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Lawrence

INSTITUTE OF TECHNOLOGY

Magazine



Coping with
tornadoes: pg. 15

On-campus

Lawrence Institute of Technology Magazine

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Calendar

July 3-4

Independence Day Recess.
College Closed.

August 28

Fall term evening
baccalaureate classes begin.
Register in advance!

August 31

Fall term evening
associate classes begin.
Register in advance!

September 5

Fall term day
baccalaureate classes begin.
Register in advance!



Yamasaki scholars. Four fifth-year students in LIT's School of Architecture shared the first Yamasaki Scholarship during the spring term. From left, are Guss G. Pappas, Dean Karl H. Greimel, Thomas R. Morgan, Gary A. Kecskes, and Richard Niedzwiecki. The Scholarship is awarded by the distinguished architectural firm of Minoru Yamasaki and Associates, Troy, and is based on academic and professional achievement.



SAE winners. Herbert Hubben, right, vice president—management resources, Eaton Corp., presents a \$1,000 check for LIT's School of Engineering to William Olsen, co-chairman with Peter Lang (fourth from left) of the winning student branch display at the national SAE Congress and Exposition held in March. The display, judged best of 15 presented, also figured in the national judging for "Outstanding Student Branch of the Society for 1978." LIT has been named winner of this award for an unprecedented fourth consecutive year. There are 116 student SAE branches in the U.S., Canada and Mexico. Others who worked on the display are, from left, William Standley, president of the 1978-79 LIT student branch; Olsen, 1977-78 secretary; Paul Busch; Lang, 1977-78 vice president; and Glenn Waideo.

Students 'pick up pieces' where Pioneer leaves off

Three van loads of car parts—all the nuts and bolts, pistons, stampings, castings, forgings, electrical components and trim from a 1976 Ford Pinto and Chevrolet Chevelle—comprise an unusual gift from Pioneer Engineering and Manufacturing Company to the School for Associate Studies at Lawrence Institute of Technology.

These parts, about 4,500 per car, are considered useful "learning tools" for many of the School's engineering technology courses in four of the six associate degree programs—mechanical, electrical and electronic, and chemical technologies and industrial supervision. Parts also will be used with certain special technical and management technique courses conducted periodically by LIT's School for Associate Studies.

The Warren-based company, headed by Michael Pinto, president (his name is coincidental with the donation), disassembled the cars for comparison evaluation with two foreign cars. Under federal contract, the firm regularly conducts cost studies, energy economy studies and the like for the U.S. Department of Transportation. Pinto received an honorary degree in mechanical engineering in 1954 from LIT, which he also attended as a student.

Each part of the car is tagged and weighed for the government survey. The car parts were donated to LIT with government permission.

"We'll use the parts for demonstration and discussion in such courses as materials, manufacturing processes, inspection methods, mechanics, tool design, electronics, production control and industrial management," says F. Hal McDavid, assistant to Dr. Richard E. Michel, dean of the School for Associate Studies.

"Techniques of production and special development technologies can better be demonstrated and discussed by using visual aids. For example, if you know that there are 72 bolts of a certain size used in the Pinto, you can appreciate how many bolts per hour must be produced to make "X" number of cars each day as required by the market," McDavid adds.



F. Hal McDavid, left, assistant to the dean for associate studies and Pioneer President Michael Pinto examine one of 9,000 auto parts the firm has gifted to the College.

Faculty and staff notes

John R. Hamann, member of the LIT Corporation and president of the Detroit Edison Company, presented the commencement address for Oakland Community College June 4.

Michigan State Senator **John C. Hertel**, lecturer in the School of Arts and Science, has been named chairman of the Senate's recently formed Energy Committee.

Dr. John D. Hromi, associate professor of mechanical engineering, and **Gary Jelin**, assistant to the dean of architecture, have been appointed to the College's expanded Scholarship Committee. They join committee chairman **Dr. Jerry L. Crist**, associate professor of chemistry, and members **Ernest L. Maier**, associate professor of management; **Floyd W. Bunt**, director of high school relations; and **Paul F. Kinder**, director of student financial aid.

Leland A. Lahr, dean of the School of Business and Industrial Management, has been named to a three year term as trustee of the Detroit Metropolitan Area League-Goodwill. League-Goodwill is a United Fund agency working on behalf of disabled individuals to identify problems, help them develop new skills, and help find employment.

Dr. Richard E. Marburger, president, has been busy on the speakers circuit. May 8 he presented the keynote address at a luncheon honoring student spelling champions of a state-wide competition sponsored by the Detroit News. In April, he opened the 1978 Awards Convocation of the Detroit Science and Engineering Fair on behalf of the Engineering Society of Detroit. In June he addressed the maintenance and operations group of the Oakland County School Business Officials organization.

Rochelle Martin, Ar'76 and B of Ar'77, lecturer in architecture, presented a paper on "Built-Learning Environments" at the April conference of the Environmental and Design Research Association at the University of Arizona, Tucson.

R. Bruce McAfee and **Ernest L. Maier** presented a paper entitled "Sales and Sales Management: A Case/Simulation Approach" at the Association for Business Simulation and

Experiential Learning conference held April 12-15 in Denver, CO. Their paper described the philosophy behind and teaching experiences with their newest sales/sales management text. Both McAfee and Maier are associate professors of business and industrial management.

James O. Trew, staff assistant to the president represented LIT on the educator tour of Fort Leonard Wood, MO, April 25-27. The post is a permanent Army installation and a major training center for engineer support training within the Volunteer Army program. The educators observed the work of the facility and were apprised of the continuing educational opportunities offered at the post's Truman Education Center.

George B. Zonars, assistant professor of architecture, has opened his own architecture and interior design offices in Southfield. He joined LIT's School of Architecture faculty in 1956. He is a registered architect in the State of Michigan, and has been associated professionally with Louis G. Redstone Associates since 1963.

IMS organizes; elects officers

Officers were elected at the organizational meeting of a student chapter of the Industrial Management Society in the School of Business and Industrial Management March 16. Ronald P. Russo, IM junior from Troy, is president.

Other officers are: John Thomas, IM junior, Oak Park, vice president; Sue Nowicke, IM junior, Taylor, treasurer; and James McFall, IM freshman, Detroit, secretary. Gregory R. Cheek, assistant professor of management, is chapter sponsor.

LIT's student chapter is the second in Michigan. Western Michigan University also has a chapter.

In welcoming the new organization, Dean Leland A. Lahr said, "LIT had active industrial management clubs in the late 60's and early 70's but this is the first group to seek national membership."

On-campus

Students from 43 nations enrolled at LIT this year

Jau Cheung's family left Canton, China, his birthplace, when he was nine years old. They established residence in the British Crown Colony of Hong Kong, where Jau grew up. This year, nearly half a world away, he is a junior in mechanical engineering at Lawrence Institute of Technology and is one of 165 male and 10 female international students from 43 countries on campus—the highest international enrollment LIT has ever had. Total college enrollment is 4,754.

Jau learned about LIT as many international students do—from a high school friend in Kowloon who came to the United States and to LIT to study. His friend, Wui Mon Fong or "Larry," as Jau

calls him, received his degree in 1974 from LIT's School of Business and Industrial Management.

Like 133 of the international students studying at LIT this year, Jau holds an F-1 visa, which means he is in this country for the purpose of attending college. (There are 33 resident aliens in LIT's international group and several with other classifications.) Future education Jau is considering is attaining a master's degree in engineering in California, where his god-grandparents and an aunt and uncle live.

Meanwhile, Jau is "very pleased" with the education he is receiving at LIT and is enjoying living in the new College Housing Center. "I did not know too much about Lawrence Institute of Technology before I wrote to seek admission," he continues, "but when the College replied to me, I learned it offers the progressive and highly technological education I want." He found easy acceptance because his qualifications are high.

Stanley F. Harris, LIT's director of admissions, attributes the increase in international students to simple word of

mouth communication and a prompt response to inquiries and applications received from abroad. "In many countries, potential students learn about our College from alumni and/or friends who have returned home and established good reputations in the business and industrial fields," he says. "This is especially true in Iran, from which we have 62 students enrolled this year, and also in Lebanon, with 16 enrolled, and Nigeria with 13.

"Our increase over last year's international student enrollment is significant," he continues. "There were 120 international students here a year ago and this year's enrollment more than doubles that of three years ago."

Much of the increase in international student interest is attributed to Frank de Hesselle, LIT's director of international student affairs, who attended LIT as a student from The Netherlands. He received his first degree in mechanical engineering from LIT in 1973. Upon being graduated, he began work as foreign student advisor and an admissions counselor while also studying for his second degree in industrial management, completed in 1975.

"Because LIT has no additional out-of-state fees for matriculating students, our tuition often poses less financial burden than most public colleges," de Hesselle says. LIT's tuition is also among the lowest for private technical colleges in the nation.

"The presence of the diverse population we have from 43 nations represented on campus adds an extra dimension to our education," de Hesselle adds. "Both American and international students have a first-hand opportunity to learn about other cultures." He notes that from 90 to 95 percent of the international students complete their undergraduate studies here and return to home countries to work. Some continue post-graduate work at other colleges and universities.

The international students are enrolled in all of LIT's schools awarding baccalaureate degrees with the majority being enrolled in engineering or architecture. The only curriculum in which there is no foreign-born student this year is physics.

The other countries represented at LIT in 1977-78 are: Antigua, Bahamas, Brazil, Cameroon, Canada, Republic of China (Taiwan), Colombia, Czechoslovakia, Ecuador, Egypt, Ethiopia, Finland, Ghana, Greece, Guyana, India, Iraq, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Korea, Liberia, Pakistan, Philippines, Poland, Romania, Saudi Arabia, Spain, Syria, Thailand, Turkey, United Kingdom, U.S.S.R., Venezuela, Yugoslavia, and Zaire.



LIT international student Jau Cheung, right, quizzes Congressman William M. Brodhead following the latter's campus lecture. The Congressman discussed welfare reforms as a guest of students in classes in state and local governments.

Dedicated to The Lawrence Inst. of Technology, Detroit, Michigan

Dear Old L. I. T.

Tune Uke
G C E A

Words and Music by
H. O'REILLY CLINT

Marcia
f cresc.

VOICE
Tho' time di - vides us all We shall
mp
nev - er prove un - true, No mat - ter
what the call Our loy - al - ty we pledge to you. Rahl! Rahl! Rahl!

Copyright 1932 by The Lawrence Inst. of Technology,
Detroit, Michigan

CHORUS

Dear old L. I. T. We love the Blue and White you're
fly - ing, Thru the years to be 'Twill ev - er tell of
love un - dy - ing, And in the class or on the field We'll bring you
hon - or, vic - to - ry, All hail to thee
cresc.
Our al - ma ma - ter L. I. T. Rahl! Rahl! Rahl! T.

Dear Old L. I. T. 2

'All hail to thee, our alma mater'

LIT's 46th Commencement is over and the Class of '78 has bid farewell to college days.

"Dear Old LIT" was written for this moment and all the other moments at which the student body has the opportunity to rise in tribute.

"Russell E. Lawrence was very anxious to have a college song," writes the first secretary of the College, Genevieve Dooley, from her retirement home in Pompano Beach, FL. "He believed it would promote school spirit which proved to be true! The song was sung at all student body assemblies, graduation exercises and athletic events (which were multiple in the early days)."

"The words and music," continues H. B. Van Bussum, head of the bookstore from 1936 to 1974, "were drilled into the students at convocations, and everybody in the Day College was familiar with the song and could sing loud and lustily. Some of the fraternities made it a requirement that all pledges knew by heart the words and music and could sing it around school to entertain the other students."

Neither Mr. Van Bussum, now also retired in Sarasota, FL, nor Miss Dooley knew the composer, H. O'Reilly Clint—only that he was recommended to President Lawrence by a close friend. He composed both the words and music. Dr. Wayne H. Buell, chairman of the board, remembers that the song's adoption came during his student days and that it was "very popular" with the student body at that time. The 1932 copyright on the music and words has now expired.

"The late Mr. Clint may also have composed 'Dear Old U. of D,'" Mr. Van Bussum indicates, as he notes that "the tune and words have a lot in common." The last time the music was reprinted, Van Bussum says, was about 1949 and 400 to 500 copies are still available (with

ukulele accompaniment) in the bookstore today even though the copper plates from which they were printed seem to have disappeared from their storage place in the safe.

Earl Pellerin, first an LIT instructor and then Dean of the School of Architecture until 1974, recalls teaching the song to 80 architectural students aboard a train to the East Coast on an architectural trip to Atlanta and Washington, D.C., during the early 50's. "I took copies of the song along and led the singing to help pass the time," he said. "We sang the song the most during the first 20 years of College life," he continued, "when we had an amazing number of activities on campus."

A 1934 *Tech News* substantiates the fact of its constant use—"it was sung with spirit and pride at every basketball game, especially at national tournaments, and was required learning of all freshmen and fraternity pledges."

Tradition of "Dear Old LIT" is perpetuated only at graduation ceremonies today. Familiarize yourself with the words and music—buy a copy if you are interested at the bookstore—and rise in tribute to hail, with gusto, 'our alma mater, LIT!'

On-campus

Industry and LIT together bring construction engineering 'into its own'

Take an academic orphan, make it a bona fide member of the engineering family and you have a main stream effort that produces viable results.

This is what Detroit's Construction Industry Advisory Board and Lawrence Institute of Technology have accomplished together in the last seven years.

With private funding and help in specifying program objectives by industry members, construction engineering has become a major discipline in LIT's School of Engineering. Contributing to this effort have been the Builders Exchange of Detroit and Michigan, the Plumbing and Heating Industry of Detroit, the Associated General Contractors of America, the National Electrical Contractors Association, the Michigan Environmental Balancing Bureau and the Sheet Metal and Air Conditioning Contractors of America.

Catalyst for the academic innovation was the fact that the construction industry needed people especially trained as construction engineers and managers. Traditional civil engineering curricula seemed to be missing the mark in this regard. Together, industry and LIT have created a program that has been the first to be recognized and accredited by ECPD and currently is the largest in the country.

Since the program's start in 1969, enrollment has jumped from 103 to a current count in excess of 300. The graduating class of 1978 was 43.

"Even so," comments LIT Prof. George F. Bowden, construction engineering department chairman, "this increase of students over the seven year period is barely keeping ahead of graduate demand.

"Our graduates are entering management ranks in every possible way. They are field engineers, construction superintendents, project managers, estimators, schedulers, proprietors of their own companies, planning engineers and municipal engineers. You will find them in all facets of the industry's work—national



Jack Olmstead, CE'77, is a field engineer for R. E. Dailey Company, and is assigned to the K-Mart Corporation's World Headquarters expansion project in Troy.

and international construction, private or public utilities."

Bowden and LIT administrators believe that LIT students meet the needs of industry because industry has a strong voice in what they are learning. "It is this 'vote of confidence' by industry in hiring our graduates that keeps us constantly upgrading our program to meet the needs of prospective employers," he recognizes.

While still basically a civil engineering program, LIT's program has added the skills that qualify graduates not only to design the structures (as in civil engineering) but also to manage their construction. Bowden cites as examples new course offerings in 1977-78: *engineering cost analysis, quality control, concrete form work design and electrical systems*. These augment courses basic to heavy construction, commercial, civil, municipal, industrial and residential construction. The Advisory Committee is continually working with the LIT faculty in broadening the base of the program to include more mechanical and engineering subjects.

The teaching staff, for the most part, includes individuals currently involved or having extensive recent experience in engineering and construction management. They bring to the classroom "real life" examples of engineering and management problems. Prof. Bowden, typical of faculty, is former vice president and director of research and development of Symons Corporation. He has been at LIT for five years and has been department chairman for four.

All classes in the construction engineering program are offered both day and evening in keeping with Lawrence Institute of Technology's "total use" concept which connotes near round-the-clock programming within its facilities (classes are scheduled from 8 a.m. to 10:30 p.m. Monday through Friday). This also provides students the option to develop field work experience prior to graduation if they wish. About one-half of LIT's construction engineering students, as a result, hold full time jobs while working for their degrees. Additionally, there is greater flexibility and opportunity for work-study programs.

One example of an effective work-study program is with the Michigan State Highway Department, which annually sends interviewers to LIT to select students who have qualifications basic to job assignment as surveyors or for quality control. The Department hires these students to supplement its staff during peak highway work load times from May through November. Students can continue learning while earning through night classes if working within the geographic area of the College or can pick up their studies again in the winter quarter beginning in late November.

A further extension of LIT's ability to serve students and industry is noticed this year with the opening of the first housing unit on LIT's campus. Dr. Wayne H. Buell, chairman of the board under whom LIT's long-range planning is becoming effective, says "We can now reach out to other states and accommodate students interested in becoming construction engineers. This should also attract more interest from building contractors across the country."

"The scope and growth of our program," adds Dr. Stephen R. Davis, dean of LIT's School of Engineering, "is testimony of what can be achieved by taking construction engineering out from under its blanket coverage of civil engineering and letting it thrive as an engineering entity. The 'orphan' has joined our family and will continue to grow—thanks to the industry whose future assistance will help it mature."

On-campus

Confronting the '80's: looking ahead at college development

An interview with G. Robert Harrington, LIT vice president for development

The editor interviewed Mr. Harrington in late April to find out his attitudes on several issues concerning the future academic and physical plant development plans for the College. Mr. Harrington, a retired Michigan Bell vice president who will complete his second year at LIT in August, was optimistic, enthusiastic, and even a little eager to tackle the future.



Why doesn't tuition alone cover college expenses?

Historically, college expenses have exceeded tuitions in both the private and the public college sectors. If tuition were raised to the point that it covered all the expenses of educating students, we'd pretty much price ourselves out of the market.

Taxpayers subsidize public college students. Private colleges like Lawrence Institute of Technology, on the other hand, must seek their additional support directly from alumni, corporations, foundations, and other friends.

Providing necessary up-to-date facilities and equipment, well trained and competent faculty and the necessary support staff, utilities, building and grounds maintenance, and other amenities is increasingly expensive. LIT lacks the large endowment funds that many longer established colleges have to protect against fluctuations in the economy and unforeseen expenses. As a

result, our annual giving program is of prime importance. But, because the College makes a concentrated effort to operate as efficiently as it can, the "gap" between tuition and actual student expenses is much smaller than at most colleges.

LIT enrollment is fast approaching the 5,000 student "optimum size" that has long been discussed in the College's annual reports—even without the Business and Industrial Management Building and Student Activities Center. Have the College's short or long term development plans been redefined?

We are in the process now of redefining our development plans, but the redefining has mostly to do with timing. We are growing faster than we had anticipated, and this has caused us to take a look at when we might begin our major capital fund drive for enlarged facilities. With regard to the 5,000 student "optimum size," 5,000 is not necessarily

a cut-off point. With a new building to house the School of Business and Industrial Management, we think we could operate in the 5,500 range and still have adequate space.

With increased costs and inflation, the College's development goals seem further and further away. Will there always be a need to solicit outside funding?

It's hard to visualize a time when we would not be going outside for money to help keep the college operating. About the only way to avoid that would be to have an enormous endowment fund—a process which literally takes generations to develop. Inflation does pose a serious problem and shows no signs of abating. That again suggests that we must take a hard look at the timing of our major fundraising effort.

Over the years there have been several efforts to raise funds for the Student Activities Center. What became of those efforts?

Yes, there have been several efforts to raise funds for the Student Activities Center. In retrospect, it appears that we were simply unable to devote the necessary manpower to carry those efforts through to the point where there was enough money to construct the building. That's not to say, however, that no good came of those efforts. We now have approximately a million and a half dollars in a fund set aside specifically for the Student Activities Center.

How does the level of alumni giving at Lawrence Institute of Technology compare to that of other similar colleges?

Frankly, the level of alumni giving is not all that good. But we think we have the right combination of elements now to bring about a substantial improvement. Across the nation, alumni giving is about 18 percent for all private colleges. We now stand at 5 percent plus, but that's up from 3 percent just a couple of years ago. We must keep in mind, too, that about half of our alumni have graduated in the last ten years. There is a direct correlation between the length of time people have been out of school and their level of giving.

What do you find to be the corporate sector's attitude toward the College?

We probably visit about 200 corporations in the course of a year. We find the attitudes of corporate executives to be very positive towards LIT. They recognize excellence and they commend us for the quality of our graduates.

It's heartening, too, that many firms seek out our graduates for employment. Most students who are not already holding jobs when seniors have achieved career placement prior to commencement. Successful alumni are our "good will ambassadors."

On one visit, for example, a top level executive stated that of his 200 engineers, he'd rate the LIT graduates in the top 15 percent. And he sent us a handsome check!

With so many colleges floundering, it would seem that LIT's story—a relatively small private College with one of the lowest tuitions in the nation perking happily along and showing a modest surplus—would be a College that people should feel to be a terrific investment. Have you found this to be the case, or does the "squeaky wheel" get the grease?

In the overall, I would say that most people we call on like the way the College is managed and feel that contributing to LIT is a "terrific investment." The squeaky wheel may get the grease in some isolated situations, but over the long pull, if the College is not turning out a good product and running efficiently, it isn't going to generate a great deal of corporate support. We simply have to tell our story to more people.

With more and more large public institutions also gearing up for major development campaigns in the private sector, how can relatively small LIT ever hope to compete for major foundation and corporate monies?

It's been my experience that you can gain support from foundations and corporations if you have a good product to sell, if you tell your story, and if you ask people to give. We are a most viable and flexible educational institution and that is generally recognized and appreciated. We have a clearly defined mission—that is, we know what we want to do educationally and we systematically go about the job of doing it. We have much going for us, and I don't have any fears about our ability to compete for major foundation and corporation monies.





Dr. Edward R. Kane, president of E. I. duPont de Nemours & Co., chats informally with students following his recent address to several TAB Clubs in his capacity of Chairman of the National Advisory Council on Minorities in Engineering. He was invited to speak by Engineering Dean Stephen R. Davis.

LIT 'outreach' provides new experience for minorities

Children of a day gone by had an opportunity, walking home from school, to stand in awe at the door of the village blacksmith. They saw the smith heat a bar of iron red hot over his forge and, with brawny muscle, hammer it into horseshoe shape. When it had annealed, he fit it gently to the hoof of the waiting horse.

"This," says Dr. Oliver S. Coleman, special project administrator at Lawrence Institute of Technology, "best describes what LIT's enrichment program for minority students is all about. LIT provides the information that comes from watching someone accomplish a task, motivates the student to learn a skill, and then helps 'fit the shoes' to the individual so that he can walk the path to success."

Dr. Coleman is originator and director of a summer internship program for minorities at the Southfield College and coordinator of related Detroit public high school extra curricular clubs whose activities take place during the academic year. The objectives of both are to bring statistics in line with opportunities for minorities in business and industry.

"Minorities," he points out, "comprise 17 percent of our population. But, in engineering today, for example, only 3.6 percent of 2.3 million working engineers are from the minority population. The pattern is the same throughout industry—in the sciences, in business and the technologies. The opportunities are there. However, students must recognize the preparation needed. They must know how to awaken their individual talents and develop confidence in their ability to succeed. They need also to know that to succeed in the professions, they must have a college degree."

Lawrence Institute of Technology provides the information in a summer

career institute for 50 selected high school minority students. The public high school Technical and Business (TAB) Clubs that continue the program during the school year are a planned outgrowth. Corporate donations, foundation and government funds help make the student summer attendance possible and underwrite some of the summer costs of transportation and faculty advisorship.

Dr. Coleman acts as the intermediary with school administrators and continuously advises school sponsors. He meets often with student groups and helps coordinate their planned programs with industry.

Currently, there are nine Detroit high schools participating in the club program—all of whom will select five representatives to attend the 1978 summer program on LIT's campus beginning June 19. The high schools are: Cass Technical High

School, Central, Cooley, Mumford, Murray Wright, Northwestern, Osborne, Redford and Southeastern.

"As a result of our initial experience last summer," Dr. Coleman explains, "we will spend more time in individual and group career counseling. We want students to have more opportunities to become familiar with technical concepts and processes, manufacturing and research procedures that are observed and discussed during industrial and business tours. More time will be spent with the deans of our schools and faculty who can guide them in course selection and supportive academic enrichment experiences suitable to their career interests."

TAB encourages students to seek bachelor degrees in architecture, engineering, business and management, and the sciences. All summer field trips are coordinated with these disciplines. Students also are made aware of associate degree programs which prepare persons for responsible positions in industry and business.

Field trips planned for this summer include such organizations as Ford Engineering and Research, Chrysler's Industrial Design plant, Michigan Bell, Smith Hinchman & Grylls architectural firm, Burroughs World Headquarters (Tireman plant), the Detroit Public Schools Data Processing Center, Parke-Davis and Company, Merrill Lynch Pierce Fenner & Smith, Manufacturers National Bank and WXYZ Radio Television. Speakers from these and other major corporations will complement talks by the Deans of LIT.

"Public schools," Dr. Coleman notes as a former teacher and administrator, "are very receptive to this idea of broadening the school environment into the corporate world. Students have much to gain through on-site observations and



Dr. Oliver S. Coleman, right, LIT administrator of the TAB program, meets at Cass Technical High School with members of the student club and their sponsor, Mrs. Vickie Musson, at his right.

dialogues with craftsmen, scientists and business administrators."

The TAB Club program follows a format similar to the summer career institute. Students selected for membership in the TAB Clubs are college-bound students with high math and science aptitude.

Gloria Slater, one of two Cass Tech students in the 1977 summer career institute says, "Because of the program, I have started to think of myself and what I can do best." She was an organizer of the Cass TAB Club last fall.

John Agosta, club treasurer and a new member this year, adds, "I find the club a useful way to explore different fields of business and engineering. I think we will all know better where we can use our skills. Some of us are even learning where we can seek summer jobs to try new things."

Ninth grader Denise Waters predicts, "I will definitely stay in the club. I want to learn more about a career most suitable to my needs and I want to try my selected career."

Cass Club sponsor, Mrs. Vickie Musson, a school counselor, echoes their comments. "TAB is helping these students learn what life is all about. To help them effectively plan for their future, we, as counselors, also encourage them to be flexible in their choice of careers. We know that, for them, the 1980's are already here."

If continued corporation and foundation funding is achieved and results prove the program to be the 'forge' in accelerating qualified minority entry into the technical and business fields, it will be continued by Lawrence Institute of Technology. Detroit public schools, business, industry and LIT hope the success attained will then encourage the program's use by others.

Alumnus moves into 'space'

When rockets for the March, 1979, launch of the space shuttle begin their cross country trip from Thiokol Corporation's Utah plant to Cape Kennedy, FL, one phase of a continuous logistical problem for LIT graduate William Agnello, IM '72, will be complete. By then, as one of two traffic analysts for this national aerospace company, Agnello will have been involved for more than a year in the United States' long awaited space venture.

All facets of his education in LIT's School of Business and Industrial



Upcoming flights of the "Enterprise" are in a large part due to the logistical work of LIT alumnus William Agnello (inset). (Shuttle photo courtesy of NASA.)

Management will be brought to focus in this assignment, coupled with the experience gained on the job with Thiokol's Brigham City-based Wasatch Division.

Agnello was interviewed in Detroit in late winter when he made his first trip "back home" from the western life he has chosen for himself, his wife, Elva, and their three children.

"**Detroit is just too fast paced** for me," he commented as he summarized the week spent here leasing real estate for his company which also has the contract to produce air bag ignitors for Ford and GM. The ignitors are compact patented devices that work with rocket propellant. They inflate the protective bags on impact by signal from an electronic sensor in the front of the car.

"Engineers developing space age materials are finding many new uses for their technology," he says of the diversity that is interspersed within his major space assignment. "When new applications are found, we in traffic analysis help by seeking office space for the staff that goes along to supervise contracted projects or whatever else is required."

Agnello's job at Thiokol includes all phases of management. "To be able to communicate in writing is a most important function of my work," he says. He also acknowledges that "college math gives you an edge in getting things done quicker and I am constantly using engineering drawing in graphing my

studies like that assimilated for the rocket project."

"Budgeting," Agnello continues, "is the major part of my job." The traffic analysts at Thiokol work with all common carriers, particularly railroads in the space shuttle operation. However, they must also provide all modes of transportation for the people and household moves that accompany a project. Twelve families have already been relocated from Brigham City to Florida for the 24 months that the space shuttle program is in progress.

To transport the shuttle's rocket, a special railroad loading facility had to be constructed in Corrine, UT, 22 miles from Thiokol's desert plant. The traffic analysts also had to plan for specially-made flat cars. It takes 16 to move two boosters, (eight for each 225,000 pound rocket). Late this spring, they will conduct a practice run of rockets without live propellant to see if the transport plans are accurate and geared to the times of day when they'll least conflict with other railroad traffic. The rockets have been routed via the Union Pacific, Missouri Pacific, Southern Railroad and Florida East Coast lines.

After the first shuttle launch next March, there will be succeeding launches approximately every three months up to a maximum of seven launches. In between, rocket casings will be recovered and returned to Thiokol's plant for refueling. Then, the traffic control problem will begin again.

On-campus



Surrounded by engineering and movie equipment in LIT's combustion laboratory, (L to R) N/L Production's cameraman Tom Smart; director Verne Nobles; assistant cameraman John Marotske; and production assistant Everett Hensley prepare to film the interior intricacies of an engine for the Universal Studios' mini-series "Wheels," which appeared on NBC-TV.

NBC mini-series filmed at LIT

Like a top secret mission, a portion of the National Broadcasting Company's mini-series "Wheels" was filmed on the campus of Lawrence Institute of Technology last February. The film's release has made it possible to tell the story.

"Wheels" ran nationally for five evenings in May and starred Rock Hudson. The series is based on the novel

of the same name by Arthur Hailey.

"We needed a location that could be construed as a vehicle testing area for the film's hypothetical 'Big Four' automobile company," said Verne Nobles, director of the LIT portion of the filming. He is associated with N/L Productions of Detroit, responsible for the on-location background footage for the series. Dr. Richard E. Marburger, College president and Dr. Stephen R. Davis, dean of engineering offered the facilities of LIT's combustion laboratory following a call from Bob Sweany of the Detroit Chamber of Commerce who helped set up locations.

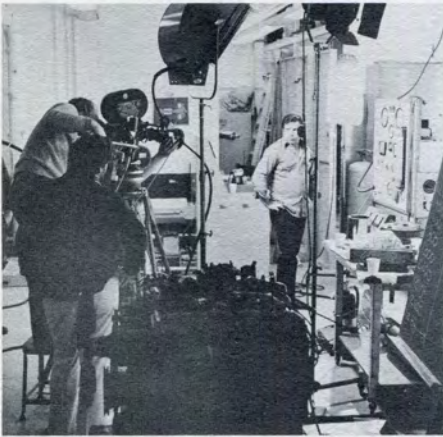
Almost all of the nearly eleven hour filming day at LIT was spent taking very close shots of equipment, gauges, quivering dials, and people's hands disassembling automotive engine

components—a montage that appeared briefly in the first segment of the series according to the Universal Studio's Robert O'Neil, Hollywood producer for "Wheels."

In the final product, Hollywood magic and the cutting room editor had spliced the scenes together in a way that attributed the lab work to some of the series' big name actors who were in reality working in sunny California.

Walter Schoneck, LIT laboratory technician responsible for gathering and, in many cases, operating the myriad equipment filmed, shrugged philosophically: "Even if it's for only a few seconds, how many can say 'my hands' were on national TV with Rock Hudson?"

Not many, we'd wager. Hollywood just doesn't visit Lawrence Institute of Technology all that often.



Upper right: LIT engineering lab technician Walter Schoneck (foreground L to R) calibrates engine wear while assistant cameraman John Marotske looks on. Closeups of Schoneck's work were spliced into "Wheels" footage so that it appeared to be done by one of the series' characters.

Above, Schoneck (right) flicks switches and operates gauges that appeared as background footage for the "Wheels" mini-series. Nearly eleven hours of filming were done on campus. (Photos by W. G. Bizon)

On-campus

Dean Michel sees associate programs filling special needs

Second in a series on LIT deans

Where there is a need, you meet that need.

This is the philosophy of Dr. Richard E. Michel, whose quiet determination keeps the School for Associate Studies ahead of the changing times. Keen awareness of students' desire for personal success, corporate need for technical expertise, and purposeful integration of on-going work and study programs place the School of which he is Dean in the forefront of continuing education opportunities.

"There is increasing economic and program competition as well as growing cooperation with community colleges today," Dr. Michel notes. "One strength of our program lies in the positive alternate method of education we can provide for full-time employees that both increases their knowledge and enhances their work experience. We can also satisfy part-time students intent on applying skills while learning. Even though historically our students have started college after several years of work experience, we now find increasing numbers of high school students coming directly to us because they are motivated toward the technical skills and find our method of education attractive."

To meet the combined needs, LIT's School for Associate Studies operates on a semester basis for students seeking associate degrees in data processing or mechanical, electrical and electronic, chemical, building construction and industrial supervision technologies. Classes are held on Tuesday and Thursday evenings from 6:30 to 11:30 p.m.

Additionally, special courses are programmed for industries seeking special help. Examples are a recent course designed for lumber dealers which emphasized blueprinting and cost estimating; another (for which more than 100 persons registered) highlighting the



National Electrical Code changes; and cooperative courses with the Michigan Department of Labor to train new employees for Detroit Edge Tool and Pioneer Engineering.

"These special courses have a positive effect on the School as a whole," Dean Michel observes. "As we bring more people on campus on a special basis, we not only make industry trainees more aware of the College but also introduce many of them to opportunities for upgrading their own education and earning a degree."

"We also are seeing more and more people in our courses who already hold degrees in technical and non-technical fields but who are working in technical positions," he continues. "Their companies send them to us to acquire background necessary to their jobs."

Dr. Michel characteristically compliments the staff who assist him and the students whom they serve. "Many of our faculty," he says, "have long tenure with us. Each has been selected because of good teaching abilities and also because he or she remains active in a chosen

professional field. We capitalize on bringing current information to our students because we feel it is particularly important for them to understand what is going on in the real world. At the same time, our students are well motivated and make good contacts in the fields in which they are studying."

Student advice and counsel are a significant part of both the Dean's and his staff's job. "We probably do more social work during the evening program than many social organizations," he smiles. Students tend to seek the advice of both the Dean and professors in their fields of study to determine their own merits for advancement, the courses which will help them most and companies which need the skills for which they are most adept.

Long range planning for the School, which the Dean effects with the help of his assistant, F. Hal McDavid, is moving ahead on several fronts. One innovation is formation of industry advisory committees for each program. Already organized is a committee of building industry leaders who will make curriculum

suggestions, provide support in student selection and help in placement of graduates. This committee also has provided equipment helpful in teaching modern technological courses.

An additional important action is the School's recent investigation for professional accreditation for its mechanical, electrical and electronic technology programs by the Engineers Council for Professional Development. The School for Associate Studies is already accredited by the North Central Association of Colleges and Schools.

A major opportunity for the School is in the rapidly expanding field of continuing education. The experience of the School for Associate Studies with working students in general and with the particular needs associated with the School's current special courses makes it an ideal center to coordinate cooperative educational activities on campus.

The confidence with which each step is accomplished in the School is also a reflection of the man who leads it. A native of Saginaw, Dean Michel received his B.S. degree in physics at Michigan State University in 1950. His ROTC training projected his entry into the Korean conflict in 1951-52, when he served as a platoon leader on the infantry front lines, was wounded, and thereafter ran the post exchange in Taegu until completing his service as a first lieutenant.

He returned to MSU to earn his M.S. in physics in 1953 and his Ph.D. in 1956. His first industry job was with RCA Research Laboratories in Princeton, NJ, where he was a member of the technical staff for six years. He returned to the Detroit area as senior research physicist for GM's Research Labs in Warren, and, after teaching at LIT for two years part-time, was named Dean in 1973. In addition to his broad administrative duties, he continues to teach physics at least two terms each year.

Dean Michel is an active member of the Engineering Society of Detroit, is chairman of its engineering activities committee and started the Scientists Council which utilizes physicists, chemists and biologists in the area as speakers at the Society's educational meetings. He also is the secretary of the Detroit Section of the Optical Society, which meets regularly at LIT, and he was instrumental in bringing the Detroit Metric Council service office to campus.

His wife, Martha, works full time at the Birmingham Public Library. Daughter Jane is working in Grand Rapids and daughter Carol, a senior at Seaholm High School, was a Congressional page in Washington, D.C. a summer ago. She looks forward to law studies. Son Paul is in eighth grade.



Reynolds winner. A \$300 check is accepted by Jean H. LaMarche, left, regional winner of the Reynolds Aluminum Prize, from Theodore E. Kurz, (right) president of the Detroit Chapter of AIA. At center is Dean Karl H. Greimel. LaMarche designed a hypothetical school playground for the annual competition, which was established in 1961 to encourage creativity in architectural design.



Performance characteristics of different engines are being tested on the School of Engineering's new Clayton dynamometer. Its arrival on campus was heralded by Dr. Richard E. Marburger, president and Dr. Stephen R. Davis, dean of engineering. The power absorber is a gift of Clayton Manufacturing Co., El Monte, CA.

Architecture professor promotes tornado safety

A "big wind" has blown into the life of James J. Abernethy, associate professor in LIT's School of Architecture.

Not only has it produced a fascinating elective class for fourth and fifth year architectural students called *Life Hazard Design*, but also it has been the catalyst for several publications by Abernethy on tornado safety and building design.

"You might say," he comments, "that I have been adopted by the National Weather Service." He is a frequent speaker at NWS tornado symposiums, including one hosted recently by LIT's School of Architecture. He is an investigator on tornado damage teams when severe weather occurs in the midwest and has consulted on the development of more damage-resistant building construction. He has just been asked by NWS to provide a slide presentation and commentary on tornado safety in residences and cartoon graphics that will give safety tips for protecting children.

Building design and urban planning are Abernethy's fields of study and became the entree to his subsequent avocation on tornado protection (as well as protection from other severe forms of weather). He earned his bachelor of architecture degree in 1964 at the University of Detroit and his master of science degree in urban planning at Wayne State University in 1970.

"While teaching at U. of D. five years ago, I was employed under federal contract to provide design assistance to architects on public buildings in a six-state Midwestern area. I frequently found extensive concern about tornado safety," Abernethy relates.

"Shortly thereafter, I was part of a faculty team of 40 architects and engineers invited to participate in the preparation of a manual on *Multi-Protection Design* which went beyond the confines of local codes in considering fire, wind and earthquake protection in construction.

In 1974, the largest single day's outbreak of storms occurred nationwide. It was the day in which, for example, extensive destruction in Windsor, Ontario, Monticello, Indiana, and Xenia, Ohio, made headlines across the country. A few of the faculty involved in the previous study were called upon to assess the havoc in their areas with an eye to future

building theories they were espousing.

Then, with five professors from other states, Abernethy was called upon to gather building performance statistics that became *Engineering Aspects of the Tornadoes of April 3-4, 1974*, published and widely disseminated by the National Academy of Science.

At this point (September, 1974) he accepted a teaching position in LIT's School of Architecture. He also was, at that time, a design consultant in rebuilding Ohio and Indiana schools destroyed in the day of massive winds.

Utilizing "real" experiences as class assignments are part of LIT's School of Architecture teaching philosophy. Abernethy transported 30 of his students to the beleaguered town of Monticello to stay and propose some alternative choices to city fathers rebuilding their city. "This showed the students how buildings had been built and how they might better be constructed to withstand high winds," he says. Lawrence Institute of Technology sponsored the publication resulting from this experience: *What's Left After a Tornado*.

Abernethy then wrote *Tornado Protection* at the request of the Defense Civil Preparedness Agency to help school personnel locate the areas of maximum safety in existing buildings and to assist architects and engineers in designing new buildings that offer better protection from high winds, including hurricanes. He used as case histories in this book the Meadowlawn Elementary School in

Monticello, the Monroe Central School in Parker, Indiana, and Xenia's Senior High School.

"A person often designs," Abernethy concludes, "to meet municipal building codes that only require minimum standards. We have reason now to do better than the codes. We need to convince people that it makes more sense to build safer buildings."

For LIT, he teaches full time and advises one segment of the fifth-year bachelor of architecture degree candidates. He also is the School's counselor to the American Collegiate Schools of Architecture and last summer was one of 50 architectural faculty selected nationally for the Summer Seismic Institute for Architectural Faculty at Stanford University, which helped increase his own knowledge in building design for earth tremors.

"Trained architects and engineers can determine the safest place in buildings for people to go when disaster strikes," he says. "Every administrator of a building, every worker in a building, should know these locations."

It is his desire to work actively with others in getting this message across—by teaching, by speaking, and by continuing to learn. His help in the State of Michigan is acknowledged, particularly, by those weathermen providing the statistics. Michigan, they note, has the fifth highest death toll in the United States when tornadoes strike its corridors of dense population!



Gathered at the recent College hosted Symposium on Severe Local Storms were (L to R) C. R. Snider, meteorologist-in-charge, NWS Forecast Office, Ann Arbor; Glenn L. Trapp, meteorologist-in-charge, NWS Forecast Office, Detroit; Allen Pearson, director, National Severe Storms Forecast Center, Kansas City, MO; Charles Matthews, disaster preparedness meteorologist, Ann Arbor; and James J. Abernethy.

Features



Coping with tornadoes: what you can do at home

Above and on the cover: the aftermath of the vicious tornado which struck Xenia, Ohio in April, 1974. (Photographs by Xenia photographer Art Cox.)

by James J. Abernethy,
associate professor of architecture

The stories of the "Wizard of Oz" and the "Three Little Pigs" have popularized two aspects of tornadoes and buildings. In "Oz," we discover that Dorothy and her house can quite effortlessly be whisked away by a tornado, and in the "Three Pigs," we find a brick house stands up better in a heavy wind. While there is some truth to these stories, there is a degree of myth as well.

During the past few years, tornadoes and their effect on buildings have been subjects of considerable study. While many questions about tornadoes still remain unsolved, much more is known about them today than ever before. Older encyclopedias, for example, state that tornado speeds would approach 500 m.p.h. Aided by Nuclear Regulatory Commission studies, actual wind speeds have been measured using movies, engineering studies of damage, and waterspouts and dust devils. It is believed

today that maximum speeds of tornadoes do not exceed 300 m.p.h.

But I'm neither a meteorologist or an engineer, although I have the greatest respect for and more than a passing interest in both. One of my main interests as an architect is in how buildings perform in everyday use as well as extreme situations. This has led me to spend considerable time in the study of fire, earthquake, and wind effect on structural performance. Every year I spend several days crawling over, under, and through buildings that have experienced one of these disasters.

Due to intense interest of school administrators, my initial concern was to examine damaged educational facilities. The tragic Spring of 1974 provided a rare opportunity when more than 40 schools were severely damaged in Indiana alone. Six of Xenia, Ohio's eleven schools were destroyed. We discovered a definite damage pattern existed. Indeed, it became possible to predict *in advance* the performance of school buildings when

hit by storms.

What was frightening was to compare the damaged buildings to the disaster plans of many school administrators. Many buildings had no plan at all. Others placed a portion of the student body in areas of great potential risk.

Since that time much progress has been made towards documenting school damage and developing procedures to minimize risk. Many states now require such planning and testing. Others, including Michigan, rely on local planning.

An increasing number of local districts are well prepared for tornado emergencies, and have made the decision not to send children home but, rather, to send them to the best locations in their school buildings. This, in many cases, is very wise because school buildings are generally much stronger than adjacent housing. Some houses perform very well in offering protection during tornadoes—others offer very little. The current focus of my research is to document residential performance.

Features

About tornadoes

To begin with, each resident should understand the correct meaning of the few basic terms used in communicating information:

Funnel Cloud: a column of violently rotating winds extending down from a thunderstorm-like cloud but not touching the ground.

Tornado: a column of violently rotating winds extending down from a thunderstorm-like cloud and touching the ground.

Tornado Watch: a tornado or severe thunderstorm watch is issued whenever conditions exist for severe weather to develop. Watches are usually for areas about two-thirds the size of lower Michigan and are two to six hours long. Watches give you time to plan and prepare. Persons in or near a watch area should place small objects inside (such as garbage cans and bicycles) which could become deadly missiles. Make sure the entire family is informed and that they know what to do if a tornado is sighted. Keep children under close supervision. Keep an eye on the sky and listen for later statements and warnings.

Tornado Warning: a tornado or severe thunderstorm warning is issued by the local weather service office whenever a tornado or severe thunderstorm has actually been sighted or strongly indicated by radar. Warnings cover three or four counties and are usually no longer than an hour and a half. Warnings are to give you time to act. If the severe weather is reported near you, seek shelter immediately. If not, keep a constant lookout for severe weather and stay near shelter.

The amount of time that a person has to seek shelter depends on many factors—the most important being the method of warning. Most people believe that if a tornado were to hit their residence they would be alerted by some electronic medium (TV, radio, siren, etc.). In most situations, this is not true. It takes 7 to 40 minutes for a tornado to be identified, reported, confirmed, and a warning broadcast by the media to the public. If we assume the average tornado is 300 to 400 yards wide, is on the ground 15 minutes and moves at 35 miles per hour, chances are that most, if not all, of those who will be hit will first be alerted by their own eyes and ears. By the time the warning is broadcast, much of the damage will have been done.

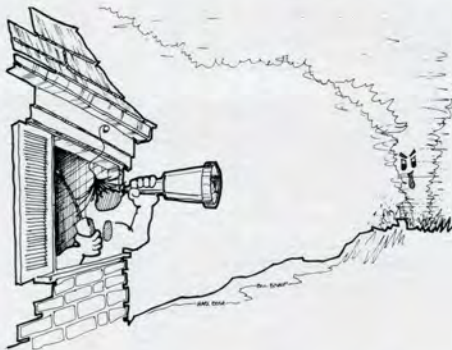
Fortunately, the low-frequency portion of the tornado sounds are not difficult to attenuate and can be heard for a considerable distance in advance of a storm through the relatively "thin" walls of a residence.

Tornadoes are also associated with the latter portions of a thunderstorm cloud. If



Arrowood Elementary School and the surrounding Arrowood Subdivision following the Xenia, Ohio tornado. (Photo by Cox.)

a tornado is approaching you, it may be sighted through the rain or hail that immediately precedes it, although visibility may be very limited. It is possible that lightning will be present. If the tornado occurs at night, the lightning



The best tornado detection devices are your own eyes and ears. Drawings by LIT students Mark Besh and Bill Bishop—from an upcoming graphics program for school children.

may be a blessing in disguise illuminating the funnel as it approaches.

Many victims of tornadoes report that they had between 30 seconds and two minutes to seek shelter. Due to circumstances such as listening to recordings, radio, or TV, the sounds of a tornado may be somewhat masked by the background sound level. This has sometimes reduced the available time to seek refuge to a very few seconds.

A few minutes *may* be available if the storm is very intense and occurs during

daylight or if the community has an operating siren warning system. Under these circumstances, a person has the option of taking shelter or, if his or her residence has a poor chance of offering adequate protection (a lightweight mobile or modular home without a basement, for example) quickly moving to a more substantial shelter area.

About your home

Damage to buildings and the resulting threat to life is caused by a combination of effects which happen at almost the same time.

Extreme winds are, of course, an obvious danger. Even the most modern building codes do not always require buildings to withstand the winds of a tornado. Wind speed increases with height, causing maximum damage potential on the top floor of a building. Roofs, especially flat roofs and those with a slight slope, tend to be lifted up and carried away. Overhangs and eaves on the windward side are the most vulnerable.

The high speed whirling winds can turn almost anything or anyone into a missile. Automobiles, buses, and tractor trailers can be tumbled about. Debris of all types becomes airborne at high speed. Missiles move much faster horizontally than vertically. Therefore, it is more serious to have a wall missing than a roof insofar as protection from missiles is concerned. Fortunately, missiles are usually stopped by substantial, somewhat massive interior partitions. Buildings without such interior partitions can be death traps.

Portions of buildings may fail and



Two-story residence



Split-level residence



Single-story residence

collapse upon other spaces in the building. Masonry chimneys collapse frequently, spilling massive debris onto the roofs of adjacent structures. Higher portions of buildings may collapse onto adjacent lower spaces, adding extreme loads to already weakened roof systems.

Different residential dwelling types offer a range of potential shelter to occupants:

The *high rise* multi-unit residence constructed out of steel, reinforced masonry or concrete will probably resist the forces of a tornado with the exception of damage to the roof, exterior walls and especially windows. Therefore, if persons seek shelter in a totally interior space such as a bathroom, utility room, closet, or interior hallway they may not even get dirty. Most substantial multi-unit residences have basements that are completely below ground. Anywhere in a completely below ground space will usually offer a very high degree of protection to the occupant.

Another safe or relatively safe residential type is the *house that has a fully depressed basement*. It doesn't make a great deal of difference whether this is a one or two story house or a split-level. Take shelter in the basement, away from windows, preferably in a small room or under substantial furniture.

There is no simple answer to the question of which corner of the basement offers the greatest protection. Since the winds of a tornado are usually most extreme when moving to the north and northeast it is not surprising to find upper levels of housing being separated from the foundation walls and being displaced to the north or northeast. This exposes a portion of the basement allowing debris to enter from the outside and to fall in from above. Therefore, it would not make particularly good sense to take shelter directly underneath an upstairs refrigerator or freezer.

Do not be overly concerned about taking shelter near a pilot light or potential source of fire. Fires are extremely rare during tornadoes. In fact, the vast majority of tornadoes have no fires associated with them at all.

A *two story residence* offers the potential for extreme danger as well as a high level of safety, depending on the occupant's location. The upper floor which usually contains bedrooms is a site of extreme damage; roofs are removed, windows broken, exterior walls collapse, leaving some interior walls and closets. The second floor, the upper floor, should only be used when there is insufficient time to go to a lower level. The safest place is in an interior room without windows such as a small closet or bathroom.

The main level of a two story residence also offers a range of protection but it is generally much better than the upper level. Windows can be expected to break.

This is especially true of large windows and those which face in the direction of the most severe winds—usually the west, south and occasionally the east. To be on the safe side, avoid all locations with exterior windows. Garages, living rooms and family rooms are usually the site of the greatest destruction. This is due to the combination of facts that they are relatively large spaces that have large openings—either doors, picture windows or sliding doors to the outside. The doors or windows break allowing the wind to enter and filling the room with debris and destruction. Again seek shelter within totally enclosed spaces such as closets, interior bathrooms, utility rooms, or interior hallways. It makes a great deal of sense to grab coats, pillows, blankets, or other materials to offer additional protection to your body from potential flying debris.

The *split level* or *tri level house* is not as safe as a building with a completely depressed basement. However, its safest location is in its lowest level. The uppermost level usually experiences considerable damage as with the upper level of any multi-story building. The main level, often containing family rooms, living rooms, kitchens and garages, also experiences extreme damage. This leaves only the lower level for any quality protection. Again, there is no one corner that will offer guaranteed protection. Seek shelter away from glass, in an enclosed space if possible, or under substantial objects such as a stairway, pool tables, work benches, or other pieces of heavy furniture. It is possible with advanced planning to quickly rearrange chairs and sofas increasing the protection from potential flying debris.

If you have advanced warning of a storm, it is wise to take a few measures that will likely reduce property damage to your residence. Open windows and doors, especially on the sides of the house away from the winds, usually north or east, to allow the barometric pressure

difference associated with a tornado to have a reduced effect on the house. When the storm passes, an extremely low pressure system occurs for a few moments. The air pressure inside the residence exceeds that of the outside. This causes the tendency for walls and roofs to collapse and blow outward.

If time is precious, make sure that you have reached the safest place available. The *single story residence* without a basement offers very little protection. However, unless the storm is extremely intense there will probably be portions of the building that will remain. Again, they are small interior spaces, especially closets, that are in rooms in the center or to the north of the house. The greatest damage occurs to those rooms that face in the direction of the storm. Usually the rooms on the south and west side are intensely damaged. Closets in those rooms may also be damaged whereas closets in northern bedrooms may go completely untouched.

It makes a great deal of sense when taking shelter in a small space to keep the doors closed—keeping flying debris out. Remember that a tornado is only at one point on its path for a few seconds; at the most one minute, so it is possible to occupy portions of residences such as a closet without a great deal of discomfort.

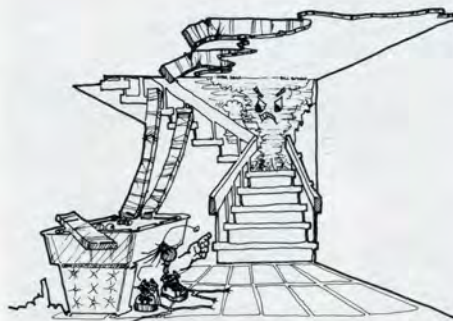
It might even be helpful to see, by an actual practice "drill," how many people can fit in the safest portions of your residence. You may be surprised how little space it takes—usually less than two square feet per person.

The most dangerous residential type is the *mobile or light weight modular home without a basement*. These structures should be evacuated. It would be prudent to have sirens within mobile home parks giving advance warning to those in greatest danger. Mobile or modular homes are no match for the winds of a tornado. They are usually separated from their foundations, often tipped over on their sides or even on the roof. Many mobile homes totally disintegrate. Residents of these dwellings should seek the best available shelter in nearby buildings, possibly within the community center or laundromat associated with the community.

It makes most sense for occupants of these dwellings to take tornado watches very seriously. When severe weather approaches it might be best to pay a visit on a friend who has a superior residence or move to a nearby commercial or institutional building offering higher protection.

Whenever a tornado watch is issued by the National Weather Service, review your personal shelter plan. Tune in for the latest weather development on radio or television.

Remember, if a tornado is going to hit your location, chances are that *you* will detect the oncoming storm first. Keep an eye on the sky. Know where to go.



In a split-level home, seek shelter on the lowest floor in an enclosed space.

Alumni Association News



Celebrating their 25th reunion at the Alumni Association's April dinner-dance were (L to R) Jane and Robert Murray, ME; Janet and Donald Beattie, CivE; Arlene and Robert Williams, ME; Ann and Movses Movsesian, ChE; Nancy and Stan Kukawka, ME; Ruth and William Lomas, ChE; Beatrice and Emeral Dietz, TI; Irene and Leonard Kosnik, EE; and Chris and Jimmie James, ME. Also in attendance were Pat and Steve Filus, ME; Ruth and John Williamson, ME; Mary Lee and Walter Prowalny, ME; Lillian and Ray Sevakis, ME; Lorry and Robert Chaplen, TI; Lillian and Peter Garritano, IE; Marian and Frank Yesh, EE; and Richard Sharp, ME; (and wife Paula not pictured).



Class of '68 members celebrating their tenth reunion at the dinner-dance were (L to R) Judy and Roger Avie, IM; Bodo Reinholz, IM, (and wife Joan not pictured); Mary Jane and Mike Murphy, IM; Janice and Gary Millikan, IM; Kitty and William Latham, IM; Nancy and Larry Wilson, IM; Sherry and Ronald Flor, ME; and Lee and Larry Goldsmith, IM. (Photos by Avie '68)



Charles Gergle, ME'34 at age 70 was the oldest alumnus attending. He and his wife Katrina were among the most energetic dancers, however.



Robert Williams, ME'53, gave a nostalgic salute to the Class of '53 on their twenty-fifth anniversary.



The big band sound of the "Patriots of Music" orchestra was popular...

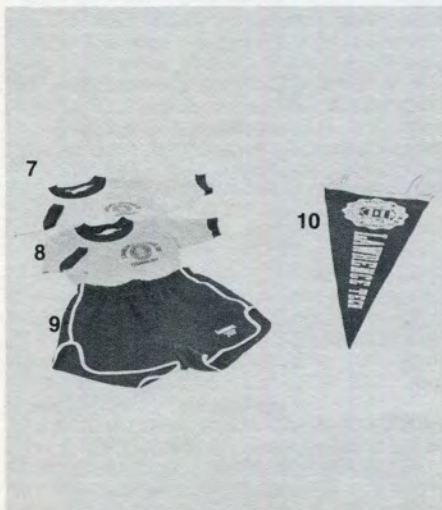


...and the dance floor was crowded late into the evening.

LIT Specialties

Gifts and novelties selected especially for LIT boosters by your College Bookstore. Adult clothing is available in small, medium, large and extra large sizes unless indicated.

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4. **Mesh Football Jersey.** Navy and white nylon \$6.95
5. **Baseball Shirt.** Navy and white 100% cotton \$5.30
6. **Short Sleeve Sweatshirt.** Navy and white, cotton \$5.80
7. **T-Shirt.** Tan or Blue, 75% cotton/25% acrylic \$3.69
8. **Youth T-Shirt.** Blue, 75% cotton/25% acrylic S(6-8), M(10-12), L(12-14) \$3.20
9. **Exercise Shorts.** Navy, 100% cotton \$3.97
10. **Pennant.** \$2.50
11. **Mug,** ceramic, gold lettering on white, black, or blue \$6.50
12. **Mug,** ceramic, brown \$3.95
13. **Mug,** pewter \$19.95
14. **Mug,** armetale \$8.95
15. **Mug,** armetale \$8.95
16. **Miniature Mug,** white ceramic \$1.60
17. **Ash Tray,** armetale \$4.95



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Alumni Notes

News for Alumni Notes

Use the space below to send us news about you or your L.I.T. friends. Tell us about honors, promotions, marriages, appointments and activities. Moving? Please send us your new address.

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News notes:

Send to: Director of Public/Alumni Relations, Lawrence Institute of Technology, 21000 West Ten Mile Road, Southfield, Michigan 48075.

1933-49

Kenneth K. Krum, ME '38, recently exhibited a display of hand carved birds at the Battle Creek Civic Art Center. Krum's excellence at wood carving has also resulted in examples of his work being on display at the National Carvers Museum in Boulder, CO, where he is listed as a "master bird carver." His carvings are considered outstanding due to his natural positioning of the birds on limbs or other familiar environments, and their highly detailed features and coloring.

1950-59

The Medical-Surgical Division of Parke Davis & Co. has named **George H. Heman**, ChE'51, vice president, operations, medical-surgical products. He will be responsible for directing the Division's facilities in Greenwood and Honea Path, SC, as well as two plants in California.

Heman joined Parke-Davis in 1951. He was promoted to several engineering and administrative positions. Most recently he was director of production and engineering at the Greenwood facility. He did graduate work at the University of Detroit.

Raymond J. Levulis, IE'55, has been named a vice president of T.W. Tunnell Company, Inc., management consultants. He continues to serve as director—midwest region, operating from the firm's Oak Brook, IL, office which he established. Levulis earned an M.B.A. from the University of Detroit. He and his family reside in Glen Ellyn, IL.

K. W. Tunnell Company also has offices in Philadelphia and London, England. The firm specializes in the application of improved operating systems and controls, organization, and strategic planning for industrial and institutional clients.

Robert L. Eck, PE, BT'58, has been named to the board of directors of Albert Kahn Associates, Inc., Detroit architects and engineers. He has been a project manager in the firm since 1963, and was advanced to senior associate in 1970. He has been responsible for coordinating the work on such large projects as the award-winning Washington Post plant and the recently recycled and modernized Chevrolet Gear and Axle facilities in Detroit.

Eck was also recently elected mayor of Berkley, MI.



Eck '58



Palmer '74

"Women in Architecture" was the topic of a lecture by **Gretchen Minnhaar**, AIA, AE'59, when she recently visited Ferris State College. She has been in private practice since 1971 and has been a guest lecturer on numerous college campuses throughout the U.S. She is co-author of a book, *Women and Success*.

Minnhaar is a member of the State Construction Code Commission and is a director of the Michigan Society of Architects. She received her masters degree in architectural design from the Universidad del Litoral, Argentina, and has completed one year of a doctoral program in city planning at the Universidad de Buenos Aires. Her artwork has been exhibited at shows in this country and in Argentina.

1960-69

Frank E. Boley, IM'64, has founded his own firm, Frank W. Boley, P.C., certified public accountants in Marshall. He was formerly a partner in the firm of Gilbert, Boley & Co., C.P.A.'s.

Stanley Tkacz, Jr., BT'65, is engaged in private practice in architecture and interior design in Plymouth. He is presently involved with several projects in Michigan and Indiana, and is a part-time instructor at Schoolcraft College in real estate.

Tkacz is a registered architect in Michigan and Indiana, is a registered licensed residential builder in Michigan, and is certified by NCARB. He is active in the Plymouth Optimists and he and his wife, Carolyn, have a son and daughter.

Thomas M. Ezyk, IM'66, has been promoted to General Manager of Industrial Engineering for the Hamill Manufacturing Division of Firestone Tire and Rubber Co. Hamill produces seat belts for Ford and GM in their manufacturing plants located at Washington, Imlay City, and Bad Axe, MI.

Ezyk has been with Hamill since 1976 and lives with his wife and two children in Shelby Twp.

Dr. Thomas H. Dulz, IM'68, a specialist in organizational behavior, has been advanced to associate professor in the department of management in the University of Hartford's School of Business and Public Administration.

He is a past director of the School's Graduate Organizational Behavior Program, and has published extensively in professional journals. As a consultant and training specialist, Prof. Dulz has been associated with the Hartford Insurance Group, Factory Insurance Association, the American Society for Quality Control, the U.S. Civil Service Commission, Connecticut General Life Insurance Company, the Hartford Junior League and East Hartford schools. He is affiliated with a large number of professional organizations and earned his

Ph.D. in organizational behavior at MSU in 1976.

He lives in Marlborough, CT with his son and daughter.

Gary L. Ludeke, PE, EE'68, has accepted a position with Kaman Sciences Corp. of Colorado Springs, CO as a software design engineer. Prior to his new post, he was assistant city traffic engineer for the City of Colorado Springs and was responsible for the acquisition of a digital computer-based control system for the City's traffic signal system.

Thaddeus C. Maslowski, IM'68, has been awarded the achievement award by the Association for Systems Management. President of the North Detroit Chapter of ASM, Maslowski's award recognizes his contributions to the advancement of the systems profession and the Association. He is manager in the management services department of Arthur Young and Company's Michigan offices.

Jack C. McClellan, IM'69, has been named national sales manager for Monarch Mirror Door Co. He is responsible for setting up a national sales and marketing program. The company is headquartered in Chatsworth, CA, and has warehouses in Chicago, Kansas City, Dallas, Miami, Atlanta, and Philadelphia. It manufactures a full line of mirrored wardrobe doors.

McClellan was formerly a district sales manager with Pfizer Inc.

1970-77

Brian P. Judge, Ar'70, has been elected to a two year term as vice president of LIT's Alpha Sigma Phi Alumni Association.

John O. Savage, Jr., IM'71, has been promoted to savings officer of the Durand branch of First Federal Savings of Owosso. He was formerly branch manager and is now responsible for all savings operations in the Durand office. He resides with his wife and three children in Owosso.

Stephen H. Doty, Ar'72, was commissioned in April as a lay missionary for the United Presbyterian Church. He is now in the Philippines where he is a translator and teacher. Doty is also a graduate of the School of Linguistics of the University of Texas.

Conrad P. Schwartz, CE'73, has been elected to a two year term as president of LIT's Alpha Sigma Phi Alumni Association.

H. Wayne George, IM'74, has accepted a position with Children's Hospital of Michigan as director of physician business services—a new department. He was formerly a supervisor of field audit with Michigan Blue Cross/Blue Shield. In August, George will receive his M.A. in management from Central Michigan University.

Thomas R. Palmer, M.D., Ch'74, graduated June 2 from the University of Michigan Medical School with a doctor of medicine degree. He will begin his residency in family practice at Dearborn's Oakwood Hospital July 1. He resides in Livonia.

Kenneth Mehl, ME'76, has been elected chairman of the Westland Planning Commission. He is employed by Hydra-Matic Division of General Motors.

In Memoriam

Clifford J. Canever, EE'49, of Plymouth, June 30, 1977. Word received April 4, 1978. He is survived by his wife, Dolores.

Jerry H. Armstrong, Jr., BA'51, of Mt. Clemens, March 9, 1978. Duplicating Manager for Wayne County Community College. Survived by his wife, Patricia, two daughters and a son.

Robert J. Harte, IE'52, of Farmington, March 15, 1978. Merchandising representative for the Sperry-Vickers Corp. Survived by his wife, Shirley, and two daughters.

Howard O. Borck, ME'54, of Detroit. Word received February 21, 1978.

Donald R. Schmill, EE'61, of Pittsfield, MA, February 6, 1978.

David T. Drife, EE'78, of Royal Oak, March 20, 1978. Assistant manager of McDonald's restaurant, Royal Oak. Survived by his parents, two sisters, and two brothers. Degree awarded posthumously.

Joseph E. Hill, of West Bloomfield, LIT math instructor and assistant football and track coach during the mid-1940's, March 24, 1978. Since 1968 he served as president of Oakland (County) Community College. Survived by his wife, Helen, and three daughters.

Lawrence

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Open House '78 draws crowd

Several thousand alumni, prospective students, neighbors, parents, and other friends of the College visited April 22 and 23 during the annual LIT Open House.

Hard-working students and faculty had prepared hundreds of special displays, demonstrations, and activities, and visitors left with a better appreciation for the College's varied programs.

Alumni Student Project Awards were presented to Peter J. Lang, ME'78; Jim Osborne, ET; Kurt Bambach, ET; and Harvey Buerkle, ET; and students who wrote and participated in the original one-act play, "Lord, As You Command."