayside Glass & Mirror Company, on Rte. 20 in Marlboro, Mass. Previously he was employed as a glazier at Federal Glass in Framingham. . . . **Richard San Antonio** is a medical student at Washington University Medical School, St. Louis, Mo. . . . **Charles A. Sumner** works as a design engineer at Worcester Controls Corp., West Boylston, Mass.

Noel Totti III is a third-year medical student at the University of Puerto Rico. He received his MS in biomedical engineering from Duke University. . . . **Urmas A. Volke,** who married Miss Jacquelyn M. Catino, a graduate of Salter Secretarial School last October, is employed by Dynamac Inc., Natick, Mass. . . . **William R. Whitworth** is now a production supervisor in the Fisher Body Division of G.M.C. in Trenton, N.J. . . . **Robert D. Williams** is with CETA in Fitchburg, Mass.

Michael J. Winn writes that he is an independent fisherman. He is located in Orleans, Mass.

1972

Married: **Konstantin Eliadi** and Miss Carol Ann Lake on April 27, 1975 in Northboro, Massachusetts. The bride graduated from Quinsigamond Community College, Worcester, and from the University of Massachusetts, where she received a bachelor's degree in nursing. She is a registered nurse in the St. Vincent Hospital emergency room. Her husband is working for his master's degree in environmental engineering at WPI. . . . **James A. Hardy** to Miss Mary J. Kniep on May 17, 1975 in Rochester, New York., Mrs. Hardy graduated from Marquette University where she received her BS degree and the University of Rochester where she received her MS degree. She is a registered nurse. Hardy is a graduate student at the University of Rochester. . . . **David P. Riedel** and Miss Rima S. Perlstein recently in Hartford, Connecticut. The bride graduated from C.W. Post College and is now a graduate student in theater at the University of Connecticut. The groom is a graduate student in computer science at the University of Connecticut.

James J. Altoonian is an investment analyst at Detroit Bank & Trust, Detroit, Mich. . . . Currently **Gregory S. Blood** is assistant regional superintendent for Swift & Co. in Union, N.J. . . . **James P. Colangelo** writes that he is a third-year medical student at St. Louis (Mo.) University. . . . **David S. Cummings** is now a manufacturing engineer at Norton Co., Worcester. He and his wife, Bonnie, recently purchased a beautiful 200-year-old farm in Princeton. . . . **Alan H. Fraser** is with the Dream Machine in Worcester Center. . . . Dr. **Terry A. Fuller** writes that he is a research biophysicist at Sinai Hospital of Detroit. . . . **Rae H. Johnson** is a construction service engineer at Warner & Swasey in Worcester. . . . **David L. LeBlanc** now serves as automotive territory manager at Gates Rubber Co., Denver Colo.

Frank D. McMahon is a materials engineer at Haynes, Hollon & Assoc., Inc., Dallas, Texas. . . .

Randall Partridge, reportedly one of the world's foremost experts in formose (the conversion of carbon dioxide to sugar) has been participating since March in a formal scientist exchange program between WPI and the Soviet Union in support of space travel research. To date, research attempts to produce edible sugar from the exhaled breath of astronauts have been unsuccessful. If an edible sugar could be produced, it would provide a carbohydrate which would be important in feeding the crew for the manned Mars shot being planned by NASA. Partridge will report to WPI on his progress with the Soviet scientists. The trip was funded by the National Science Foundation, the exchange program being coordinated by WPI Prof. Alvin H. Weiss. Partridge is a chemist with the Mobil Oil Co., Paulsboro, N.J.

Wilfred L. Prue works for the Naval Ordnance Station in Indian Head, Md. . . . **Bruce Rosser** is a senior engineer in the New Jersey Department of Transportation in Trenton. . . . **Dinesh V. Shah** serves as a stress analyst for All States Design & Development in Houston, Texas. . . . **Joe Spurlock** has been hired as a chemistry teacher and basketball coach at Windham (Me.) High School. Earlier he taught chemistry at Tourtelotte High School, Grosvenordale, Conn. During his five years as a basketball coach, his team reached the Connecticut state tournament twice. . . . **Thomas W. Staehr** is a materials engineer for the Tennessee Valley Authority at the Bellefonte Nuclear Plant in Hollywood, Ala. . . **Kurt M. Wusterbarth** serves as a project engineer at Hercules, Inc., Lake Charles, Louisiana.

1973

Married: **Charles M. Henrickson** and Miss Pamela J. Carlson in Worcester on April 12, 1975. The bride attended North Park College, Chicago, and Worcester State College. Her husband is a manufacturing engineer at General Electric Co., Fitchburg, Mass. . . . **Clifford P. Peterson** and **Ellen M. Church, '75,** of Millbury, Massachusetts on October 26, 1974. **Joseph J. Magri, Jr.,** was an usher, and **Helen Weimerskirch, '74,** and **Vicki Cowart, '75,** bridesmaids. Mrs. Peterson is a computer programmer with the American Telephone & Telegraph Co. in Piscataway, N.J. The groom works for the Bank of Tokyo's International Operations Department in New York City. . . . **Lt. Richard F. Sliwoski** (U.S. Army) and Miss Leslie L. Pierce on May 17, 1975 in Forestville, Connecticut. The bride received her associate's degree from Becker Junior College. Her husband is with the Army Corps. of Engineers in Dexheim, Germany. . . **Kenneth R. Therrien** and Miss Carol E. Babineau on May 3, 1975 in Gardner, Massachusetts. Mrs. Therrien graduated from Quabbin Regional High School. The groom works for American Standard Co., Windsor Locks, Conn.

Abdulazeez M. Al-Baghli serves as a television engineer for the Ministry of Information in Kuwait. . . . **William N. Ault,** a product engineer at Norton Co., Worcester, participated as a session leader in the 1975 ASAM International Technical Conference and Exhibition held in Chicago last May. His topic was: "Surface Integrity: How Much Do You Need and How Do You Get It?" . . . **Duane Barnhart,** SIM, works as superintendent of forming at Norton Co. . . . **Paul R. Ciaccio** is presently attending Massachusetts College of Optometry in Boston. . . . **Robert DiGennaro** is an electrical field engineer for GTE Sylvania in Waltham, Mass. . . . **Stephen F. Dowling** is a sales engineer at Nash Engineering Co., Norwalk, Conn.

Recently **Edward S. Jamro** received his MS in environmental engineering from the University of Massachusetts. He is now an environmental engineer in the corporate engineering department at Monsanto Chemical Company in St. Louis, Mo. . . . **Stephen E. Kaminski** works for the Rural Electrification Administration in Washington, D.C. . . . **Ken Larsson** is with Boswell Engineering in Waldwick, N.J. . . . **James M. Mercik** is an actuarial student at Aetna Life & Casualty, Hartford, Conn. . . . The Raytheon Co., Bedford, Mass., has hired **Robert H. Newman** as a software engineer. . . . **Gerald Otte** is teaching with the Peace Corps in West Malaysia. . . . **Einat H. Pilzer,** who received her MS from MIT last year, works for Nuclear Energy Systems in Monroeville, Pa. . . . **Diane Pritchard** is a computer programming instructor at Providence (R.I.) College. . . . **Dinesh S. Shah** is with EBASCO Services, Inc., New York City. . . . **Paul M. Watson,** a research engineer, works at Amoco Chemical Co., Naperville, Ill. . . . **Mark D. Whitley** is a production engineer at Shell Oil Co., New Orleans, La.

1974

Married: **Dean C. Anderson** to Miss Pamela J. Bray on September 14, 1974 in Worcester. The groom holds a field engineering position with Envirotech Systems, Inc., of California. Currently he is assigned to a project in Maynard, Mass. . . . **Eugene R. Lukianov** and Miss Debra Ann Garbarino last spring in Roslindale, Massachusetts. The bride, a graduate of Holliston Junior College, is a respiratory therapist. The groom works for Bendix Co., South Bend, Indiana. . . . **Gordon G. Woodfall** and Miss Joanne A. Desaulnier in Pomfret, Connecticut on August 24, 1974. The bride is employed as a secretary for the Motor Lease Corp. in Farmington, Conn. Her husband is production control analyst at Fafnir Bearing Co., New Britain, Conn.

Born: to Mrs. **Elaine Garwood Henshon** and Mr. Henshon, a son, on March 31, 1975. . . . Recently to Mr. and Mrs. **Albert Simonti,** a daughter, Alicia. Al is still with Stone & Webster, Boston.

Bruce R. Beaupre writes that he is classified as a technical supervisor and is presently doing interplant project engineering and consulting with BASF Wyandotte Corp., Wyandotte, Mich. . . . **Douglas Borgatti** is working for his master's degree at Manhattan College in Bronx, N.Y. . . . **Leonard J. Brzozowski** and **Lee D. Turner** recently did some graduate research for Prof. Dennis L. Meadows (author of *The Limits to Growth*) at the Amos Tuck School of Business at Dartmouth College. They are spending the summer building models of the World Food and Energy Systems for the U.S. General Accounting Office in Washington, D.C. . . . **Stuart A. Daniels** works for Boston Insulated Wire & Cable Co., Plymouth, Mass. . . . **Edward S. Dlugosz** has taken a leave of absence from Camp Dresser & McKee, Inc. and is doing graduate work at Northeastern University, Boston. . . . **William Dyson** is a graduate student in physics at Central Michigan University.

Edward Gordon is assistant engineering programmer at Burroughs Corp., Detroit, Mich. He is also a graduate student at Wayne State University. . . . **Joseph Lemanski** works for ARP Instruments, Inc., Newton, Mass. . . . **Robert E. Lindberg** is a research assistant and assistant varsity swim coach at the School of Engineering at the University of Virginia in Charlottesville. . . . **Robert S. Parnass** has been employed by the Systems Research and Development Dept. of Ultimacc Systems, Inc., Maywood, N.J. The company designs and sells mini-computer systems. . . . **Stephen Rubin** is with EMC Controls in Cockeysville, Md. . . . **Lawrence D. Patty** holds the post of associate engineer at Electric Boat in Groton, Conn. . . . **Frederick L. Williams** is an associate scientist at Leeds & Northrup in North Wales, Pa.

Edwin Anderson, who for 44 years was a physics lecture assistant at WPI, died on April 18, 1975 in Worcester. He was 68.

As a physics lecture assistant, Mr. Anderson set up experiments for students. He retired two years ago. A Worcester native, he was a member of the Tech Old Timers and the Masons. His hobbies included antique collecting and gardening.

Ivan E. "Pete" Bigler, 83, head coach at WPI from 1921 to 1941, died on April 1, 1975 at his home in Coldwater, Michigan.

He was born in Webster, Ohio in 1892 and graduated from Juniata College in Huntingdon, Pa. in 1916. Later he received a master's degree in physical education from Springfield College. While a college student he played professional baseball with the Philadelphia Athletics in the summers. After graduation he was a utility infielder and third baseman with the St. Louis Browns and played with such notables as George Sisler and Eddie Plank.

In 1920 he resigned as a captain in the Marine Corps and joined WPI as a coach in basketball, baseball, and football. He coached the football team to its first undefeated season in 1938. During the early 1920's Bigler's basketball teams were some of the best in New England. The New England Championship team's picture is displayed in the Basketball Hall of Fame in Springfield, Mass.

Mr. Bigler began his career in the production and count controls departments at Wyman-Gordon in 1941. The next year he coached the company's baseball team to the Industrial League and city championships. He was an avid hunter and fisherman and instructed Shrewsbury Sportsman's Club members in the use, care, and safety of firearms.

Karl E. Herrick, '10, of Laguna Hills, California died in January.

From 1912 until 1950 he was with Norton Co. in Worcester. He belonged to Phi Gamma Delta and the Shrine.

He was born on August 31, 1885 in Winchendon, Mass., later graduating from WPI in 1910 as a chemist.

James P. Allardice, '14, died on May 7, 1975 in Somerset, Massachusetts.

A native of Fall River, Mass., he was born on June 3, 1891. In 1914 he graduated from WPI with his BS in civil engineering. A registered professional engineer and land surveyor, he began his career in the Fall River Engineering Department. Later he worked for Stone and Webster. Prior to his retirement in 1959, he was with the State Department of Public Works.

Mr. Allardice served for two terms on the Somerset Planning Board. He belonged to the Massachusetts Consistory, SPRS, 32nd degree; and the Retired State, County, and Municipal Employees Association.

Leon W. Dunbar, '16, of Tampa, Florida passed away on January 24, 1975 following a long illness.

He was born on April 7, 1893 at Canadensis, Pa. In 1916 he graduated as a mechanical engineer from WPI. For many years he was a district manager for the Clarage Fan Co., Cleveland, Ohio from which he retired in 1955. Mr. Dunbar was a member of Alpha Tau Omega fraternity and Skull.

Retired Army Col. **Harold A. Maxfield, '16**, a former faculty member at WPI, died on May 19, 1975 at the age of 81.

He was born on Sept. 24, 1893 in Lowell, Mass. and graduated as an electrical engineer from WPI in 1916. Following duty as an Army officer in France during World War I, he became a research engineer at the Westinghouse Research Laboratory. From 1921 until 1946 he was a professor in the electrical engineering department at WPI. He was head of the EE Department at the U.S. Naval War College in Newport, R.I. from 1947 to 1952, and also lectured at Brown University. For two years he was commandant of the U.S. Army Officers Reserve School in Rhode Island. From 1952 until 1959 he was a professor and EE department head at Norwich University, where he retired as a Professor Emeritus.

Col. Maxfield, who supervised over 1200 students and instructors at the Coast Artillery School (Monroe, Va.) during World War II, was a life member of AIEE and ASEE. He was also a registered professional engineer in Massachusetts and belonged to Tau Beta Pi, Sigma Xi, and Lambda Chi Alpha. He wrote many articles on teaching and supervised the writing of "Confidential Training Manual, U.S. Navy." He also instituted a course in industrial engineering which was taught at WPI from 1924 until 1950.

Winthrop S. Pratt, '16, of Darien, Connecticut passed away last year.

He was born in 1891 in Grafton, Mass., later becoming a student at WPI. During his career he was with Heald Machine Co., Worcester; Toledo (Ohio) Machine and Tool Co.; National Acme Co., Windsor, Vt.; Waltham (Mass.) Watch Co.; and William L. Fletcher, personnel counselors, in Boston. He was a member of Phi Gamma Delta fraternity.

Walton B. Scott, '16, of San Diego, California died suddenly on February 18, 1975 at the age of 79.

A native of Danielson, Conn., he later graduated from WPI as a chemist. During his career he was with the U.S. Bureau of Mines; National Aniline and Chemical Co., Buffalo, N.Y.; and Hooker Chemical Corp., Niagara Falls, N.Y., where he retired as technical superintendent in 1961 following 35 years of service.

Mr. Scott, a former president of the Western New York Chapter of the Alumni Association, belonged to Delta Tau, now Sigma Phi Epsilon fraternity, and served as chairman of the Western New York section of the American Chemical Society. He was with the Chemical Warfare Service (defense research) during World War I and was a member of Sigma Xi and Tau Beta Pi.

John O. Archibald, '18, died in East Aurora, New York on March 29, 1975.

He was born on June 5, 1895 at Santa Cruz, Calif. After studying at WPI, he was with Gould Storage Battery Co., Depew, N.Y. for eight years. He then became a manufacturer's agent in the refractory and foundry supply field, a business which he operated in Buffalo prior to his retirement in 1963.

Mr. Archibald was a pioneer in amateur radio, a field he entered in 1911 and maintained an interest in throughout his life. He belonged to Phi Gamma Delta fraternity, was a past president of the Western New York chapter of the Alumni Association, and served as a lieutenant in the U.S. Army Signal Corps during World War I.

Myron C. Goddard, '21, of Westerville, Ohio passed away last December.

He was born on June 29, 1896 in Sidney, Me., and graduated from WPI in 1921 as an electrical engineer. From 1921 until 1924 he was with Western Electric Company and from 1925 until his retirement in 1961 with Bell Telephone Laboratories, Inc. He belonged to AIEE.

Raymond A. Lane, '21, of Florence, South Carolina, died on November 22, 1974.

He was born on August 30, 1898 in North Brookfield, Mass. In 1921 he received his BSEE from WPI. During his career he was with Western Electric, Chicago; Westinghouse Electric and Manufacturing Co., East Pittsburgh; Safety Car Heating & Lighting Co., New Haven; F.A.D. Andrea, Inc., Long Island; and Aerovox Corp., Brooklyn.

Later he was chief engineer at Pyramid Electric Co., Darlington, S.C. After retiring from General Instrument as director of research and engineering in 1964, he spent a year in Mexico City as a consultant engineer at Mexican Capacitor Co. He was a life member of AIEE and a Shriner.

C. Sture Carlson, '26, passed away at his home in Harwich, Massachusetts on April 18, 1975. He was 71 years old.

For thirty years he was a plant engineer at Norton Co., Worcester, retiring in 1969. While with the company he traveled extensively in this country and abroad doing construction work. He was also associated with Mid-West Abrasive Co; Peninsula Grinding Wheel Co.; Tennessee Eastman Corp; the city of Worcester; International Power & Paper Co; Big Four R.R.; and Blackstone Valley Gas and Electric.

He was born on March 2, 1904 in Varmland, Sweden and graduated from WPI as a civil engineer in 1926. A member of Phi Sigma Kappa, Skull, and the Cape Cod Power Squadron, he was also active in scouting and Algonquin Council BSA for over twenty years. He served as town engineer in Northboro and was a registered professional engineer.

Wallace H. Tucker, '26, died at his home in Buffalo, New York on March 20, 1975. He was 70.

A native of Webster, Mass., he graduated from WPI in 1926 as an electrical engineer. For many years he was a sales engineer for Westinghouse Electric Corp., Buffalo. He retired in 1965.

Henry C. Waite, '27, of Cuyahoga Falls, Ohio passed away on February 27, 1975.

Born in Holyoke, Mass., on December 31, 1904, he later was a student at WPI. At the time of his retirement he was foreman at Hammermill Paper Co. and was the owner of Bix Service Furniture Stripping Co. He belonged to Alpha Tau Omega.

Russell E. Cobb, '28, died on May 19, 1975 at his home in Spencer, Massachusetts. He was 77.

He retired in 1963 after 34 years as fire protection engineer for Factory Insurance Association, Hartford, Conn. A native of Holden, Mass., he was born on April 20, 1898. After graduating as a mechanical engineer from WPI in 1928 he joined the Factory Insurance Association where he worked until retirement.

Mr. Cobb was a former member of the Sons of the American Revolution.

Wells F. Bausman, '32, a self-employed mechanical engineer, died on March 11, 1975 in Springfield, Massachusetts. He was 63.

He was a native of Chicopee, Mass. and graduated with a BSME from WPI. During his career he was associated with National Equipment Co.; United American Bosch Corp.; duPont; and Mill River Tool Co., Springfield, Mass.

Mr. Bausman was a Navy commander in World War II, serving in the South Pacific. He received a commendation as a submarine repair officer. A member of Sigma Alpha Epsilon fraternity, he also belonged to the Society of Professional Engineers.

Richard H. Martin, '32, died in Worcester on March 31, 1975. He was 64 years old.

Five years ago he retired as a civil engineer from E.J. Cross Co., Worcester, after 32 years of service. He was born in Worcester on August 9, 1910 and graduated from WPI in 1932.

Mr. Martin was secretary-treasurer of the Boylston Sportsmen's Club from 1949 to 1973. During World War II he was with the Army Engineer Corps in the Pacific theater.

Francis J. Crowley, '34, a tax consultant with H & R Block, died in Scottsdale, Arizona in March.

A native of Fall River, Mass., he was born on January 13, 1913. During his lifetime he was an executive with American Tool & Machine; Harshaw Chemical; Ferro Chemical Corp., Cleveland, where he served as vice president; and Crowley-Thompson Chemical Co., Cleveland, where he was president. Two years ago he retired as vice president of the Essex Chemical Co. in Clifton, N.J.

Mr. Crowley was a member of the American Chemical Society, the American Ceramic Society, and the Chemists Club of New Jersey. He was a community director of the Red Cross and a past president of the Cleveland chapter of the Alumni Association. He graduated from WPI in 1934.

Marcus Abelson, '35, a retired engineer for the U.S. Department of Interior, died on March 4, 1975 in Ross, California.

Born on August 15, 1911 in Worcester, he received his BSEE from WPI in 1935. After working as an engineer at Worcester State Hospital and the Federal Power Commission in Washington, D.C., he joined the Dept. of the Interior, also in Washington. While with the department he was transferred to Boston, where he became a regional coordinator. Last year he retired following 35 years of service.

In July of 1973 he received a citation for meritorious service from former Secretary Rogers C.B. Morton. He was a certified professional engineer.

James J. Gushaw, '35, of Chesterfield, Missouri died on March 20, 1975 at the age of 62.

He was born in Korce, Albania on September 20, 1913. In 1935 he received his BSCE from WPI. From 1935 until 1940 he was with Stone & Webster Engineering Corp. Later he was an associate engineer in the Panama Canal Zone, served in the U.S. Army, and worked for Weyerhaeuser Timber Co. In 1950 he joined Sverdrup & Parcel and Associates, Inc., St. Louis, Mo. At the time of his death he was principal engineer and project manager of the consulting firm.

Mr. Gushaw, a registered professional engineer in ten states, three Canadian provinces, and the Panama Canal Zone, had served as an elected officer in the Professional Engineering Society. He was also a member of the American Association for the Advancement of Science. For his work with the Boy Scouts of America and the Queen Scouts of Canada, he was awarded a trophy in 1974. He was active with the United Fund, Red Cross, and YMCA, and also served as a member of the WPI Admissions Committee and as vice president of the New York chapter of the Alumni Association.

Joseph C. Putelis, '40, died in Worcester on March 25, 1975 at the age of 57.

He was a chemist and sanitary engineer for 34 years for the city of Worcester and also worked part time at the Worcester Foundation for Experimental Biology in Shrewsbury.

Mr. Putelis was born on March 2, 1918 in Worcester and belonged to the American Chemical Society. He graduated from WPI in 1940.

Robert S. Foster, '44, associate laboratory director at Columbus (Ohio) Coated Fabrics Corp., died in February.

He was born on February 13, 1923 in Boston and graduated as a chemist from WPI in 1944. After service with the U.S. Navy, he became a research assistant at M.I.T. and later a graduate student at Ohio State. For many years he was with Columbus Coated Fabrics. He was a member of Lambda Chi Alpha fraternity.

Thomas W. O'Brien, '46, was killed in an airplane crash in Barnwell County, South Carolina on June 24, 1974.

He was a production test pilot with Grumman Aerospace Corp. in Savannah, Ga., where he also served as chief training instructor. He was born on August 15, 1925 in Portsmouth, N.H.

Paul J. Sroka, '64, was killed in a gyrocopter crash in Ocotillo Wells, California last winter. He was 32 years old.

Born on January 27, 1943 in Webster, Mass., he graduated as an electrical engineer from WPI in 1964. In 1965 he received his MSEE from Polytechnic Institute in Brooklyn and in 1970 he received his MS in space physics from U.C.L.A.

At the start of his career he was associated with Wheeler Laboratories, Smithtown, N.Y., and Hazeltine Corp., Plainview, N.Y., where he was a senior engineer in the research lab. Later he joined Transco Products, Inc., in Venice Calif., as a group supervisor. From 1972 to 1974 he was a senior engineer in the electro-magnetic systems division at the Raytheon Company in Goleta, Calif. At the time of his death he was a senior staff engineer with Teledyne Micronetics in San Diego.

Mr. Sroka, whose article, "Nomograph Saves Time In Converting Antenna Gain," appeared in the March '74 issue of *Microwaves,* was a member of Sigma Pi, Eta Kappa Nu, and Sigma Xi.

Mr. Keen, Tracer of Missing Persons — We have a few hundred people we'd like to have addresses for

If any **Journal** readers can help us locate any of the alumni on the following list, we'd be most grateful.

Samuel A. A. Aaron '39
S. Richard Abbott '39
Marcus Abelson '35
Edward J. Abendschein '35
Winfred M. Adams '02
David Adelstein '28
David M. Alden '70
LT. J. Warren Alford '61
William S. Allan Jr. '43
James P. Allardice '14
Elliott A. Allen '08
Subhashchandra N. Amin '67
Alfred F. Andersen '41
Frederick A. Andersen Jr. '75
David D. Andre '70
Stanley C. Andrukonis '53
Stanley J. Andrysiak '64
Edward L. Anton '18
John T. Apostolos '65
Antonio Aranguren '56
Karen L. Arbige '75
John D. Archibald '18
Muammer Arikan '70
David B. Armitage '70
Ozden Aslan '60
William F. Atwood Jr. '36
Sidney H. Avery '24
Hooshang Azma '75
Chester A. Bacon '03
Thomas J. Bagley '53
David A. Bailey '72
Louis J. Baldini '44
Kinsley A. Ball Jr. '49
Robert A. Balouskus '68
John J. Balsavage '37
Philip L. Barbaccia '50
Benjamin B. Barker Jr. '48
Stephen J. Barlow '71
Bernard Baron '64
Robert W. Bartlett '16
Wells F. Bausman '32
Paul M. Bazinet '73
Edward G. Beckwith '97
John A. Beede '59
Jacques R. Belair '61
Marcel R. Benjamin '67
Irwin G. Benkert '46
Alan E. Benson '59
Jeoffrey N. Berg '71
Thomas G. Bergin '30
Edward Berman '73
Robert G. Bertrand '66
Geetha Bhat '72
Satish H. Bhatt '66
Vithal Kanji Bhimani '73
Jose R. Biamon '47
George A. Bijur '21
Roger R. Billings '58
John A. Birch '34
Karl H. Bissell Jr. '53
Gaetano Biuso '46
Robert A. Bleau '59
George R. Bolduc '61
Ju Hak Bong '72
Kayhan Boro '61
Michael W. Boyd '65
Haines J. Boyle '62
Yigit Bozkurt '62
Arthur B. Brainerd Jr. '32
James R. Braithwaite '67
Santo M. Bramande '57
Henry W. Brandt '60
Robert D. Britton '62
Kenneth G. Broman '25
Arthur D. Brook '60
Ellis R. Brown '33
Harrison G. Brown '12
Richard T. Brown '44
Burgess P. Brownson '41
Lennart Brune '40
Thomas G. Burns '72
David M. Burwen '66
George W. Busby Jr. '36
George Cagen '43
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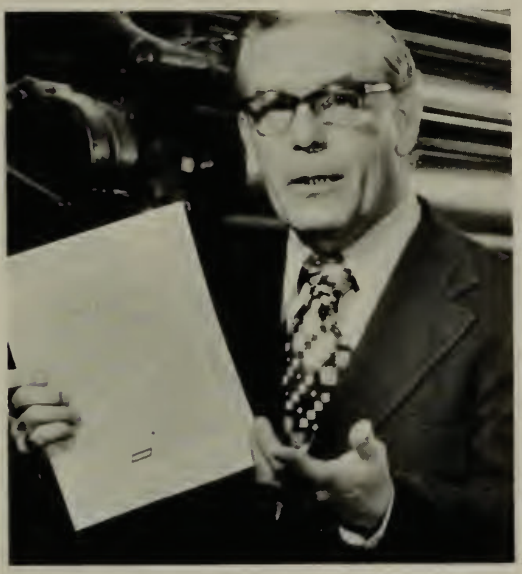

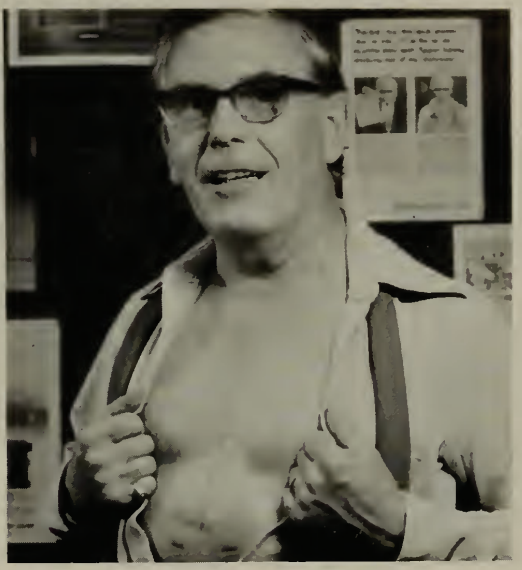

I had open heart surgery — a saphenous vein transplant. And I'm not trying to tell you I came out of the anesthetic shouting "Hooray for Tygon!" I wasn't shouting anything; the respirator tube in my throat prevented uttering a word.

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