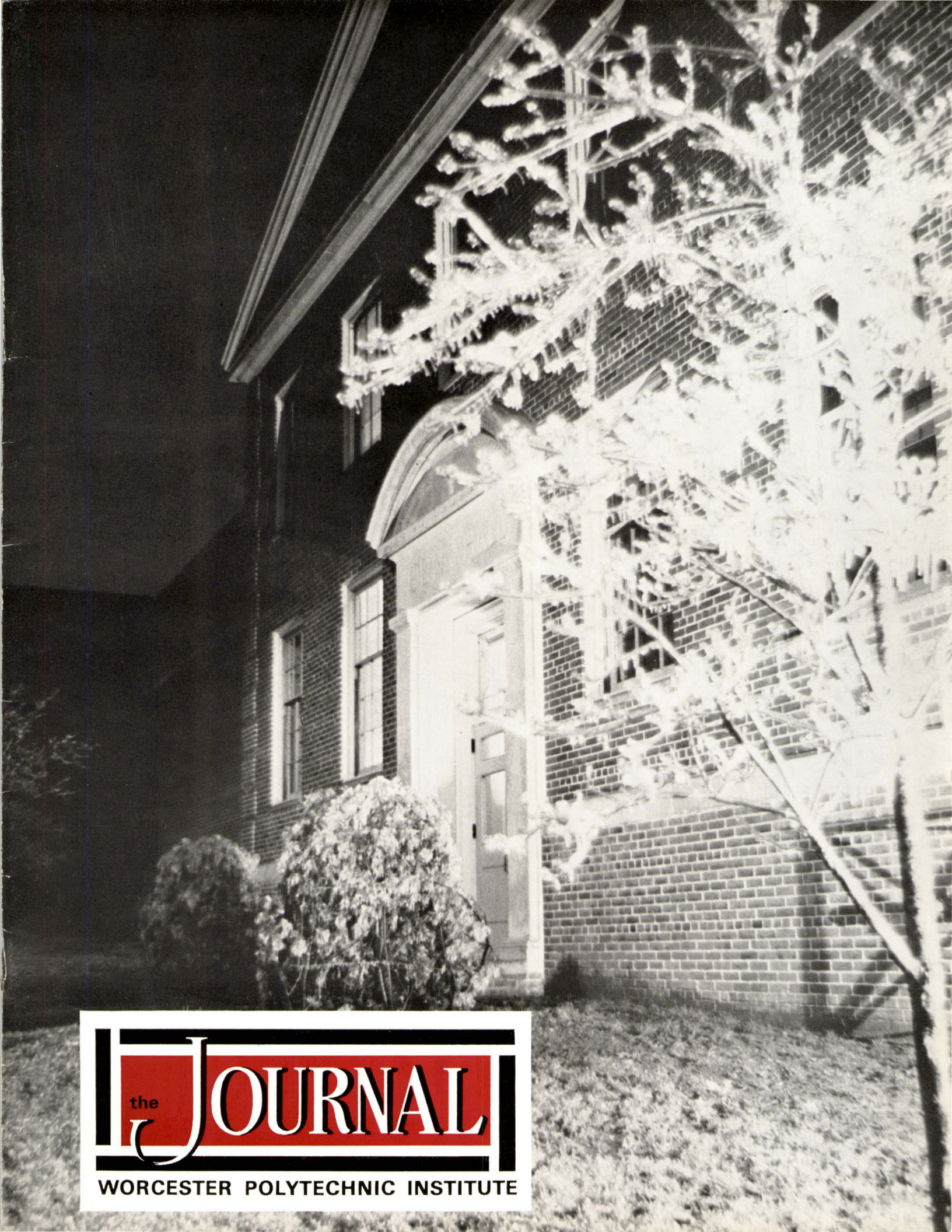
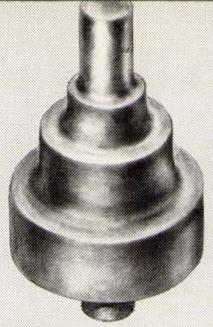


the JOURNAL

WORCESTER POLYTECHNIC INSTITUTE

105 mm howitzer breech body, 14¾ x 15″, forged weight 414 lbs. in alloy steel.

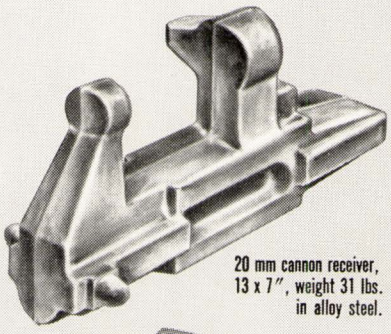


155 mm howitzer shaft, 7 x 10¾″, forged weight 46 lbs. in alloy steel.

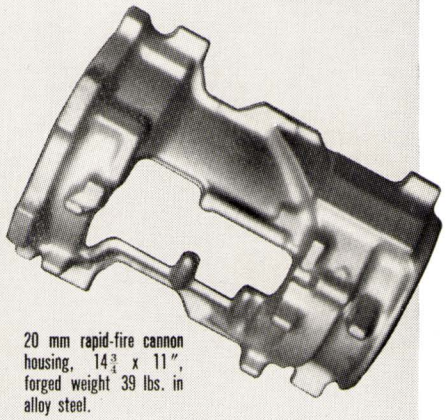
155 mm rifle breech ring, 11 x 20¾″, forged weight 432 lbs. in alloy steel.

here know-how puts "firepower" into your gun forgings

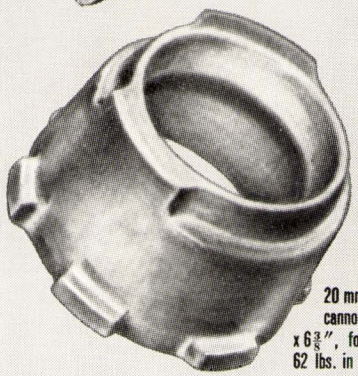
105 mm high velocity rifle evacuator head, 9¾ x 3¼″, alloy steel weight 28 lbs.



20 mm cannon receiver, 13 x 7″, weight 31 lbs. in alloy steel.



20 mm rapid-fire cannon housing, 14¾ x 11″, forged weight 39 lbs. in alloy steel.



20 mm rapid-fire cannon body, 11¼ x 6⅜″, forged weight 62 lbs. in alloy steel.

Gun components produced at Wyman-Gordon benefit from an outstanding backlog of experience . . . in variety of ordnance, aerospace and nuclear parts forged . . . in range of conventional and exotic materials worked . . . and in successful compliance with the most stringent military specifications. Here vital armament materiel is produced on hammer and press facilities unduplicated in range to minimize debilitating reheats regardless of part dimensions or configuration.

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WYMAN — *Forgings of Aluminum, Magnesium, Steel, Titanium and*

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The JOURNAL
WORCESTER POLYTECHNIC INSTITUTE

VOLUME 68
November-December 1964
NUMBER 2

Our Cover: Nature worked one of her wonders when on Friday, December 4, Worcester experienced the worst ice storm in 40 years. Although much damage was done to trees, the event did provide us with an opportunity for some unique pictures. The cover, photographed by Steve Cloues, '65, photography editor of The Peddler, shows the entrance of Olin Hall of Physics framed by Jack Frost's handiwork.

We are indebted to Steve not only for this cover but for numerous photos in this and previous issues.

The JOURNAL

Published by the Alumni Association of the Worcester Polytechnic Institute

Member of the American Alumni Council

WARREN B. ZEPP, '42
Editor and Business Manager
ROY A. SEABERG, JR., '56
Assistant Editor and Business Manager
NANCY L. MONTAQUILA
Magazine Secretary

THE JOURNAL is published in January, March, May, July, September and November. Entered as second class matter July 26, 1918, at the Post Office, Worcester, Massachusetts, under the act of March 3, 1879. Subscription two dollars per year. Postmaster: Please send form 3579 to Alumni Association, Worcester Polytechnic Institute, Worcester, Mass. 01609.

IN THIS ISSUE

Visiting Professors, Lecturers Featured

Departments Take Part In Centennial

Sir Bernard Lovell, Visiting Professor of Electrical Engineering
Dr. Lynn H. Loomis, Visiting Professor of Mathematics

"The Universe and Its Origin" was the subject of an address delivered by Sir Bernard Lovell, visiting professor of electrical engineering, on Monday, November 2. Sir Bernard was a member of the faculty for three days, November 1–3, and during that period delivered two major speeches. His visit was part of this year's Centennial program.

Sir Bernard in his major address discussed not only the origin of the universe, but also our own solar system. He stated that the answer to the origin of both these systems is imminent because of the advances made in radio telescopy and the space probe program.

After tracing some of the historical background in astronomical observation, Sir Bernard told of the results of recent work. With the optical telescope one is able to observe stars a few billion light years away, he said. With the advent of the radio telescope, however, we can now receive stellar emissions from stars over a trillion light years away.

President Storke (*left*) and Sir Bernard Lovell meet informally during a coffee hour.

"In order to understand the tremendous distances involved, imagine you were traveling at the speed of light. In one second you could circle the earth seven times. In eight minutes you would pass the sun and in four and a half years you would reach the nearest star in the Milky Way. After 100,000 years you would reach the furthest reaches of the Milky Way and begin to enter a great void. You would travel in this void for two million years before you reached the Andromedae Nebula, a complete star system approximately the same size as our Milky Way. After traveling a few billion more years you would still be in the observable universe, which contains a trillion-trillion star systems similar in size to our own. At this point you would pass beyond what we can observe with optical telescopes and into that part of the universe which is presently being investigated by radio telescopes such as the one at Jodrell Bank.

"It is important to remember that all this knowledge of outer space is very old. The sunlight we see is eight minutes old. Light from the nearest star is four and one-half years old, and from the furthest star observed by optical means many billions of years old. Thus the further we penetrate into the universe the further back in time we go and the closer we may be to the beginning of our universe."

At present there are two theories concerning the origin of the uni-

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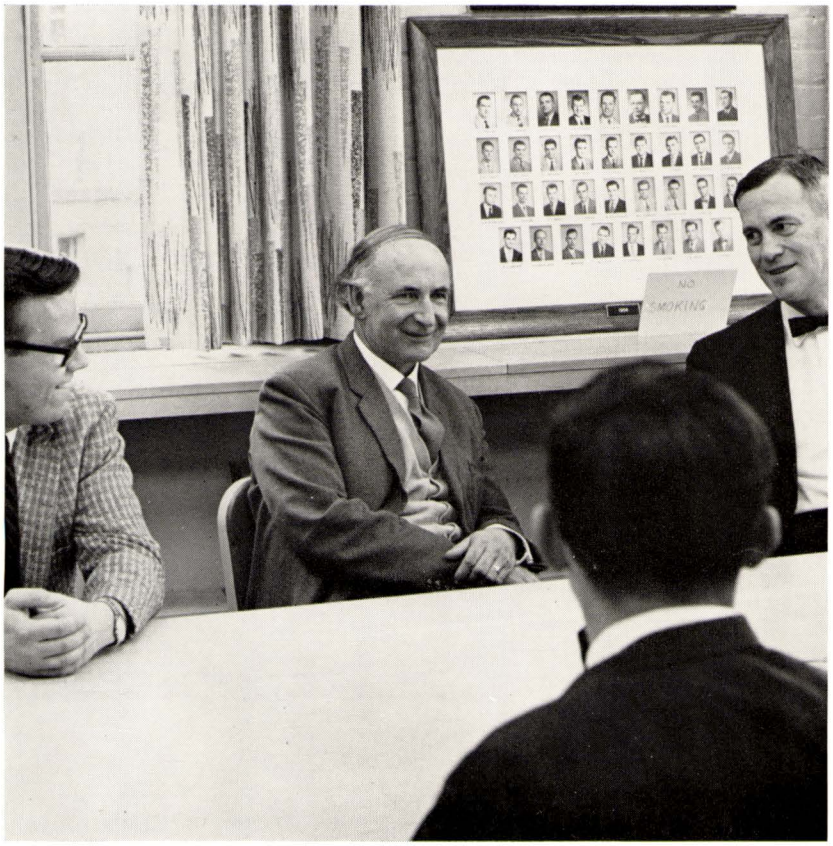


Sir Bernard met with graduate students in the Electrical Engineering Department Library. The discussion waxed hot on many subjects as students and faculty joined Sir Bernard in verbal jousts. Shown in the pictures to the left and below are students, Sir Bernard (*center*), and Dr. Glen A. Richardson, head of the department, on his left.

Continued from page 2

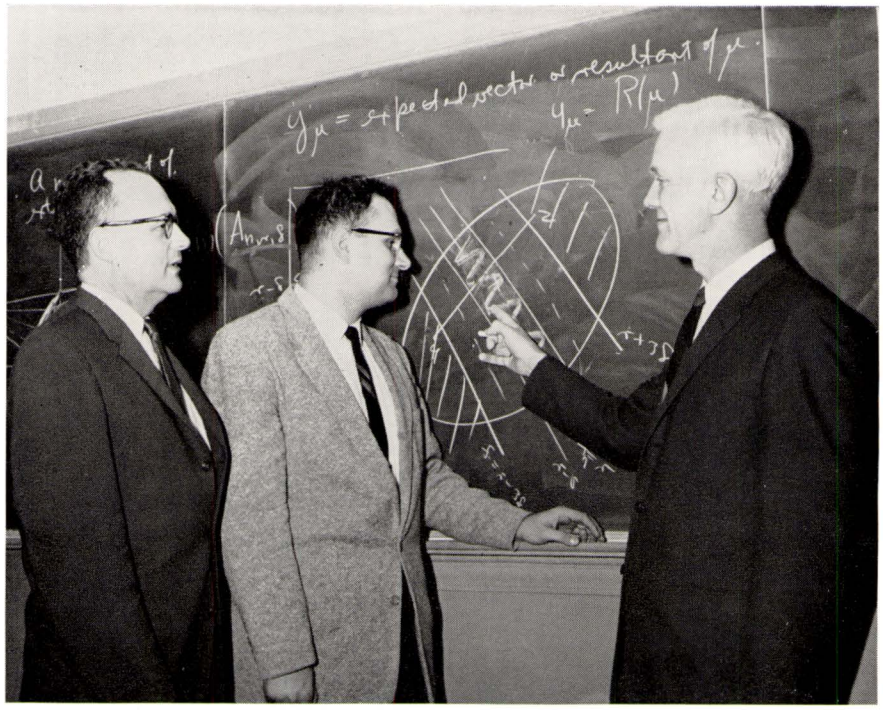
verse, stated Sir Bernard, the Evolutionary Theory and the Steady State Theory or Theory of Continuous Creation.

The Evolutionary Theory is based upon the fact that all stars are receding into space at 10 to 20,000 miles per second. Thus at one time, 10 billion years ago (or in another variant of this theory, 50 or 60 billion years ago) all the stars were together, and because of some cosmic explosion, blown apart and are continuing to recede into space.

The Steady State Theory presupposes a high degree of uniformity in both time and space. The universe was relatively the same years ago as it is today. The theory states that the creation of the universe is a continuous process based upon the generation of hydrogen atoms in space, which because of pressure build-up, drive galaxies of stars apart and at the same time form new stars.

"Radio telescopes, now exploring far beyond the range of optical telescopes," said Sir Bernard, "will determine which of these theories is correct."

With respect to our own solar system Sir Bernard noted that it is four and one-half billion years old. In the beginning the sun was an ordinary star with a gaseous nebula of dust surrounding it. This dust eventually coagulated in the cold state to form the planets. The big remaining question is how life began on earth. Was the origin of life on the gaseous dust, and therefore probably present throughout the universe, or was it unique to earth, having occurred some time during our history as a planet? The space probe to Mars and Venus should answer this question, provided the missile is free of earthly microorganisms and thus does not contaminate these planets. Were this to happen, we should have to await landings on much more distant planets.



Dr. Lynn H. Loomis (*right*) discussing a set with Dr. Elliott L. Buell, head of the Math Department (*left*), and Prof. Gordon C. Branche (*center*).

Sir Bernard is a graduate of the University of Bristol, Great Britain, in 1934 and received his Ph.D. degree from the University of Manchester in 1936. He became professor of radio astronomy at Manchester in 1951 and director of the Jodrell Bank Observatory soon thereafter. He was knighted in 1961.

He is the author of "Science and Civilization," "The Exploration of Space by Radio," "The Exploration of Outer Space," and "The Individual and the Universe."

During his tenure on the faculty, Sir Bernard delivered class lectures to the sophomore, junior, and senior electrical engineering students, met with the graduate students and on the last evening of his visit addressed the scientific and engineering community on "Developments in Radio Astronomy."

Also part of the Centennial program was a series of five colloquia held by the Mathematics Department on October 20 and 27, and November 3, 10 and 17. Discussing "Convex Sets in Analysis" was Prof. Lynn H. Loomis of Harvard University.

The series of lectures by Dr. Loomis attracted a wide audience from not only the faculty of W.P.I. and local colleges, but also from the academic community throughout the state. His subject, "Convex Sets in Analysis," is a concept important in general calculus. Its application is found in statics, game theory, probability, and geometry, as well as other aspects of theoretical math.

Dr. Loomis received his bachelor's degree from R.P.I. and his advanced degrees from Harvard University. He is presently a professor on the faculty of Harvard. His text for graduate math students, "Introduction to Abstract Harmonic Analysis," is highly regarded in its field.

No stranger to the lecture circuit, Dr. Loomis has conducted similar programs at numerous colleges for the Mathematics Association of America and the National Science Foundation.

Guiding the High School Student

Tech's Two Programs

TECHNI-FORUM

TECHNIQUEST

Each year, throughout the nation, an ever increasing number of high school students apply for admission to college. There is little known about why they decide to go to college; there is even less known about why they choose the particular schools they enter. However, one thing is clear. The guidance counselor at the secondary school level is playing a most significant role in this process of career and college selection.

Often overworked, and in many cases his advice ignored, the high school guidance counselor faces an imposing challenge. What career is best for this young man? What college offers the best opportunity of success for this aspiring student? Both of these questions place a heavy burden upon the nation's guidance personnel.

One of the major problems facing the engineering and science professions is the one of locating and attracting competent men. This problem rests mainly with the undergraduate colleges and with the secondary school guidance counselors, for it is the bachelor's degree that provides the first step in these professions.

Another aspect of this problem, and one critical to W.P.I. and similar colleges, is that the majority of high school guidance personnel is unfamiliar with both engineering and science and the differences between the two. The same is true, of course, for the high school student.

In order to help both these students and their advisers, W.P.I. has for many years conducted two programs: Techni-Forum, sponsored by the Alumni Association, and Techniquest, sponsored by the Institute. The former is for high school guidance counselors, the latter for students who have completed the junior year in high school and who want to determine if a career in science or engineering is suitable for them. Both programs, although small in numbers, appear to be of major aid to those attending.

TECHNI-FORUM

This year's Techni-Forum, held on November 5 and 6, was typical of that program. Attended this year by 36 secondary school principals, headmasters and guidance counselors, Techni-Forum is designed not only to provide an understanding of the Institute, but more importantly, of science and engineering.

Unlike many similar programs, Techni-Forum is a program in depth. All departments are discussed. In addition, the admissions policies, the athletic program, and the extracurricular activities are fully explained. In brief, those participating receive not only an understanding but a "feeling" of Tech.

Interlaced throughout the program is a discussion of all the ramifications of the engineering and science professions. First the necessary secondary school preparation is discussed, then the differentiation between a scientist and an engineer. This is followed by an analysis of the job opportunities awaiting a Tech graduate, and finally a discussion of the need for continued professional development throughout life.

During the two-day program, all facilities on campus are visited. The Alden Hydraulic Laboratory, the nuclear reactor, and the Materials Engineering Laboratory are fully explained. Each department's facilities are visited. The athletic facilities and dormitories also come in for their share of the program.

Two new ideas were tried this year and both met with approval. The liberal studies disciplines, History and Modern Languages, English, and Economics, Government, and Business, were discussed in a panel composed of the respective heads of these departments. This provided an opportunity to answer the many questions of guidance counselors and also indicated again the growing interdisciplinary aspect of all departments at Tech.

Another innovation this year was a discussion of student life by a panel composed of undergraduates. There is an old saying among guidance counselors that "if you want to know what's really going on, ask a student." They certainly asked questions.

The major event of the program was the open forum held on the evening of the first day. After presentations on admissions, athletics, and ROTC, George A. Walker, '22, chairman of the Alumni Committee on New Students, opened the forum for any questions not yet answered.

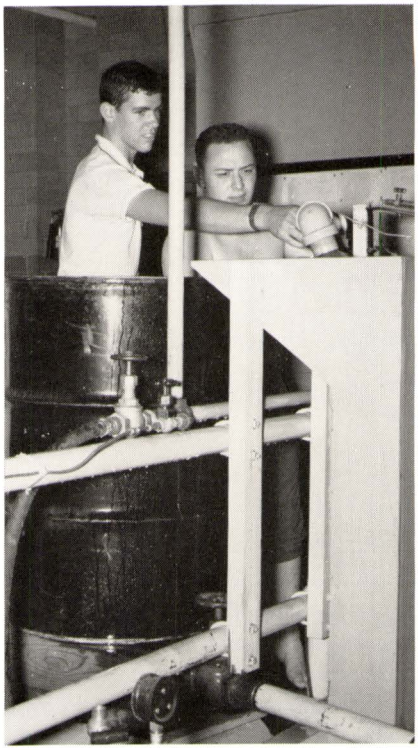
In evaluating this program, the Techni-Forum Committee of the Alumni Association has concluded that the only thing missing is more time. Even in a two-day program with 18 hours of discussions and tours, there are still many aspects of the Institute left untouched. In addition, although there is a great deal of feed-back to guidance counselors not present, the impact of the program is necessarily limited. Enlargement of the program is not practicable, however, because, by its very nature, only a small group can be successfully handled.

TECHNIQUEST

The second part of Tech's guidance program is Techniquest. Dealing directly with high school students, this six-day program is held each year late in June. Approximately 60 students, who have completed their junior year, attend this self-orientation session. The cost of the program is $75.00, which includes all expenses. The program is limited to those applicants who have some doubts about whether to choose an engineering or science career.

First the students take several carefully selected aptitude tests, administered by a psychologist, for the purpose of assisting them and their parents in determining the type of work and education for which they are best suited.

This is followed by a series of lectures, inspection trips to industries, and laboratory experiments. This part of the program is designed to give the boy, by observance and performance, an opportunity to actually come in contact with and understand engineering and science.



Techniquesters perform experiments.

Undoubtedly, this program is one of the most successful guidance-testing programs in the nation. Since its beginning in 1934, more than 1000 college graduates have been aided in selecting a career.

Thus W.P.I. is meeting the challenge posed so often today by our teen-age generation: Where do I go? What do I do? Admittedly both programs are small in their impact upon the millions of high school students. It would be unrealistic for Tech to attempt the solving of this nation-wide problem. Nevertheless, the college is committed to meeting her responsibilities in our society. In these two programs, Tech not only makes a contribution to the solving of the guidance problem, but also accumulates information which is useful to other groups willing to aid America's youth and science and engineering education.

After taking the data, Techniquesters learn that the job is only half done. Shown above are students calculating.

Campus Review

Class of '68

The opening of the Centennial Year brought Tech a record high enrollment. A 20 percent rise over last year's freshman class constitutes the bulk of the increase. The record class numbers 379, or 56 more than the previous high admitted in 1961.

In addition to outnumbering its predecessors, the Class of 1968 achieved a mathematical Scholastic Aptitude Test score average of 673, 18 points higher than last year. The verbal average was 558, five points higher than in 1963.

Arriving on Sunday, September 13, the Class of '68 quickly checked into rooms in Daniels, Morgan and Sanford Riley Halls. Monday, Tuesday, and Wednesday were taken up with a myriad of orientation activities. Registration on Monday morning was followed by tours of the campus and talks by representatives of the various Tech clubs, activities, and fraternities. On Tuesday evening, the president's reception was held in Morgan Hall.

Although classes began at 8:00 a.m. on Thursday, September 17, the sophomore-freshman rivalry made its now traditional start at a flag-raising ceremony at dawn. Needless to say, few upperclassmen were on hand. For the next few days, sophomores queried freshmen on Institute history, songs, and traditions. Although today's frosh soon gets wise to the game, he also sees the purpose behind the so-called "hazing" program and develops the same keen Tech spirit prevalent on the Hill for these many generations.

Faculty Symposium

The faculty continues to seek improved methods of instruction. On September 10, prior to the start of classes, a day-long symposium on education was held on campus. The program, under the direction of Prof. William R. Grogan of the Electrical Engineering Department, was designed to provide the faculty with an opportunity to discuss educational methods and philosophies.

Speakers were Dr. Otis Lancaster of Pennsylvania State University, director of the American Society of Electrical Engineering's Institute on Effective Teaching in Engineering; Dr. Claude Grant of New York University, professor of educational physiology; and Prof. Herbert W. Yankee of Tech's Department of Mechanical Engineering.

Faculty Appointments

During the summer, 11 new appointments to the faculty were announced.

Newly appointed associate professors are Dr. Wilhelm H. Eggiman and Dr. Harit V. Majmudar, both in the Department of Electrical Engineering, and Dr. Luke N. Zaccaro in the Department of Mechanical Engineering.

Dr. Eggiman did his undergraduate work at the Swiss Federal Institute of Technology in Zurich in 1954 and received his graduate degrees at Case Institute of Technology in 1959 and 1961.

Prior to his appointment he was a member of the faculty at Case and a research associate at Swiss Federal. He is the author of many technical papers.

Dr. Majmudar is a native of Baroda, India and was graduated from Banares University and the Indian Institute of Science before he came to the United States. He received a master's degree from Lehigh University in 1956 and his doctorate from Syracuse University in 1961. He was a graduate assistant at Lehigh for two years and an instructor at Syracuse for five years before joining the faculty at Carleton University, Ottawa, Ontario. Dr. Majmudar was an assistant professor at Carleton for four years. He recently completed a textbook, "Electromechanical Energy Converters," which is now in the hands of the publishers.

Dr. Zaccaro was on a National Science Foundation post-doctoral faculty fellowship at M.I.T. last year studying mathematics. He has been on the faculties of Syracuse, Georgetown University, the University of Rhode Island and Hiram College.

He received his bachelor and master's degrees from the University of Connecticut and his doctorate from Syracuse.

Appointed as assistant professors were Dr. John C. Garth in the Physics Department and John A. Mayer, Jr. and Dr. Paul Zannoni, both of the Mechanical Engineering Department.

Dr. Garth received his undergraduate degree from Princeton University and his M.S. and Ph.D. degrees from the University of Illinois. He was a research assistant at Illinois prior to Tech.

Professor Mayer joins the Tech faculty from New York State Maritime College where he was an assistant professor. He received a Bachelor of Marine Engineering in 1954 from New York Maritime and his M.S. and M.S. in Nuclear Engineering degrees from Columbia University.

Dr. Zannoni is a graduate of Pennsylvania State College and received his doctorate in Zurich in 1960. Since then he was employed by Reicheld Chemical, Inc. and Worthington Corporation as a project engineer and by General Instrument Corporation as a senior engineer. Last year he was an associate professor at Clarkson College of Technology.

New instructors on the staff are Paul G. Amazeen and John D. Sherrick of Electrical Engineering; Edmund M. Hayes of English; and Peter H. Jaynes of Economics, Government and Business.

Amazeen received his M.S. degree from Tech last June and his B.S. degree from the University of New Hampshire in 1961.

Sherrick was graduated from Clarkson Tech in 1960 and has been an assistant professor at the State University of New York from 1960-64.

Educated at Emerson College and Boston University, where he received his B.A. and M.A. degrees respectively, Hayes has taught at the University of Dayton, the University of Cincinnati, Westminster College and Youngstown University.

Jaynes was graduated from Oberlin College in 1959 and received his M.A. degree from Boston University in 1961. He was a teaching fellow and later a lecturer at B.U. before coming to W.P.I.

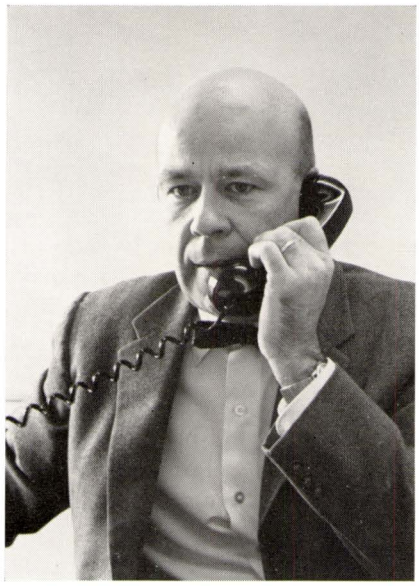
The Department of Military Science and Tactics added Capt. Felix A. Casipit, Jr. as assistant professor and M/Sgt. Melvin E. Cushing and S/Sgt. Herbert D. Mello as instructors.

Administrative Appointments

Appointed to the newly created post of Dean of Student Affairs is Martin C. Van de Visse of Pittsford, New York.

Dean Van de Visse will be in charge of admissions and student personnel at Tech.

Donald G. Downing, dean of students and admissions, is on leave of absence as he recovers from the stroke he suffered last February. Ernest W. Hollows continues as associate dean of students and admissions.



Dean Martin C. Van de Visse

For the past two years, Dean Van de Visse has been assistant dean of students at the University of Rochester. He is a graduate *cum laude* of Colgate University in 1947 and received his master's degree there in mathematics and educational administration in 1948. He taught high school math for the next four years in Lake George, New York before going into a family lumber business.

In 1960, he returned to teaching at Pittsford Central School until he joined the university staff at Rochester. He has done graduate work at Cornell University under a Shell Merit Scholarship and at Rochester and the State University of New York in Albany.

Another new addition to the administration of the Institute, Philip J. Doherty was appointed assistant director of development last June.

A lifelong resident of Massachusetts, he was graduated from Boston College and did postgraduate work at Boston University College of Public Communications.

He was a public information specialist in the Navy and has worked as a news reporter for the Waltham News Tribune and Boston University News Bureau. Prior to joining the Tech staff he was director of public information for the Massachusetts Chapter of the Arthritis and Rheumatism Foundation.

He is a member of Sigma Delta Chi, national journalism fraternity; Publicity Club of Boston; the Massachusetts Industrial Editors Association; and the American College Public Relations Association.

John C. (Buck) Stahle is still another addition to the administration at Tech in the Development Office. He is resident director of the Centennial Fund and serves as liaison between Tech and the firm of Marts & Lundy, consultants to the Institute for the Fund.

A native of Gettysburg, Pennsylvania, where he attended college for three years, Stahle graduated from West Point in 1943. From 1943–47 he was on the staff at West Point and in 1947 he joined the faculty at Valley Forge Military Academy. Stahle worked for the Sun Life Assurance Company of Canada for 10 years starting in 1949 and joined Marts & Lundy in 1959.

Prior to advising the Institute on the techniques of fund raising, he has worked with many colleges including Brown University, Lafayette College and Oberlin College.

New Math Course

A new course in actuarial science will be offered by the Department of Mathematics this year. The course will be concerned with calculating insurance risks and premiums. The lecturer for the course is Walter I. Wells, second vice president of State Mutual Life Insurance Company of America and head of its Health Insurance Division.

Dean M. Lawrence Price stated that the new course will broaden Tech's applied mathematics cur-

Continued on page 10

COLLEGE STATISTICS

ENROLLMENT AS OF OCTOBER 5, 1964

	Ch.E.	Ch.	C.E.	E.E.	Mgt. E.	Math.	M.E.	Ph.	Non-Dept.	Totals
Graduate Students	13	13	19	23			46	16	5	135
Seniors	35	11	32	88		10	70	18	1	265
Juniors	36	14	47	77	13	9	72	11		279
Sophomores	49	8	36	89	6	22	90	14		314
Freshmen		2	11	6	1	1	3	1	385	410
Totals	133	48	145	283	20	42	281	60	391	1403

SCHOLARSHIPS, 1964-1965

Class	Applications	Awards Offered	Awards Accepted	
1965	84	69	69	$ 38,950
1966	88	58	58	34,000
1967	105	73	73	49,250
1968	513	96	69	51,430
	790	296	269	$173,630

FRESHMAN CLASS STATISTICS

SCHOLASTIC APTITUDE TEST

Scores	VERBAL Total Applications	VERBAL Admitted	VERBAL Enrolled	MATHEMATICAL Total Applications	MATHEMATICAL Admitted	MATHEMATICAL Enrolled
750-800	2	2		96	86	19
700-749	30	27	6	283	245	116
650-699	121	104	39	352	236	106
600-649	193	152	62	336	172	99
550-599	275	199	90	195	45	31
500-549	326	175	94	80	7	5
450-499	245	94	59	42		
400-449	126	30	19	10		
350-399	64	8	7	2		
300-349	9			1		
250-299	4					
200-249	2					
No scores	33			33		
	1430	791	376	1430	791	376
		Average	*557*		*Average*	*673*

The 1430 applications were received from 685 schools.

ACHIEVEMENT TESTS OF ENROLLED CLASS

	English Composition	Advanced Mathematics	Physics or Chemistry
	1	20	8
	10	45	13
	17	95	33
	59	81	67
	72	58	98
	62	27	78
	57	3	38
	35		10
	12		
	2		
	49	47	31
	376	376	376
Averages	*542*	*644*	*578*

RANK IN SECONDARY SCHOOL CLASS

Tenth	Total Applications	Admitted	Enrolled
1	423	367	169
2	317	218	99
3	226	107	52
4	148	54	30
5	116	22	7
Lower half	162	14	16
Unranked	38	9	3
	1430	791	376

Average rank in class = 16.2/100

SECONDARY SCHOOL ACTIVITIES

Varsity Sports	Students Participating	Non Athletic	Students Participating
Track	77	Class Officer	40
Football	63	President 11	
Basketball	46	Student Council	59
Baseball	41	President 2	
Cross Country	38	Yearbook	66
Soccer	34	Editor 7	
Golf	20	Paper	46
Swimming	18	Editor 4	
Tennis	18	Band	71
Wrestling	12	Chorus	43
Hockey	11	Dramatics	40
Skiing	5	Debating	18
Crew	3	Orchestra	18
		Team Manager	16
	386		

Continued from page 8

riculum and will provide students with an opportunity to sample the actuarial field as an aid to choosing a career.

Wells is a graduate of the University of Toronto and a former member of the mathematics department at Acadia University in Nova Scotia.

NSF Programs

The National Science Foundation awarded W.P.I. $15,400 in grants for nine students who will conduct research in chemistry and chemical engineering during the summer of 1965. In addition, grants for another four students have been received for study during the 1965–66 college year.

On August 14, Master of Natural Science degrees were presented to 21 teachers upon completion of a two-year program of study in mathematics, chemistry, and biology. This program, sponsored by the NSF, is designed to strengthen the teaching of science at the secondary school level.

Thirty-eight finished the courses in the Summer Institute for graduate study of college teachers of electrical engineering, thus accumulating credits toward advanced degrees which will be presented at a later date.

Some 42 certificates were awarded to those who attended the session for secondary and preparatory school physics teachers also held this summer. Covered in this program were the fundamentals of physics with laboratory techniques and elementary concepts of mathematics as applied in engineering and science.

Scholarship Aid

More than one-fifth of the student body will receive aid from Tech's private grants and scholarships this fall. In addition, over 40 others will receive industrial scholarships. Scholarships totaling $173,630 have been awarded to 269 students. Upperclassmen will receive $126,400 in financial aid and 67 freshmen will receive $47,230.

According to Associate Dean Ernest W. Hollows, aid to students varies from two grants of $2000 each to five exceeding $1700, and a substantial number for full tuition ($1600) to lesser amounts.

All are based on need, academic record, and contributions to student life at the college.

Coming Events - 1965

March 16, Goddard Day
Centennial Program

May 8, Centennial Parents
Day and Open House

June 11, Graduation

June 12, Reunion Day

October 16, Homecoming

Starting Salaries

Last year's graduating class, 235 strong, is now well on its way to life-long careers at record high starting salaries. The climbing pay spiral for Tech graduates has favored all departments, according to statistics released by William F. Trask, director of placement.

Of 118 job acceptances reported, the average salary per month is $597, a rise of $33 compared to last year and $48 over the 1962 figures.

Even more significant, however, is the number of June graduates who have elected to continue their education. Some 78 of last year's seniors are attending graduate schools this fall, a jump of 22 over the year before. Entering military service, either regular or reserve officer school, are 28, while 13 were undecided and 22 failed to report their plans.

Some 192 companies (approximately the same number as last year) sent representatives to visit the campus for interviews with seniors during 1963–64. They held 2898 interviews.

None of the 15 math graduates accepted employment, 12 of them indicating they will return to their books this fall at graduate schools.

Average salary of the Class...	1964 $597	1963 $564	1962 $549
Chem. Eng'g.....	598	585	555
Civil Eng'g.....	573	543	523
Elec. Eng'g.....	606	563	538
Mech. Eng'g.....	605	572	548
Chem. & Physics.	603	533	558

LBJ All the Way

In a campus poll held the first week in October, President Johnson won a landslide victory over Senator Goldwater. The margin of victory was 534 to 238 among the students. Faculty voters were three to one in favor of Johnson but since only a small proportion of the faculty voted it is difficult to determine if the plurality is indicative of the entire staff.

With respect to several questions on the ballot, less than one percent believed Goldwater had any chance of winning, 86 percent of the Goldwater backers thought southern Democrats would vote Republican, and 60 percent of the Johnson backers felt there would be a southern defection to the G.O.P.

Both Goldwater and Johnson backers believed that the Civil Rights issue played a significant role in the campaign.

Perhaps the most interesting response was to the question of whether or not Goldwater truly represents most Republican thinking. The Goldwater supporters were split down the middle as opposed to the Johnson voters, who nearly unanimously stated that Goldwater was not representative of Republican thought.

Concerning Robert Kennedy's campaign for the Senate in New York, only 16 percent of the Goldwaterites were in favor, whereas the Johnson side was evenly divided.

In the Massachusetts gubernatorial election, G.O.P. candidate Volpe was exactly tied with his opponent, Lt. Gov. Bellotti, counting only the votes of state residents.

Fraternity Awards

The General Excellence Prize and a check for $100 were presented to Sigma Phi Epsilon by Prof. Claude K. Scheifley at the opening convocation of the college year on September 17. Sig Ep also takes possession of the President's Trophy for the next year.

Top honors in scholarship went to Alpha Tau Omega, with Alpha Epsilon Pi in second place. Sig Ep also won recognition as the fraternity which most improved its scholarship average in the 1963–64 college year.

Scholarship standings indicate that six of the 10 I.F.C. member fraternities were equal to or above the W.P.I. all-college average. This is the first time in many years that this has occurred at the Institute. It marks an important trend similar to that of the country-wide fraternity scholarship picture of last year, when for the second year in a row, more than half of all fraternity chapters were above the all-men's averages.

Parents Day

Freshman Parents Day was held on November 7, the last football weekend of the season. Over 1000 parents and friends attended the coffee hour in the morning, luncheon, and the football game.

Dean Martin C. Van de Visse welcomed the parents at 10 a.m. and Associate Dean Ernest W. Hollows, chairman of the Freshman Advisory Council, explained the Institute's guidance program. The parents then visited their sons' advisers.

At the luncheon, President Storke addressed the parents and discussed the Centennial Year and Tech's plans for the future. Following the football game the parents returned to Morgan Hall for light refreshments.

A highlight of the weekend was the dedication of the new scoreboard, given by the Society of Families, during the halftime of the football game. George N. Lemmon, Jr. and Henry G. Galebach, co-chairmen of the Society, formally presented the $2500 scoreboard to the Institute. President Storke responded for W.P.I.

Assemblies

Gordon D. Hall, lecturer on extremism, addressed the student body on October 15 in Alden Memorial Auditorium.

He noted that the Communist Party had recently formed a front group called Progressive Labor, its object being to promote travel to east Europe and Cuba.

With respect to the radical right, Hall stated that the best example is the John Birch Society, which has flagrantly displayed its radical tendencies in vicious attacks on the late President Kennedy and former President Eisenhower.

"A characteristic of right wing extremist groups is that they love their country passionately, but completely misunderstand Democracy. They do not trust the voters.

"Whereas left wing groups claim they trust the common people and are really fighting for their best interests. However, the country (run by capitalists) cannot be trusted."

To achieve their ends, Hall said, right and left wings both employ similar methods which make a mockery of Democracy.

Space Programs Discussed

"The pattern in the developing space programs of East and West has been that the Russians do it first then the Americans do it better," said Dr. Willy Ley, authority on the development of rocketry and space travel. Dr. Ley's address was delivered on October 22 in Alden Memorial before a capacity crowd.

Dr. Ley continued, "I am not too unhappy with this pattern because the glory of having done it first is shortlived. Doing it better is what counts."

He further stated that a similar situation exists as far as manned exploration is concerned. "The Russians have put three men in orbit compared to our single manned flights, but the rocket which they have used is inferior to the present Saturn V rocket being tested by the U.S."

In closing, Dr. Ley promised that "the coming 15 years will be the most interesting in your life and probably the most interesting in the Twentieth Century."

Vietnamese War

An insight into the problems of South Vietnam was gained by Tech students when Dr. Tran Van Choung, former Vietnamese ambassador, addressed an assembly on November 19. Dr. Choung had been a leading statesman in this southeast Asia republic until he resigned to protest the Diem regime's policies. Adding to his travails was his break with his daughter, Madame Nu, long-time power in the Diem government.

In his talk, Dr. Choung traced the history of the Communist-led attack on his country and stated that "should South Vietnam fall, the line of western defense in the Pacific will be pushed back to Hawaii."

Terrorism and the planned assassination of key provincial and town officials have been the Viet Cong method. In the year before the war began, Dr. Choung said, 4000 village headmen and chiefs were assassinated. The countryside is leaderless and thus the people follow the course of least resistance—cooperation with the Communists.

"Slowly accelerated bombing of key North Vietnamese military targets is the major policy shift that must be made if southeast Asia is to remain in the free world," said Dr. Choung.

Varsity Review

Football

With the season completed, Tech finds her football fortunes at a low ebb. Having lost the first five games, Coach Pritchard decided to shake up the starting team in an effort to find that elusive winning combination. As a result, Tech upset the Coast Guard Academy on October 24, winning by a score of 13–0. Against traditional rival R.P.I., Tech rolled to a 34–8 win, thus prolonging the Trojans losing streak to 35 games.

In the first game of the season, against Bowdoin College, last year's state of Maine champions, the Engineers went down to defeat, 38–13. Some of the reasons behind this defeat can be traced to the problem of pre-season injuries and illness. The team was just not in top physical shape for the game.

Against the Catamounts from the University of Vermont, the Tech gridsters fought long and hard. However, several bad breaks and a Vermont line that outweighed the team by an average of 20 pounds spelled defeat in the end. The final score was 41–6 with the highlight of the game being the dogged play by the Boynton Hillers during the third quarter when they held their opponents scoreless.

On October 10, the Middlebury Panthers, also winless up to that date, defeated Tech, 20–0. The opposition led the Engineers in every category except fumbles and intercepted passes, and outdistanced the Engineers, 223 to 73 yards.

Homecoming saw Tech lose to the Bobcats of Bates College, 12–0, in a heartbreaking game that found the Techmen stopped twice near the goal line.

The Wesleyan game was another disappointment. On a muddy, rain-soaked field, the Cardinals outplayed W.P.I., winning by an 18–0 margin.

Following the Engineers' two wins against Coast Guard and R.P.I., Tech lost a hard-fought game to highly touted Norwich University by a score of 28–8.

Standouts on the team have been Carmen DellaVecchia at guard and Bob Sinuc at defensive tackle, Mike Oliver and freshman John Korzick at quarterback, Pat Moran at end, and Ron Crump and Denny Gallant in the backfield.

The final tally:

Sept. 19	W.P.I. 13	Bowdoin 38
Sept. 26	W.P.I. 6	Vermont 41
Oct. 3	W.P.I. 0	
		Middlebury 20
Oct. 10	W.P.I. 0	Bates 12
Oct. 17	W.P.I. 0	Wesleyan 18
Oct. 24	W.P.I. 13	CGA 0
Oct. 31	W.P.I. 34	RPI 8
Nov. 7	W.P.I. 8	Norwich 28

Soccer

Sporting a 7–2–1 record, the soccer team is making up for the disappointing gridiron performance.

With eight returning lettermen and several promising freshmen, the team started the season by tying powerful Tufts University, 3–3. Next on the schedule was M.I.T., who defeated W.P.I. by a 2–1 margin. Lone scorer for Tech was Captain Kirby Holcombe.

The first win of the season came against the University of Hartford by a 4–3 score in double overtime. Holcombe proved once again to be the hero as he booted the winning goal with a penalty kick in the last 45 seconds of the second overtime.

On Homecoming week end Tech won again, beating A.I.C. 5–1. The University of Massachusetts game also proved to be a winner, as Tech shut the Redmen out, 2–0.

Against Coast Guard, the booters lost a heartbreaker by 3–2. The remainder of the schedule proved easy sailing except for the last game. Against Lowell Tech, the Engineers won by a score of 4–1 and against Assumption College by 8–0. Boston University lost 3–1.

In the final game, the booters won by 1–0 in a tight game with Clark. Freshman Ed Cannon scored the lone Tech goal.

Outstanding on the offense have been Gonzalo Trochez, Jim Viele, Denny McQuillen, and Ed Cannon, while Kirby Holcombe, Bud Watson, Joe Acker, and Ralph Rivkind have provided the defensive strength.

The tabulated scores are:

Sept. 26	W.P.I. 3	Tufts 3
Sept. 30	W.P.I. 1	M.I.T. 2
Oct. 3	W.P.I. 4	Hartford 3
Oct. 10	W.P.I. 5	A.I.C. 1
Oct. 13	W.P.I. 2	UMass. 0
Oct. 17	W.P.I. 2	CGA 3
Oct. 24	W.P.I. 4	Lowell 1
Oct. 28	W.P.I. 8	Assumption 0
Oct. 31	W.P.I. 3	Boston U. 1
Nov. 7	W.P.I. 1	Clark 0

Cross Country

The Cross Country team closed its season on October 31 in a tri-meet against Williams and Coast Guard. The harriers defeated the Ephmen but lost to Coast Guard. Cary Palulis ran his usual excellent race winning with a time of 20 minutes and 42 seconds, just nine seconds off the Tech course record set last year by Dave Dunsky of

Northeastern. Palulis holds the Institute record.

Despite a losing record for the season of four wins and six losses, prospects for next year are excellent. Freshman Palulis along with John Kelley and Jack Lipsey have had a fine season. Depth is provided with freshman Frank Barton, Dave Williamson and Dave Vermilya. With six freshmen, three sophomores and one junior making up the top 10 runners, the team has a bright outlook in the years ahead.

Basketball

Coach Charlie McNulty expects his newest edition to be improved over last year's team, which won five of its 19 games.

The Engineers' biggest loss was the graduation of Dave Helming, who led Tech in both scoring and rebounding. He averaged 13.4 points and 12.2 rebounds per game.

However, Coach McNulty is hopeful that the experience the other players have gained will make up for the loss of Helming.

Four starters from last year's team are back. They are Captain Dave LaRue, Bill Nims, Larry Penoncello and Don Lutz. LaRue, the lone senior on the team, will handle one corner, while Nims will be center, and Penoncello and Lutz guards.

Two freshmen are battling for the other forward position. Kevin Sullivan had the edge in early practice, but Jeff Shaw can't be counted out of the competition for the post.

"We still lack a rugged rebounder like Helming, though," the Coach said.

Another problem for the Tech coach could be depth, as Ray Rogers has been slowed by illness, while Gary Willis will be out much of the season because of a broken leg.

However, Coach McNulty is hopeful that those promoted from the junior varsity will help out. They are Doug Bobseine, Alan Jankot and Jim Lawson. Lawson is six-feet, seven inches, and once he gains experience could be a big help to the Engineers.

"We lost a flock of close ones last year," Coach McNulty said. "With the experience our young players gained, we could pull some of them out this winter."

The results for the games played up to presstime are:

Dec. 3	W.P.I. 69	Brandeis	64
Dec. 5	W.P.I. 75	Bowdoin	76
Dec. 8	W.P.I. 78	Lowell Tech	67
Dec. 12	W.P.I. 58	Wesleyan	70
Dec. 16	W.P.I. 55	Boston U.	86
Dec. 18	W.P.I. 62	Hartford	64

Swimming

The Engineers could be hard pressed to equal last year's record of three victories in eight meets. They have lost freestyle ace Bob Rounds by graduation and diver Jeff Heywood, who left school. Rounds set three school records during the 1963–64 season: 1:58.3 in the 200-yard freestyle, 2:24.3 in the 200-yard individual medley, and 49.4 seconds in the 100-yard freestyle.

Jim Nystrom, who established a new Tech standard of 6:33.2 in the 500-yard freestyle, heads the returning swimmers, including potential point winners Captain Phil Giantris in the individual medley, Bill Rieger and Elliot Whipple in the freestyle, John Stumpp in backstroke, and Curtis Carlson and Lawrence Gooch in breaststroke.

Frank Grant, coaching Tech swimmers for the 36th season, is hopeful that the Engineers will receive help from freshmen Doug Ferry, Neil Durkee, Curtis Ritter, Paul Eichamer and Richard Andrews. Ferry and Durkee are freestyle swimmers, Ritter and Eichamer backstrokers and Andrews a diver.

The results for the meets held up to presstime:

Dec. 8	W.P.I. 39	Trinity	55
Dec. 12	W.P.I. 66	Norwich	28
Dec. 17	W.P.I. 29	Tufts	66

Wrestling

Last season Tech's matmen had a 6–4–1 record, and Coach Ray Scott expects that the Engineers will do about as well this season.

Heading the returnees is Russ Trask, who had a 7–1 record in dual matches and finished second in the 177-pound class at the New England Championship tournament. Ron Tata finished third in the 167-pound class.

Chief loss is Bob Drean, who had a 7–2 record in dual matches and came in third in the 157-class in the new England title competition.

The results for the matches held up to presstime:

Dec. 4	W.P.I. 20	Hartford	8
Dec. 9	W.P.I. 16	M.I.T.	17
Dec. 12	W.P.I. 14	R.P.I.	16
Dec. 16	W.P.I. 19	U.R.I.	11

Hockey

Last season Tech's icemen won nine, tied one and lost only four. They were runners-up in the Worcester College Hockey League.

The Engineers' first line of last year has returned, including Bill Baker, who had 26 goals and 16 assists.

Also on the list of returnees from that fine team are Steve Boraks, who delivered 12 goals and 10 assists, and Roland Bouchard, who contributed five goals and 13 assists.

The results for the games played up to presstime:

Dec. 4	W.P.I. 2	UConn	9
Dec. 9	W.P.I. 2	New Haven	0
Dec. 16	W.P.I. 4	Dean Jr.	0
Dec. 18	W.P.I. 3	Dennison U.	1

Dr. Goddard Honored

Honors continue to fall upon Dr. Robert H. Goddard, '08, the rocket and space pioneer. Recently it was announced that Dr. Goddard has been posthumously named 1964 winner of the Daniel Guggenheim Medal. This award was established in 1927 for the promotion of aeronautics and was first awarded to Orville Wright in 1929. The medal is one of the oldest and most highly esteemed of those given in recognition of the flight sciences.

Dr. Goddard is the first Guggenheim medalist whose work was almost entirely outside the field of aeronautics. He is the 36th recipient. Mrs. Esther C. Goddard of Worcester, Dr. Goddard's widow, will accept the award at the Aviation and Space Conference of the American Society of Mechanical Engineers to be held March 14–18, 1965 at Los Angeles.

The full extent of Dr. Goddard's work is indicated by the generally recognized assumption that it is virtually impossible to design, construct or launch a rocket without making use of ideas or devices covered by Goddard rocket patents, for the use of which the Army, Navy, Air Force and NASA jointly awarded his estate $1 million in 1960.

The U.S. Government also has duly recognized Dr. Goddard by honoring him with an eight-cent air mail commemorative stamp. The design was formally unveiled by Postmaster General John A. Gronouski at Clark University on September 24. The first-day-of-issue for public sale was held on October 5 in Roswell, New Mexico, where Dr. Goddard performed most of his test flights in the 1930's and early 1940's.

Further honoring Dr. Goddard, Clark University has designated its proposed new library as a national academic memorial to her long-time faculty member. The library, to cost $5.4 million, will house all of Dr. Goddard's papers and memorabilia. Announcement of Mrs. Goddard's gift was made by Clark President Howard B. Jefferson at a luncheon meeting of the National Space Club on September 15 in Washington, D.C.

The new library is being designed by the internationally known architect John M. Johansen of New Canaan, Connecticut. Although no construction schedule has been set, it is hoped it will be completed by 1968.

CORPORATE AND MATCHING GIFTS

Matching Gifts Received Since June 18, 1964

Aetna Life Affiliated Companies
Air Reduction Company, Inc.
Cabot Corporation
Chrysler Corporation
Connecticut General Life Insurance Company
Corning Glass Works Foundation
Ebasco Services, Inc.
Esso Education Foundation
General Electric Foundation
Hooker Charitable Foundation, Inc.
International Business Machines Corporation
International Telephone and Telegraph Corporation
Norton Company
Olin Mathieson Charitable Trust
Phelps Dodge Foundation
Scott Paper Company Foundation
The Singer Company
United Illuminating Company

Corporate Gifts Received Since June 4, 1964

American Cyanamid Company
The Babcock & Wilcox Company
Coghlin's, Inc.
Coppus Engineering Corporation
Crompton & Knowles Corporation
Eastman Kodak Company
Edgerton, Germeshausen & Grier, Inc.
The Fafnir Bearing Company
The General Electric Foundation
General Motors Corporation
International Business Machines Corporation
Jeppson Memorial Fund
The Otto Konigslow Manufacturing Company
The Mechanics National Bank of Worcester
George J. Meyer Foundation, Inc.
Microwave Diodes
Monsanto Company
National Blank Book Company
National Radio Institute
Ostrow Electric Company
Parke, Davis & Company
Pratt & Whitney Division of United Aircraft Corporation.
Rex Chainbelt, Inc.
Seder Associates Foundation, Inc.
Thomas Smith Company
The Seth Sprague Educational and Charitable Foundation
Linde Division of Union Carbide Corporation
United States Rubber Company
Western Electric Fund
R. H. White Construction Company, Inc.
Wyman-Gordon Company

Completed Careers

James Forrest Howe, '99

James Forrest Howe, born January 2, 1878 at Manchester, New Hampshire; died October 27, 1964 at Worcester, Massachusetts.

Upon graduation Howe began a 46-year career with American Steel & Wire Company of Worcester. In 1906 he received a professional degree from W.P.I.

When he retired from American Steel & Wire he was chief wire rope engineer and a noted authority in his field, holding more than a score of patents.

He become affiliated with G. L. Brownell Company from 1946–50 and then joined Reed & Prince Manufacturing Company until 1962.

Howe's designs contributed to construction of suspension bridges, including a threaded wire sleeve first used in the San Francisco-Oakland Bridge. He was the author of more than 50 articles on wire rope and delivered papers on the subject before many engineering societies.

A 32nd degree Mason, Howe was a member of many professional, church and civic associations.

He leaves two daughters, Mrs. Elizabeth H. Alvord and Mrs. Flora H. Bryant, wife of the late Roger H. Bryant, '20; a brother, Perry S. Howe; five grandchildren and seven great-grandchildren.

Harry Elihu Scott, '99

Harry Elihu Scott, born September 11, 1875 at Great Barrington, Massachusetts; died September 22, 1964 at Westfield, Massachusetts.

After graduation and a short period with a local contractor, Scott became associated with the Brown Hoisting and Conveying Machinery Company, Cleveland. Except for two short intervals, he remained at Brown Hoisting until 1927. From 1912 until he left the company he was in charge of crane design. During this period he was sent to Stone Mountain, Georgia, where he aided the noted sculptor, Gutzum Borglum.

He was associated with Thew Shovel Company from 1927–32, when he purchased a farm in Petersburg, New York. In 1942 he joined Blaw-Knox Company, retiring in 1949.

In 1947 he was awarded the James F. Lincoln Arc Welding Foundation Prize in the nation-wide "Design for Progress" competition.

After his formal retirement Scott moved to Westfield, where he continued to work as a consulting engineer.

He leaves his wife, Mrs. Bessie S. Scott; five daughters, Mrs. Carl A. Wagner, Mrs. Max B. Laven, Mrs. Jack Mehring, Miss Sarah E. Scott, and Mrs. Charles E. Moors; 14 grandchildren and nine great-grandchildren. His son, Leonard H. Scott, '29, died in 1952.

Thomas William Geary, '03

Thomas William Geary, born January 28, 1881 at Worcester, Massachusetts; died August 12, 1964 at Somerville, New Jersey.

Geary joined the American Telephone & Telegraph Company's Long Lines Department in 1903 and remained with AT & T until retirement in 1946. From 1912 until 1946 he was with the engineering department of the Long Lines Department in New York City.

He is survived by a son, Thomas W. Geary, Jr.

Alexander Clarke Clogher, '05

Alexander Clarke Clogher, born January 4, 1883 at Hinsdale, Massachusetts; died November 13, 1964 at Englewood, New Jersey.

After joining Electric Bond & Share Company in 1909, Clogher served as a hydraulic engineer in various capacities and in 1933 became a consulting engineer with Ebasco Services, Inc. for hydroelectric and civil engineering projects. Since World War II, his assignments included consulting work in Chile, Greece, Haiti, Japan, Turkey, Cuba, Australia and Yugoslavia. He retired in 1958.

He leaves his wife, Mrs. Louise C. Clogher; two sons, Robert A. and Peter Clogher; a daughter, Mrs. Barbara C. Woodriff; and two grandchildren.

Ralph Preston Clarkson, '08

Ralph Preston Clarkson, born September 19, 1886 at Fall River, Massachusetts; died October 2, 1964 at Milford, Connecticut.

Clarkson has had a long and varied career as a prominent government leader, inventor, sportsman, engineer, journalist, author, attorney, educator, printer, humanitarian and patron of the arts.

Upon graduation he joined the faculty of the University of Vermont and in 1910 moved to Washington, D.C. as an examiner of patents in the U.S. Patent Office. In 1912 he was appointed Ivan Curry Professor of Engineering at Acadia University in Nova Scotia. During this period he became interested in what today is known as the Bay of Fundy Hydro-Electric project. He devised and patented a water turbine capable of harnessing the Bay of Fundy tides and was awaiting word of the passage of necessary legislation when the Province capital, Halifax, was blown up by a munitions explosion.

Clarkson then opened a consulting office in New York City and became active in radio and early television development. His book, "The Hysterical Background of Radio," was published in 1927.

In 1930 he became chief engineer of J. H. McCormick Company and was responsible for the first installation of air-conditioning equipment on railroads.

He moved to Milford in 1934 and continued work as a patent attorney for The Rails Company. He also published, with his wife, "The Herb Journals" and reprinted many rare garden books of the 17th Century.

During the '40's, Clarkson was active in civic politics and served as chairman of the Milford Town Council under the first town manager form of government.

In 1952 he gave the Rossetta E. Clarkson Memorial Collection of Herbals and Rare Books to the Sterling Library at Yale.

During the Korean War, he designed valves for jet pilot suits.

He was involved in numerous civic projects, associations and charities.

He is survived by his daughter, Miss Eleanor P. Clarkson; and a brother, Alfred R. Clarkson.

Raymond Lee Witham, '08

Raymond Lee Witham, born April 13, 1882 at Lisbon Falls, Maine; died October 13, 1964 at Mountain Lakes, New Jersey.

Prior to entering Tech, Witham received his A.B. degree from Bates College in 1903. After graduation from Tech he became an assistant instructor at Purdue University and received a master's degree there in 1910.

He returned to Tech as a faculty member in 1911.

In 1915 he joined Westinghouse Electric Corporation as a designer and in 1918

began a 28-year career with Sperry Gyroscope Company of Brooklyn, New York. He retired as head of the electrical engineering department in 1946 and joined the faculty of Newark College of Engineering as a special lecturer. From 1951–55 he was an associate professor of electrical engineering at Polytechnic Institute of Brooklyn.

He was a life member of the AIEE, as well as a member of the ASEE, Eta Kappa Nu, and a registered professional engineer in New York State since 1924.

He leaves his widow, Mrs. Marion T. Witham; a son, W. Tasker Witham; three daughters, Mrs. Louis Shuey, Mrs. Harry Higgins, and Mrs. George Robertson.

Harold Wilder Smith, '09

Harold Wilder Smith, born November 26, 1883 at Spencer, Massachusetts; died July 29, 1964 at Worcester, Massachusetts.

Upon graduation, Smith began a lifelong association with Rockwood Sprinkler Company. Starting with the New York office as an engineer he rose to sales engineer. In 1939 he came to the company's Worcester headquarters as chief sprinkler engineer. He retired in 1953 as assistant general manager of engineering.

He leaves his widow, Mrs. Gertrude G. Smith; two brothers, Roy N. and Clifford G. Smith; two sisters, Mrs. Gail Favour and Mrs. Philip M. Longley; and several nieces and nephews.

Arthur Schubert Kloss, '12

Arthur Schubert Kloss, born February 12, 1887 at Millbury, Massachusetts; died September 3, 1964 at Wilmington, Delaware.

Upon graduation, Kloss joined the Hercules Powder Company of Wilmington, where he worked until retirement in 1952. He was former manager of the Georgia Naval Stores Operations of the company and in 1939 was transferred to the Operating Department of the Wilmington Naval Stores office.

His marriage to Miss Regina H. Wilson took place in 1920. They had a daughter, Anne, and a son, John.

Robert Garfield Putnam, '12

Robert Garfield Putnam, born November 20, 1886 at Spencer, Massachusetts; died July 14, 1964 at Danbury, Connecticut.

Dr. Putnam received a master's degree from the University of Pittsburgh in 1921 and a Ph.D. degree from the University of Chicago in 1924.

Teaching physics at Newton (Mass.) Technical High School was Dr. Putnam's first position. In 1915 he took a job as a test engineer with Westinghouse Electric Corporation, which proved to be his only non-teaching post, with the exception of two years with Westchester County after his retirement.

In 1924 he began a 28-year career with New York University in its department of mathematics. He retired as full professor in 1952.

In later years he was visiting professor of math at LaSalle College from 1955–58 and a member of the math department at Bard College from 1958–61.

Survivors include a daughter, Mrs. F. Dwight Johnson; two sons, Robert A. and Harry R. Putnam; and four grandchildren.

Paul Crowell Howes, '14

Paul Crowell Howes, born September 27, 1891 at New Bedford, Massachusetts; died August 29, 1964 at New Bedford, Massachusetts.

During World War I, Howes served with the U.S. Army in France and later with the occupation forces in Germany.

He retired in 1952 as president of the Central Lumber and Supply Company in New Bedford.

Survivors are his widow, Mrs. Helen D. Howes; a son, Davis C. Howes; and two grandchildren.

Joel Lincoln Manson, '16

Joel Lincoln Manson, born August 30, 1894 at Scituate, Massachusetts; died August 25, 1964 at Pompano Beach, Florida.

After graduation, Manson worked for the Wheeling Steel Company before enlisting in the Air Service. Selected for special training at M.I.T., he was commissioned a second lieutenant and served in France as chief engineering officer for the 186th Aero Squadron and after the war with the Army of Occupation in Germany.

He joined the American Steel & Wire Company in 1919 and served first at Worcester and then New Haven. He was senior wire rope engineer at the time of his retirement in 1959. An authority on wire rope, he appeared as a witness in numerous legal proceedings.

He was author of the "Wire Rope Engineering Handbook," published in 1940.

He is survived by his wife, Mrs. Eilene P. Manson; a daughter, Mrs. Hyde Buller; a son, Richard L. Manson; a sister, Mrs. Paul Esenberg; and six grandchildren.

Alan Drummond McKerrow, '16

Alan Drummond McKerrow, born July 10, 1892 at Boston, Massachusetts; died September 26, 1964 at Rutland, Massachusetts.

During World War I, McKerrow served in the U.S. Army Signal Corps. He was promoted from private through first lieutenant. In 1919 he started with New England Power Company and in 1922 became manager of the paper and rubber mill section in Westinghouse Electric Corporation's Boston plant. From 1926–33 he was manager of the branch office of Line Material Company in Boston and then became vice president and treasurer of Celcure Corporation of America. He went into his own business as a commission agent in 1936 and in 1959 started the Alan D. McKerrow Company, Inc.

He leaves his widow, Mrs. Pearl T. McKerrow; a son, Alan H. McKerrow, '42; a daughter, Mrs. Constance Crosby, wife of Frank A. Crosby, Jr., '40; a sister, Mrs. Marjorie Crain; and six grandchildren.

Robert Abram Radom, '19

Robert Abram Radom, born May 2, 1895 at Bloomfield, Connecticut; died August 31, 1964 at Old Saybrook, Connecticut.

Radom was graduated from Trinity College in 1920 and until his recent retirement was a research physicist at Wesleyan University.

He leaves his wife, Mrs. Anna C. Radom; a daughter, Mrs. Joseph Hansen; a brother, Dr. Myron Radom; and a granddaughter.

Harold Frederick Mossberg, '20

Harold Frederick Mossberg, born February 20, 1897 at Fitchburg, Massachusetts; died October 8, 1964 at New Haven, Connecticut.

Having learned much of the art of gunmaking from his father, Mossberg devoted a lifetime to the design and manufacture of firearms. As early as 1907, and with his brother Iver ('15), he began the manufacture of a "novelty" four-shot, 22 cal. pistol. In 1919 Mossberg entered into partnership with his father and brother to found O. F. Mossberg & Sons, Inc. During that time the famous Brownie four-shot pistol was developed and first produced. Mossberg became vice president and secretary in 1926 and president in 1945. In 1959 he was elected chairman of the board. The firm is a nationally known manufacturer of firearms.

He is survived by his wife, Mrs. Hazel B. Mossberg; a daughter, Mrs. Phyllis Palm; a sister, Mrs. Raymond R. Sawin; and two granddaughters.

Robert Milton Peterson, '20

Robert Milton Peterson, born May 16, 1898 at Worcester, Massachusetts; died March 15, 1964.

Peterson spent most of his career with American Telephone & Telegraph Company's Long Lines Department. He was a staff assistant until 1947, when he became supervisor of cable projects and staff supervisor.

He was married to Miss Nina E. Sinnicks in 1925, who survives him. They had two children, Sally F. and Robert M. Peterson.

Leland Francis Stone, '20

Leland Francis Stone, born July 19, 1899 at Otter River, Massachusetts; died July 29, 1964 at New York, New York.

Stone began his career with General Electric Company in 1920 as a test man in Schenectady, New York. From 1922 until 1937 he was an engineer in the New York City office. In 1938 he was placed in charge of applications and installations for the Newark, New Jersey office. He was due to retire two days after his death.

Stone was a former vice-president of the American Institute of Electrical Engineers.

Surviving are his widow, Mrs. Elsie B. Stone; two sons, David W. and Jerrold R. Stone; a daughter, Mrs. Jean S. Wade; three sisters, Mrs. Rachel Jones, Mrs. Margaret Hamilton, and Mrs. Elizabeth May; a brother, R. Lincoln Stone, '33; and eight grandchildren.

Kenneth Randolph Perry, '21

Kenneth Randolph Perry, born February 10, 1898 at Worcester, Massachusetts; died October 23, 1964 at Bremerton, Washington.

Perry joined the testing department of General Electric Company's Schenectady plant in 1921 and in 1923 went into his father's real estate and mortgage business.

From 1934–39 he was a salesman representing several companies in the Worcester area.

He had worked for the Puget Sound Naval Shipyard in Washington since 1939, first in engineering and later in administration as the industrial relations coordinator. He retired in 1959.

He leaves his widow, Mrs. Dorothy T. Perry; two sons, Bruce T. and Lincoln R. Perry; three cousins and four grandchildren. Dean P. Amidon, '49, is his nephew.

Thomas James Maitland, '22

Thomas James Maitland, born September 12, 1900 at Clinton, Massachusetts; died October 12, 1964 at Tenafly, New Jersey.

Maitland devoted much of his career to cable construction and maintenance methods for long distance telephone cables. He started with American Telephone & Telegraph Company in 1922. In 1923 he resigned to join the faculty at the University of New Hampshire. In 1926 he rejoined AT & T, where he remained until his death. Since 1954 he had been supervising engineer, headquarters staff, of the Long Lines Department in New York City.

He was active in the National Association of Corrosion Engineers for many years and at his death was chairman of the Utilities Symposium for the 21st Annual NACE conference.

He is survived by his wife, Mrs. Evadne C. Maitland; a daughter, Mrs. William R. Letcher; a brother, William G. Maitland, '28; and three grandchildren.

Milton Chesley Fox, '25

Milton Chesley Fox, born November 15, 1900 at Worcester, Massachusetts; died August 2, 1964 at Hammondsport, New York.

Fox spent most of his career as an airplane engine designer. First with Curtiss Aeroplane and Motor Company, Inc. from 1926–31, then with Wright Aeronautical Corporation until 1935. He went with Fairchild Engine & Airplane Corporation until 1940, at which time he joined the Aeroproducts Division of General Motors Corporation.

He had retired earlier this year from the Lycoming Division of Avco Corporation, where he had worked since 1953, in research and development on rocket engine design.

Besides his father, LeBaron S. Fox, he leaves his wife, Mrs. Nina R. Fox; two daughters, Mrs. Norma Reed and Mrs. Joanne Oaks; a brother, Russell E. Fox; a sister, Mrs. Phyllis Brooks; and five grandchildren.

Newton Gilman Loud, '25

Newton Gilman Loud, born October 9, 1902 at Weymouth, Massachusetts; died October 5, 1964 at Wellesley Hills, Massachusetts.

Prior to starting his career as a patent attorney, Loud worked for the General Electric Company. In 1927 he worked for the U.S. Patent Office as a patent examiner and in 1928 began a career with the United Shoe Machinery Company as a patent attorney. Since 1961 he had been a registered representative with Harris, Upham & Company in Boston.

He is survived by his widow, Mrs. Helen L. Loud; two brothers, Frank E. and Norman D. Loud; and a sister, Mrs. Marion Rubolino.

Everett Richard Gordon, '32

Everett Richard Gordon, born September 1, 1909 at Worcester, Massachusetts; died October 1, 1964 at Boston, Massachusetts.

Gordon was president of the Gordon Chemical Corporation and Gordon Realty, Inc. and treasurer of Hammond Plastics, Inc., all of Worcester.

After graduation, he taught night high school and in 1936 worked for the New England Novelty Company. Later he became general manager of Hammond Plastics.

Gordon was a charter member of the American Society of Plastic Engineers and past president of the B'nai B'rith Lodge of Plainfield, New Jersey. He was active in community and civic affairs and in 1961 he and his brother were cited as Yeshiva Men of the Year.

He leaves his widow, Mrs. Fannie S. Gordon; two brothers, Carl and Edward Gordon; two sisters, Mrs. Jennie Ruderman and Mrs. Blanche Miller; and many nieces and nephews.

Nathan Shuman, '35

Nathan Shuman, born December 25, 1912 at Chelsea, Massachusetts; died July 23, 1964 at Boston, Massachusetts.

Shuman was the owner of the Fellsway Wrecking Company of Cambridge and Canton, Massachusetts, a firm with which he had been associated since 1934.

He leaves his wife, Mrs. Fay B. Shuman; a son, Howard Shuman; his mother, Mrs. Ida Shuman; and a sister, Mrs. Theresa Mazel.

Everett William Johansson, '55

Everett William Johansson, born April 8, 1933 at Rockland, Maine; died August 8, 1964 at North Adams, Massachusetts.

After receiving a master's degree from W.P.I. in 1957, Johansson began working with Sprague Electric Company. At the time of his death he was section head of magnetics in the Special Products Division.

Survivors are his parents, Mr. and Mrs. Carl Johansson; his widow, Mrs. Elvy J. Johansson; a daughter, Miss Nancy E. Johansson; and two sons, Glenn E. and Brian D. Johansson.

Ronald Theodore Armata, '63

Ronald Theodore Armata, born August 10, 1941 at Chicopee, Massachusetts; died July 30, 1964 at Warren, Massachusetts.

Armata was employed in the Engineering Laboratory of A. G. Spalding & Brothers, Inc., where he was also a member of the Golf Association.

He leaves his parents, Mr. and Mrs. Theodore F. Armata; a brother, Lawrence Armata; a sister, Miss Felicia Armata; and his paternal grandmother, Mrs. Julia Armata.

Your Class and Others

1908

The following news items were contributed by *Donald D. Simonds*, class secretary:

"*Herbert P. Sawtell* met with an unfortunate accident in a fall down stairs. This resulted in a back injury, causing nerve paralysis, but it is hoped that this condition will right itself during his stay at Worcester Memorial Hospital.

"On September 24 at Clark University there were ceremonies in connection with the unveiling of the original sketch of the Memorial Airmail Stamp honoring our classmate, Dr. *Robert H. Goddard*. Among the speakers were the Postmaster General and Mrs. Goddard, who is an honorary member of the Class of 1908. Your Class President, *H. Clayton Kendall*, and Secretary felt honored in receiving invitations to this memorable occasion.

"At Roswell, New Mexico on October 5, the Post Office Department released the issue of this commemorative stamp. A quantity of envelopes bearing Bob's picture and the Goddard stamp were mailed from Worcester, postmarked Worcester Tech, 1865–1965.

"We of the Class of 1908 are proud that this illustrious son of Worcester Tech was just one of us. We shall always remember Bob as a modest, sincere friend, and time cannot tarnish our revered memory."

1912

On September 9 we received this message from Mr. and Mrs. *Eugene H. Powers:*

"On September 9, 1964 it will be fifty years since we were married.

"We are deeply grateful for the opportunity we have had to live and share all that life has given us. Above all we are most thankful for the friendships it has been our good fortune to make with you and the other dear ones no longer with us. Friendships that have made our lives really worth living.

"We sincerely hope that we have your best wishes, just as you have ours, for a comfortable and contented future.

'Gene and Elsa Powers"

1914

Malcolm D. Campbell has been retired as a biology teacher from the Dorchester High School, Boston, since 1956. He is a former president of the New England Biological Association and the National Association of Biology Teachers.

1920

Walter Smith, a retired hospital executive who now lives in Whitinsville, Massachusetts, was the speaker for a Rotary Club meeting in Uxbridge in September. For 14 years he was deputy director of Quincy (Mass.) Hospital.

1922

Nearly 40 years of service preceded *Lester S. Eastman's* retirement from Norton Company this fall. He joined Norton in 1925 and had been the district sales supervisor in Philadelphia since 1945.

1924

Donald B. Wilson, who returned from Luxembourg last year after helping to open a new plant for Bay State Abrasive Products Company, has become assistant to the president of that firm.

1925

Word came in November of the retirement of Rev. *M. McKarl Nielsen*, who now lives in Nokomis, Florida.

1926

On September 1, *Walter F. Ames* completed his 37-year career with Michigan Bell Telephone Company. He had been general supplies superintendent at the Plymouth plant since 1960. He and his wife will move to southern California.

1928

Dwight E. Jones explains that E. D. Jones Corporation is now Jones Division of Beloit Corporation. Dwight is vice president of the division. A W.P.I. trustee, he is also chairman of the Pittsfield (Mass.) Sewer Commission, which has undertaken the largest public works program in the city's history.

1933

New England Power Company advanced *Albert H. Ensor* of Shrewsbury, Massachusetts to superintendent of meters and communications in September. He moves to this position from that of assistant superintendent of meters.

1934

According to the October issue of the New England Electric System's magazine, *Howard E. Stockwell* has been named executive assistant for the New England Power Company in Boston. . . *Edward D. Chase* came to Tech in mid-November with Army Col. Edward J. Ribb to discuss the roles of the military and civilian personnel in the Army Corps of Engineers. They spoke to civil engineering and ROTC students as a part of the Centennial observance. Ed Chase is civilian assistant chief of the New England Engineering Division.

1935

Joseph R. Sigda, formerly manager of special products, is now manager of new products at Air Preheater Company, Wellsville, New York. . . Brig. Gen. *William J. Samborski* received the Army Commendation Medal at a banquet in his honor on October 10. General Samborski had retired on September 22 after 32 years' service. He was commander of the 26th (Yankee) Infantry Division Support Command of the Massachusetts National Guard. Bill's professional career is still with Norton Company.

1938

John G. Despo has been moved by U.S. Steel Corporation to Pittsburgh, where he is assistant chief engineer of wire operations. His former office was in Donora, Pennsylvania. . . *Robert B. Keith*, an industrial engineer, has also been transferred to Pittsburgh by U.S. Steel. He was previously at Waukegan, Illinois. Both men were with the American Steel & Wire Division as superintendents of engineering and maintenance in their separate locations.

1940

Robert G. Newton became associated with Hinkel & Company, Inc. as a sales engineer after service with Atwood & Morrill Company. . . *Frank J. Delany* joined Gyrodyne Company of America, Inc. this fall. He is administrative assistant to the vice president of engineering. The Long Island firm manufactures the DASH unmanned helicopters used by the U.S. Navy.

1941

Cmdr. *James C. Ferguson* was designated flag secretary for the Naval Air Force, Atlantic Fleet at the Norfolk (Va.) Naval Air Station in early fall. He attended the Naval War College previous to his new assignment. . . In October *Kenneth I. Meyer* accepted a position as manufacturing engineer with the Chandler

Evans Corporation of West Hartford, Connecticut. . . Norden Division of United Aircraft Corporation announced in September the promotion of *John V. Quinn* to manager of component and subsystem assembly in the operation department. He has been with Norden since 1960.

1942

James D. Houlihan was speaker at a women's club meeting in November explaining the value of home games and their development. He is director of game development at the Milton Bradley Company of Springfield, Massachusetts. . . *Earle B. Quist*, a registered representative of Paine, Webber, Jackson & Curtis in the Springfield, Massachusetts office, was named to the staff in September.

1943

Dr. *George P. Scott* and his family are situated for the 1964–65 academic year at Assuit University, Egypt. He obtained a year's leave of absence from the University of South Dakota, where he is a professor of chemistry. The family will tour Europe before they return home next year.

1944

Ralph C. Allen, Jr. came north to accept the post of manufacturing control manager of Computer Control Company in Framingham, Massachusetts after having served with a Florida concern. . . *Wallace A. Underwood* began a new association this fall as manager of new product development at the Bradley-Sun Division of American Can Company, Union, New Jersey. . . Lt. Col. *Richard T. Brown* retired from the U.S. Air Force on September 16 after 22 years of service. His assignment had been commander of the weather unit at Reese AFB, Texas. He and the family are settling in Eugene, Oregon, where he will be a stock and commodity broker. . . *Lee G. Cordier, Jr.*, who joined Campbell Soup Company in September 1963, was appointed manager of facilities at its plant in Sacramento. The promotion involves no relocation, as the Cordiers have been in Sacramento since 1959.

1945

Robert E. Scott of Manufacturers Mutual Fire Insurance Company has been promoted to regional vice president and transferred from Philadelphia, where he was district manager, to Pittsburgh. . . *William P. Densmore*, director of engineering and construction services, was one of two Norton Company men to address the 11th Annual New England Area Industrial Management Conference in October. President Storke of W.P.I. was the keynote speaker at this meeting.

1946

George E. Comstock III, former chief engineer of Potter Instrument Company, is director of research and development at Friden, Inc., San Leandro, California.

1946B

Dr. *Peter B. Myers*, who was previously with Martin Marietta Corporation in Baltimore, is serving as director of research at Bunker-Ramo Corporation in Canoga Park, California. . . A technical coordinator for Scott Paper Company, *Edmund S. Oshetsky* has been relocated to Philadelphia from Everett, Washington. . . Bliss-Rockwood Division of E. W. Bliss Company (formerly Rockwood Sprinkler Company) announced in late September the appointment of *John P. Gagliardo* as chief engineer. He was formerly supervisor of fire protection engineering.

1946D

Richard F. Propst, recipient of two General Electric Company awards, recently capped his career with a promotion to manager of product planning and marketing research for GE's distribution transformer department. Winner of a GE managerial award last year, he was honored in January 1964 with the Cordiner Award, the company's highest achievement award. . . Earlier this year the Catalin Corporation of America sent

John C. Meade to California as western sales manager for the Resin & Chemical Division using Catalin's Paramount plant as headquarters. The Meades' sixth child and third son, Edward Griffin, was born on July 15, 1963.

1947

Dr. *Edward T. George* is now president of the three-year-old Connecticut Scientific Center, New Haven. The firm is designed to "solve sticky technological problems" through the talent services of industrial design, computer service, and development.

1948

Married: Thomas H. Wyllie, Jr. and Miss Dean Walker of Danville, Virginia. He is with Ebasco Services, Inc. in Roxboro, North Carolina.

1949

After a time with Standard Oil of New Jersey, *Leonard W. Fish* has taken a position as manager of program development at the Institute of Gas Technology in Chicago. . . *William A. Julian* left New Jersey and Chemsol, Inc. to join the building and development firm of Harris-Julian, Inc. in Arlington, Virginia. . . Arthur Venneri Company transferred construction manager *Robert H. Turcott* from Denver to Westfield, New Jersey. . . *Bernard J. Kawecki* is the resident manager of a new office in Arlington, Virginia opened in September by Raymond Engineering Lab, Inc. of Middletown, Connecticut.

1950

Stanley P. Carlson has left Bay State Abrasive Products Company to open his own business, Crafts by Inga, at his home in Holden, Massachusetts. . . Dr. *Donald W. Dodge* of Dupont Company was made research manager of the film department at the Circleville (Ohio) Research and Development Lab. He was promoted from a post at the Yerkes Research Lab in Buffalo. . . *Arthur W. Joyce, Jr.* was also transferred by Dupont. He has been at the Savannah River Plant and now is a technical representative in Wilmington, Delaware.

1951

Air Force Capt. *Edward A. Kacmarcik* is stationed at McChord AFB in Tacoma, Washington and serves as senior air surveillance officer. . . *Roderic C. Lancey*, formerly of Monsanto Company in St. Louis, is now a corporate planner at International Minerals & Chemical Corporation in Skokie, Illinois. . . *Paul E. Thomas* (MS), who has been associated with technical developments and marketing of "Teflon" products in all but one year of his 13-year career, was pomoted in October to manager of "Teflon" finishes sales. He was advanced from product planning supervisor.

1952

Born: To Mr. and Mrs. *Elliott W. Lewis*, their fifth child and fourth daughter, Patrice. He has recently taken a new position as Los Angeles district manager of Joy Manufacturing Company.

James O. Sullivan was assigned as assistant resident manager of NASA programs at the Rocketdyne Division of North American Aviation, Inc. in Canoga Park, California. His previous assignment was at the Air Force Office of Pratt & Whitney Aircraft.

1953

Lt. Cmdr. *Henry K. Burger* is working on his second year at the U.S. Naval Air Station at Point Mugu, California. . . Late October brought the announcement that *Donald R. Campbell* had been appointed project director in the research and engineering division for the XM30 and XM40 aircraft armament systems at the Springfield (Mass.) Armory. The newspaper account says that he will be responsible for the over-all planning, direction and control on all phases of effort on the advanced air weapons.

1954

Married: Robert F. Niro and Miss Jacqueline A. Abretti of Milford, Massachusetts, October 17, 1964. Bob is employed by Consolidated Electrodynamics Corporation in Bridgeport, Connecticut, where the couple is residing.

Gregory P. Arvantely left RCA in New Jersey for a post as staff engineer at I.B.M. Corporation in Owego, New York. . . Dr. *Richard W. Lindquist* began the academic year as research associate professor at the University of Texas. He finished in June at Adelphi College, where he was assistant professor. . . Hamilton Standard, with which he has worked since graduation, transferred *Richard D. Kirk* to Tullahoma, Tennessee as an engineering representative at Arnold Engineering & Development Center. He and the family will remain there for a six-month period.

1955

Correction: In the September-October issue of The Journal we erred in reporting the marriage of Prof. *Hartley T. Grandin, Jr.* and Miss A. Diane Smith. The couple are engaged and plan a summer wedding.

Paul W. Brown, Jr. left Wyman-Gordon Company to become associated with Granger Contracting Company, Inc. in Worcester. . . Sprague Electric Company of North Adams, Massachusetts has sent *James S. Mathews* to the New York City office as a sales engineer. . . After gaining experience at Boston Woven Hose & Rubber, *Walter D. Towner, Jr.* moves to the position of product manager of belting at H. K. Porter Company, Inc. in Pittsburgh. . . *Donald F. Zwiers* takes a step forward to assistant chief engineer at Fiberite Corporation in Winona, Minnesota. Prior to this he was a maintenance engineer at an Illinois concern. . . The announcement of I.B.M. Corporation's promotion of *Earl M. Bloom, Jr.* to advisory engineer in processing systems came to us in October.

1956

William P. Peterson has a new post as marketing staff engineer at the ITT Re-

Shhh! **Enginuity at work!**

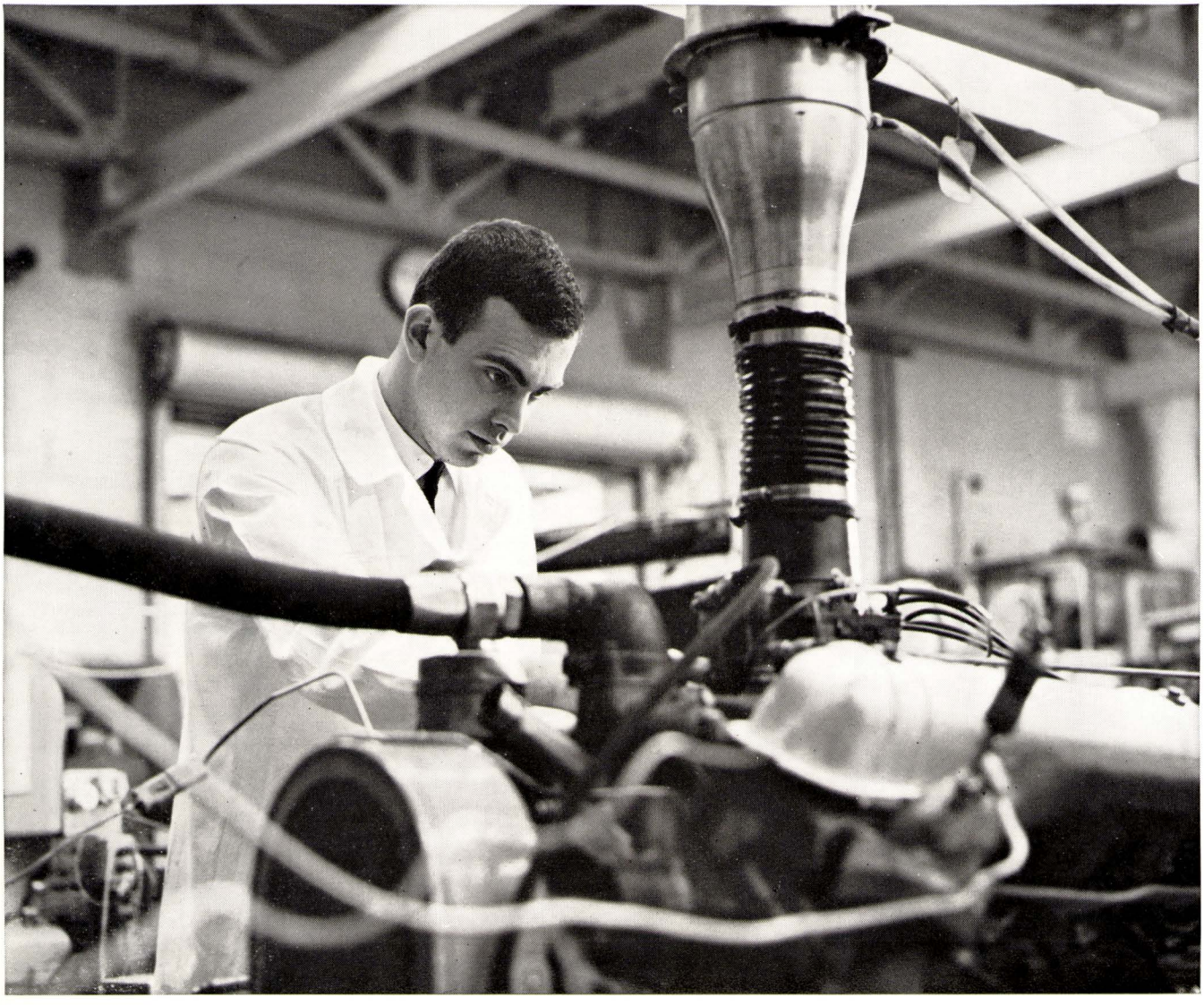
That's Bill Emrich immersed in his work behind that Lincoln engine. He's testing new oil additive formulations, designed to make new engines produce to their potential. Yet, whatever he develops has to meet the needs of older engine models, too. You might say it's a matter of enginuity.

Bill uses several test engines: among these are a Labeco one-cylinder, a Caterpillar one-cylinder and special Lincoln and Oldsmobile engines. He tests oil additives and formulations for sludge, rust, wear and reaction to high-temperatures under severe operating conditions. His findings will help car owners to get greater mileage between oil changes, longer engine life. A most important project. Yet, Bill is only 24 years old. Just last year, he came to American Oil and is now working for Amoco Chemicals, a sister company. Bill graduated from the University of Illinois with a B.S. degree in mechanical engineering.

The need for young professional people in positions of responsibility and creativity is great. Bill happens to be an automotive engineer, but he still might be working for us had he chosen a different field—mathematics, physics, chemistry. A variety of opportunities exist here at American Oil Company.

For information, write to J. H. Strange, American Oil Company, P.O. Box 431, Whiting, Indiana.

AMERICAN OIL COMPANY AMERICAN



search Institute in Chicago. He moved from Indianapolis and General Motors Corporation. . . *Robert W. Matchett* was named manager of industrial specialty papers with the establishment of that department this fall at Strathmore Paper Company of West Springfield, Massachusetts. . . In September *Paul A. Cnossen* was named by Norton Company to serve as machine research engineer, responsible for all phases of machine tool research in the Machine Tool Division.

1957

Born: To Mr. and Mrs. *William C. Rogler, Jr.*, their third child and second daughter, on July 16, 1964. Bill, a group leader in research and development, is with the Packaging Division of Monsanto Company.

Ford Motor Company sent *Leo R. Toomajian, Jr.* to the Lorain (Ohio) Assembly Plant as vehicle resident engineer after service at Dearborn, Michigan. . . Sprague Electric Company's *Robert R. Purple*, former assistant manager of the Sprague Development Center in Vandalia, Ohio, has moved to Maryland to supervise the construction of the new Washington Development Center. Bob has been named manager of the new operation, which is part of the company's Filter Division. . . *Richard F. Bis* presented a paper at the Autumn Meeting of the American Physical Society at Chicago in October.

1958

Married: Dr. *Sherman K. Poultney* and Miss Gaylord Mount of West Allenhurst, New Jersey, December 1964.

A Stone & Webster Engineering Corporation engineer, *Frank F. Chin* is now temporarily stationed at Mount Storm, West Virginia. . . *Robert H. MacGillivray* has joined General Electric Company as a senior field engineer. He is a temporary resident of Vallejo, California. . . *Howard B. Pritz* is both a student and an instructor in the Engineering Mechanics Department of Ohio State University.

1959

Married: Lee H. Courtemanche and Miss Margaret M. Smith of Auburn, New York, November 26, 1964. Lee, a candidate for a master's degree at Syracuse University, is with Gould Pumps, Inc., Seneca Falls, New York.

Born: To Mr. and Mrs. *Roger E. Miller*, their first child and son, Walton Edward, on September 8, 1964. Roger is with the reliability engineering section of Radiation, Inc., Melbourne, Florida. He is also attending evening school at Brevard Engineering College in Melbourne for a master's degree in operations research.

First Lt. *David A. Evensen*, who entered the Army in August, has completed the Fort Gordon officer course. . . Rev. *John H. Britt, Jr.*, who was ordained in June, has received his first permanent assignment as curate of the Immaculate Heart of Mary Church in Winchendon, Massachusetts. . . *David H. Treadwell, Jr.* left his position with Maddox & Hopkins of Silver Spring, Maryland in June and now works for Fay, Spofford & Thorndike of Boston as a civil engineer.

1960

Henry W. Brandt has left General Dynamics Corporation and San Diego for the Boeing Company in New Orleans. . . *Ronald F. Pokraka*, now of Dudley, Massachusetts, has taken a post as sales engineer with George J. Meyer Manufacturing Company in Worcester. Ron had been in New Jersey and Connecticut for several years. . . First Lt. *Thomas A. Poole* is still at Fort Leonard Wood and is now a company commander. . . *Thomas C. Waage*, formerly of Uncle Sam's Army, works for Electronic Associates, Inc. in Long Branch, New Jersey as a quality control engineer. . . *Robert M. Wallace*, who received his A.B. degree in Russian from UMass in 1963, is a lecturer in linguistics at Indiana University's Intensive Language Center. . . First Lt. *Robert C. Bearse* has completed the basic course at the Army Ordnance Center, Aberdeen Proving Ground. . . *Armand P. Ferro's* new assignment at General Electric Company's Advanced Technology Labs in Schenectady was announced in October. He had spent two years in the Army prior to his present position and received his master's degree from Syracuse University in 1962 as a member of the GE Honors Program. . . *Myron H. Smith* is with the Monsanto Company as a chemical engineer in Springfield, Massachusetts.

1961

Born: To Mr. and Mrs. *Paul E. Nordborg*, their first child and daughter, Kristina Louise, on October 21, 1964. Paul is a co-author of a "Letter to the Editor" which appeared in the July 1964 issue of the "Proceedings of the IEEE."

Andrew M. Beaudoin, after his release from the Army, accepted a post as a chemist at Astra Pharmaceutical Products, Inc. in Worcester. . . Having completed requirements for a doctor's degree at Tech, *Harold A. Christopher* went to

work for General Electric Company's Advanced Technology Labs in Schenectady. . . *Alfred L. Dunklee* is on a leave of absence from Cornell University to work as a research engineer at North American Aviation, Inc. in Torrance, California. . . Combustion Engineering, Inc. had employed *Roger E. Faulk* at Troy, New York until recently, when he was transferred to Windsor, Connecticut. . . Dr. *Joseph W. Little* (MS) is a lawyer with Sutherland, Ashill & Brennan in Atlanta, Georgia. . . *Wayne P. Marsh* has become a self-employed manufacturers' agent in Utica, New York after leaving the U.S. Department of Agriculture. . . *Thomas E. Postma* is located in Milwaukee, where he is an electrical engineer with General Motors Corporation's AC Spark Plug Division. . . Previously in the Army, *Donald J. Schulz* has become general manager of National Metal Finishing Company in West Springfield, Massachusetts. . . Lt. (j.g.) *Norbert F. Toczko* of the Coast Guard is now at the U.S. Custom House in New York City after serving aboard the USCGC *Firebush*. . . *Frank A. Verprauskus* is a master's degree candidate at Purdue University's Krannert Graduate School of Industrial Administration. . . Lt. *Bradford S. Cushing* finished the officers' course at Fort Gordon in September. . . *Charles E. Wilkes* received his Ph.D. degree in October from Princeton University. He has accepted a position with B. F. Goodrich Company in Brecksville, Ohio as a research chemist. He and his wife and two sons make their home in Akron. . . *Douglass D. Gladstone* was separated from active duty in November and he and his wife have returned to Belmont, Massachusetts. Doug is also returning to M.I.T. to complete requirements for a master's degree. . . *Martin S. Gordon*, in addition to graduate study at Northeastern University, is working at Edgerton, Germeshausen & Grier at the Bedford, Massachusetts facilities. . . The U.S. Bureau of Public Roads has informed us of the appointment of *Richard J. Moore* as a highway engineer trainee at Arlington, Virginia. . . *Richard D. Souren*, now married, lives in Easton, Pennsylvania and works at the Compressor Division of Ingersoll-Rand Company in Phillipsburg, New Jersey. Dick is also enrolled at Lehigh University, where he will complete requirements for an M.B.A. degree in 1968.

1962

Married: Barry J. Dworman and Miss Bernice M. Shapiro of Worcester, October 25, 1964. Barry is an engineer for Sikorsky Aircraft in Stratford, Connecticut. . . *Bartlett D. Fowler* and Miss Dale A. Markarewicz of Newburgh, New York, October 17, 1964. Bart is an engineer in training with Eustance & Horowitz of Circleville, New York. . . *George H. Forsberg* and Miss Charlene A. Rector of Pensacola, Florida, August 22, 1964. In November George received a master's degree from Cornell University and then accepted work with Chemstrand Corporation in Pensacola.

Ralph G. Johanson has ended his Army career and began his professional career as a junior civil engineer for California's Highway Department in Los Angeles. . . Lt. *Anthony F. Szwarc* has entered the Army and will be stationed at Orleans, France. . . Having completed requirements for a master's degree at Colorado State University, *Richard F. Dominguez* is a research engineer at Shell Pipe Line Corporation in Houston. . . Lt. *Wilfred G. Harvey, Jr.* of the U.S. Air Force is with the Aircraft Repair Branch at McGuire AFB, New Jersey. . . Lt. *Edmund B. Pyle III* is serving with Uncle Sam at Fort Monmouth, New Jersey. He received a

master's degree last June from the University of Arizona. . . Assigned to the Redstone Arsenal for General Electric Company, *Ralph A. Herrick* is a design engineer. . . Lt. *Joel N. Freedman* is attending a micro-wave radio officer training course at Fort Monmouth. . . Lt. *Paul L. Westerlind*, having completed airborne training at Fort Benning, has been assigned to the Army Broadcasting and Visual Activity in Okinawa. . . First Lt. *Walker T. Thompson* was promoted to his present rank in October in Germany, where he has been serving since July 1963. . . *Adrien H. Berthiaume* began the academic year in the engineering department of Worcester Junior College as a teacher.

1963

Married: Joseph R. deBeaumont and Miss Alice M. Doherty of Worcester, October 10, 1964. Joe is with Minneapolis-Honeywell Regulator Company. . . *Michael Gerson* and Miss Ruth Moses of Worcester, September 19, 1964. *Bruce G. Goodale, Jay Kaminsky* and *Richard A. Kashnow* were ushers. Mike and Ruth are living in Bangkok. . . *Philip A. Morrissette* and Miss Diane M. Handfield of Upton, Rhode Island, October 3, 1964. Phil works for Wyman-Gordon Company in Worcester. . . *Richard L. Alling* and Miss Carina H. Padgett of Tully, New York, June 20, 1964. Dick is a bearing designer at the Torrington Company.

Born: To Lt. and Mrs. *Roland B. Kuehn*, their first child and daughter, Melissa Ann, on August 6, 1964. The family resides at the White Sands Missile Range in New Mexico.

Franco A. Baseggio is attending Columbia University in pursuit of an advanced degree. . . *Paul A. Rougeau* is located in San Bernardino, California as a junior civil engineer with the state Highway Department. . . *Gordon O. Stearns* has become affiliated with Thomas A. Edison, Inc. in Hickory, North Carolina as a branch manager. . . An interesting note was found in the hometown newspaper of Lt. *Lee J. Globerson*, now serving with the U.S. Army in Thailand. He attended the Jewish high holiday services in Bangkok at the home of the Israeli ambassador to Thailand. . . After a cross-country trip, Mr. and Mrs. *Roger C. McGee* have settled at San Mateo, California. Roger is a design engineer with Standard Oil of California in San Francisco. . . *David E. Dunklee, Jr.* accepted a position teaching physics, chemistry, general science, and mechanical drawing at Peacham (Vt.) Academy.

1964

Married: Ens. *Stephen B. Brownell* and Miss Kathleen Dunn of Middletown, Rhode Island, October 24, 1964. A graduate of the Navy OCS on October 23, Steve is now stationed at Port Hueneme, California to attend the Navy Civil Engineering School. . . *Ernest B. Mercer, Jr.* and Miss Lucinda L. Scott of Worcester, December 5, 1964. . . *Jerry R. Langer* and Miss Suzanne M. Cain of Pittsfield, Massachusetts, November 26, 1964. Jerry is in the manager trainee program at Friendly Ice Cream Corporation in Newton. He is also studying at Northeastern University. . . *John C. Ostrowski* and Miss Arleen N. Ritchie of Beverly, Massachusetts, October 11, 1964. Chicago Pneumatic Tool Company is training him at Utica, New York. . . *Anthony M. Trippi* and Miss Janet L. McCarthy of Shrewsbury, Massachusetts, June 6, 1964. Tony is beginning his career at New England Tel. & Tel. Company in Chelsea, Massachusetts. . . *David E. Monks* and Miss Nancy L. Gotha of Worcester, November 7, 1964. Dave and Nancy make their home in Rochester, New York, where he is with Eastman Kodak Company.

Born: To Mr. and Mrs. *Steven T. Churchill*, their third child and son, Peter Merritt, on August 26, 1964. Steve is with Sprague Electric Company of North Adams, Massachusetts.

Laurence F. Hull is a systems and procedures analyst at Sprague Electric Company. . . *Peter Baker* has decided upon the U.S. Public Health Service, Division of Air Pollution, Cincinnati. . . *Robert B. Bridgman* accepted an offer from the Underwriter's Laboratories, a Long Island firm. . . *Alan K. Cooper* became associated with Allied Chemical Corporation in El Segundo, California. . . *Bradley T. Gale* and *Alfred H. Hemingway, Jr.* are working for master's degrees at UMass. . . An offer from Shell Chemical Company, Deer Park, Texas has been accepted by *Ronald E. Lubowicz*. . . *Stephen A. Harvey* has taken a position with Bell Telephone Labs in Whippany, New Jersey. . . *William J. Healy, Jr.* is studying at R.P.I. as a graduate assistant. He spent the summer at the U.S. Naval Underwater Ordnance Station in Newport, Rhode Island. . . *Eugene S. Killian* has been awarded a Naval Research Fellowship of approximately $2500 for study at the UMass Chemical Engineering Graduate School. . . *David A. Helming*, back at the Hill for graduate study, is also engaged in another form of endeavor. Last season's MVP on W.P.I.'s basketball team, Dave was named coach of the Jayvee squad for 1964–65. . . *J. Paul Theroux* (MS) is working in the research department at Pratt & Whitney Aircraft, while *Albin A. Hastbacka* (MS) is with Mitre Company in Bedford, Massachusetts. . . *John F. Bradley* has secured a position with Owens-Corning Fiberglas Corporation, Ashton, Rhode Island plant. . . Lt. *Ronald J. Gemma* was commissioned following graduation from the U.S. Air Force OTS at Lackland AFB, Texas. . . On October 23, Ensigns *Glenn T. Theodore, Daniel F. Gorman, William R. Swiger, Peter J. Tancredi*, and *Stephen B. Brownell* graduated from the Navy OCS at Newport, Rhode Island. Their assignments: Glenn is serving at the Naval Air Station at Pensacola, Florida; Dan and Steve at the Civil Engineering Corps School, Port Hueneme, California; Bill aboard the USS *Long Beach*; and Pete at the Navy Training Center, Service Schools Command, Great Lakes, Illinois. . . *E. James Hanna III* was commissioned a second lieutenant following graduation from the U.S. Air Force OTS at Lackland AFB, Texas.

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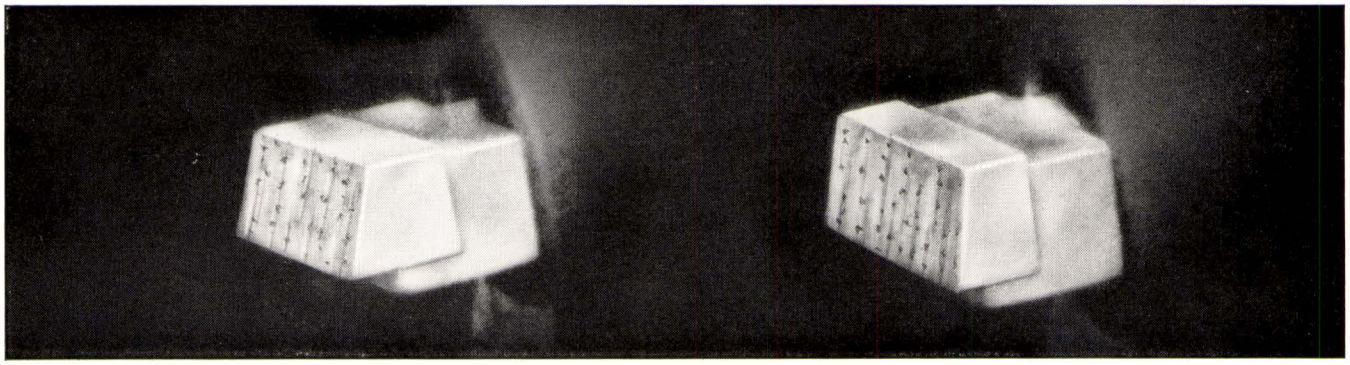

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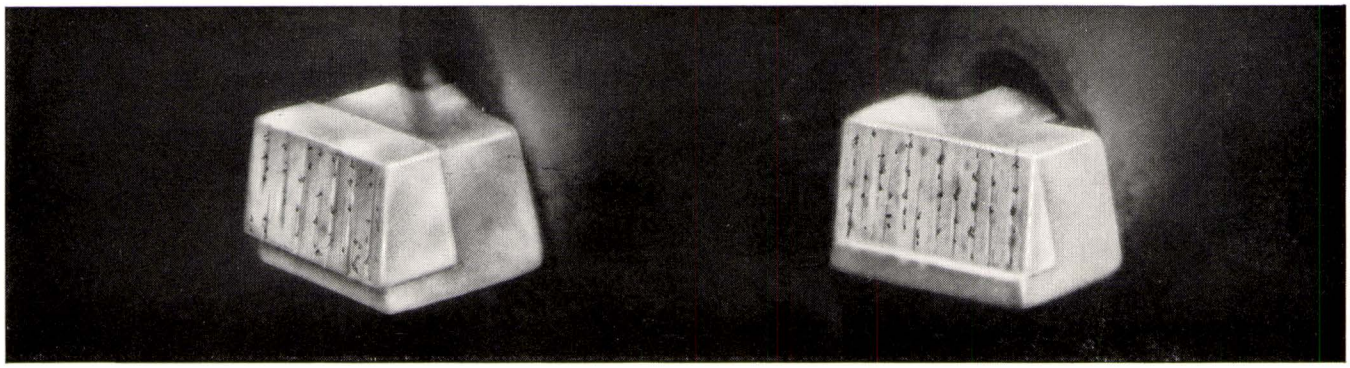

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