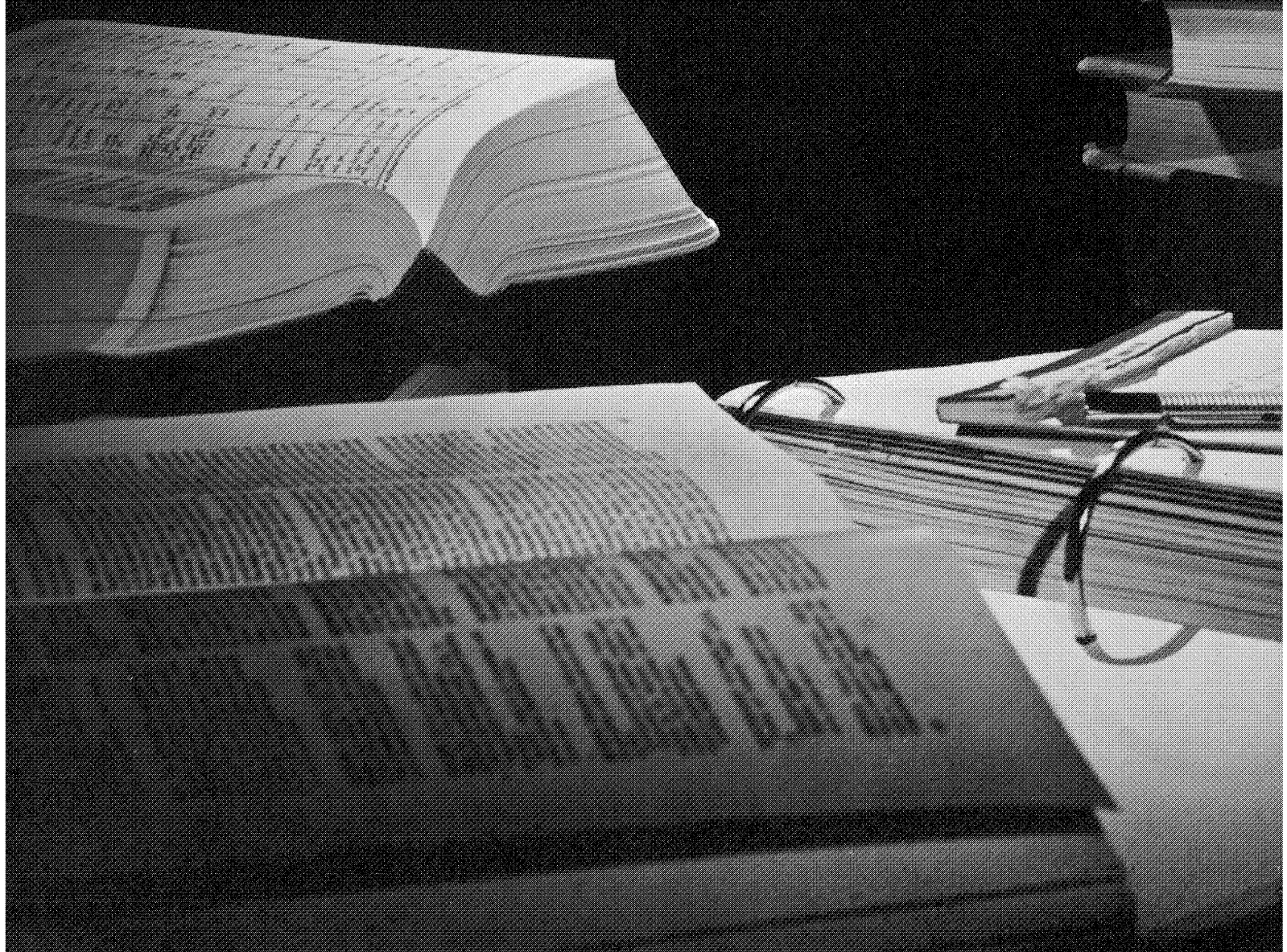


Winter, 1971

Dividend

The Magazine of the Graduate School of Business Administration • University of Michigan

The MBA
Evening Program



Dividend

The Magazine of the Graduate School of Business Administration - University of Michigan

Vol. II, No. 2

Winter, 1971

- 4 Sesame Street and \$8 Million
By David D. Connell, BBA '55

The executive producer of the Children's Television Workshop here gives facts and figures on the financing and producing of *Sesame Street*, the most successful children's show ever to hit the television screen.

- 7 Industry's Big Boost for Sesame Street

- 8 The 20,000 Mile MBA

More than 300 students are pursuing the MBA in the Evening Program of the Business School. This article tells some of the whys and hows of attending school after working all day.

- 15 Does GNP Mean Gross National Pollution?

by Philip Wernette

Depletion of resources and disposal of wastes, and their effect on the GNP are discussed in this article by the editor of the Michigan Business Review.

- 17 Among Ourselves

- 19 Assembly Hall

Architect's drawings of the proposed new Assembly Hall.

- 25 Top Executives Visit School

Pictures of some of the outstanding business leaders who were on campus recently as members of the Business School's Visiting Committee.

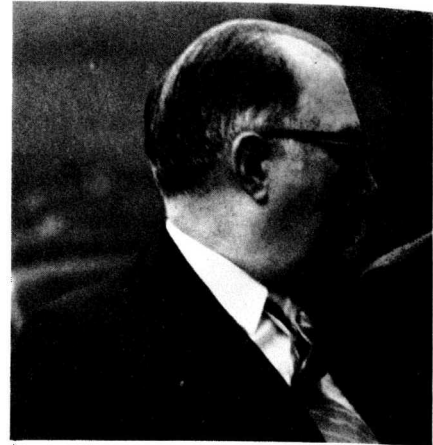
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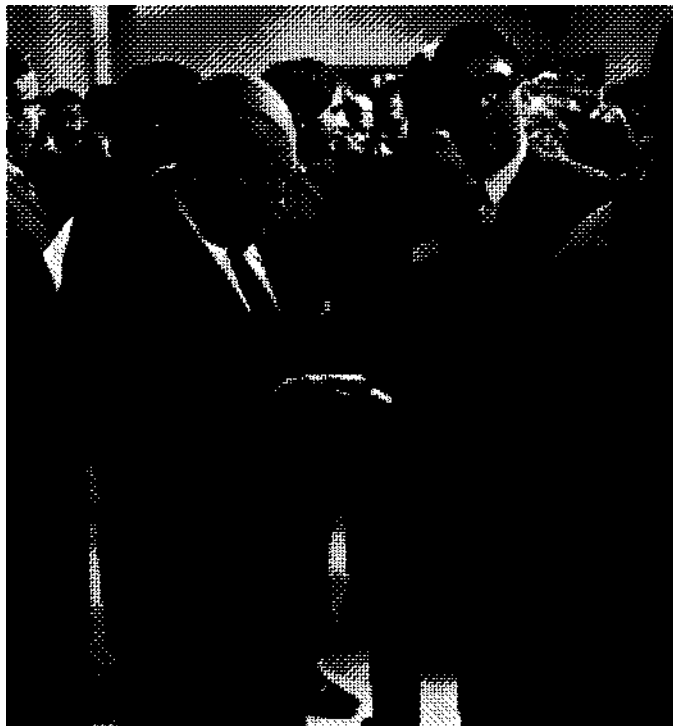
The People At The Business Conference

Over 400 people attended the business conference held this fall by the Graduate School of Business Administration at Detroit's Rackham Center. Speakers included Angus Campbell, Director of the U-M's Institute for Social Research; Martin R. Gainsburgh, senior vice-president and chief economist, National Industrial Conference Board; Robert Podesta, assistant secretary for economic development, U.S. Dept. of Commerce; and Wilford J. Eiteman, professor of finance. Pictured on these pages are some of the people who turned out for the conference.



Paul S. Mirabito, Executive Vice President, Burroughs Corp. and (right) A. M. Harrelson, Senior Executive Vice President-Finance of Bendix Corp.

Collins L. Carter, Chairman of the Board (left) and Raymond E. Kurtz, Vice President and Controller of Hayes Albion Corp.



*Below, Russel Swaney
President, Detroit Economic Club*



C.F. Ogden Administrative Vice President, Detroit Edison Company

How Sesame Street Raised and Spent Eight Million Dollars

By David D. Connell, BBA '55, MA '56

Executive Producer

Children's Television Workshop

THE EIGHT million dollar budget granted to establish the Children's Television Workshop and put *Sesame Street* on the air astounded some people. The Corporation for Public Broadcasting, the federally created public TV agency, operates today on an annual budget of between 20 million and 30 million dollars for *all* of its activities. Why then should so much be spent for one children's show? And how did Joan Ganz Cooney, now president of the Children's Television Workshop, persuade the Carnegie Corporation, the Ford Foundation and the U.S. Office of Education to put up eight million dollars for the *Sesame Street* experiment? Here are some of the facts she cited in persuading them:

- There are 12 million U.S. children between the ages of three and five. Most of them have no access to pre-schools.
- Preschool children make television viewing a full-time job. The average child at home watches up to eight hours of TV daily.
- Almost every family has a TV set. Even in households with an annual income of less than \$5,000, 90% own a television receiver.

- The right to read should be inherent in the birthright of every American child. The handicap of illiteracy or only partial literacy is one that no child should have to face.
- Much of a child's intellectual potential develops before he ever enters school. Children with little intellectual stimulation during these preschool years are at a distinct disadvantage during the school years and on into adulthood.
- Children of our inner cities, the residents of ghetto neighborhoods who most often are minority group members, are even more dependent on television for stimulation and knowledge than their middle and upper class counterparts.

From the outset, it was decided that inner city children would be *Sesame Street's* special target audience, for it was and is these children that need some form of early education the most.

Sesame Street was created as an experiment in preschool, educational television and was foreseen as a supplement to formal schooling for youngsters. It is still an experiment and it is still designed solely to be an

educational *aid*, for *Sesame Street* fully recognizes that nothing can replace the personal teacher-pupil relationship for the intellectual and emotional growth of a child.

However, such a teacher-pupil relationship cannot be made available to every four year old child in the United States. The cost to get such a universal public education program off the ground has been estimated at almost \$3 billion, not counting the funds to train the new teachers who would be needed or the funds to build new facilities to house these four year old pupils.

Total expenditures in the U.S. in 1968 for public elementary and secondary schools totaled about \$33 billion. The total we spend for new and used cars just misses the mark—it is \$32 billion.

Looked at in this perspective, \$8 million is really not so much.

From the financial viewpoint, one of the most astonishing results of the *Sesame Street* experiment was that, in its first attempt to create a new kind of television, the season was completed under budget. The Workshop spent \$7 million, saving \$1,000,000 that could be plowed back into its second



Executive producer David D. Connell (right) and producer Lutrelle Horne are pictured with two of the puppet characters of Sesame Street, Kermit the frog and Rufus the dog, in Mr. Hooper's store on Sesame Street.

semester. This is the kind of development that makes hardened network executives weep with pleasure and cost accountants burst into wild giggles.

Part of the budget for *Sesame Street* went into two unique aspects—pre-production research and what we called "utilization." Both paid off handsomely.

For the first time in the history of television, research was given equal importance to production, in fact, the research and production elements became interdependent.

It was the object of this research-production partnership to find out what type of television would sustain the interest of preschool children. Under the leadership of Dr. Edward L. Palmer, an expert in the media and its use in education, field workers went into the inner-city neighborhoods of several of our major metropolitan areas, and their findings were analyzed to determine the viewing habits and needs of disadvantaged

youngsters. Before a segment was incorporated into the program, it was pre-tested on selected children by a number of ingenious techniques.

One method used was called a distractor test. Children would be asked to watch two screens, one of them showing possible *Sesame Street* material and the other, a variety of other material potentially appealing to the children.

Data from these tests were accumulated on graphs and analyzed by researchers and producers to determine why attention rose or fell during test pieces of film.

As one might expect, the children provided many surprises, and since the show is so thoroughly experimental, we ended up discarding some ideas that we had prejudged to be excellent.

A case in point was a series of segments titled "Man From Alphabet," which was intended to teach various letters. We saw it as a regular feature of *Sesame Street*,

but the children did not. They were neither very entertained nor informed by the segments, and in many cases their most discernible reaction was a cross between boredom and confusion. "Man From Alphabet" was literally "canned."

The Alphabet as Drama

There have been equally surprising successes. We asked Broadway and movie actor James Earl Jones to come on the set as one of several guest celebrities and to simply read the alphabet. The only directions we gave him were to speak each letter distinctly and pause between each letter to leave room on the tape for editing.

We've all heard of people so talented that they could hold our attention by reading the telephone book. Mr. Jones gave us such a compelling two minute reading of the alphabet that neither children nor adults could take their eye off the TV monitor. So we decided to use Jones'

reading on the air just the way he had done it.

And what had been created is what Dr. Palmer now calls "the James Earl Jones effect." We found that on their first viewing, children would say each letter after Mr. Jones had pronounced it. Later they would say it ahead of him and wait for his reading to see if they were right.

This experience taught us how to design a successful piece of symbol recognition. Flash the symbol or letter, pause, give the sound, pause again. In this way, a child can progress through three stages of learning; giving the sound after he hears it, giving it at the same time he hears it, and finally, giving it before he hears it.

Who Watches?

Our in-house research department as well as outside, independent research services are surveying who watches *Sesame Street* and what they derive from it. One study, commissioned to determine whether we were reaching our target audience, or poverty children, was done in the Bedford-Stuyvesant section of Brooklyn, New York. It found that 90% of the children at home had seen the series and that 60% were regular viewers.

Other surveys have been done in five ghetto sections of Chicago and in Washington, D.C. And a study of viewers as compared with non-viewers among some 200 children in day care centers in Maine, Tennessee and New York found that *Sesame Street* viewers were making far more rapid progress in such areas as learning numbers, letters, classification of like and unlike shapes and items and the other curriculum taught on the show than the youngsters who did not see the show regularly.

A second unique aspect of *Sesame Street* is the utilization program, initiated because the Workshop stiff realized early in its existence that *Sesame Street*, as a public TV presentation, had an uphill battle for a viewing audience. This problem was compounded by the fact that in many poverty areas educational television programming was almost unheard of and that signals from educational TV stations were difficult to get on many home receivers.

Operation Head Start, which runs day care centers for the children

Breakdown of an Eight Million Dollar Budget

\$600,000 went into pre-production research and post production studies, by both Workshop and independent testing services. These activities are unique to *Sesame Street* in the annals of television.

\$400,000 was devoted to promotion of the series, with only \$27,000 of it constituting the entire advertising budget.

\$700,000 was spent in administration of the project.

\$700,000 was spent on utilization, a second unique aspect of the program, by which a grass roots movement was mounted in the inner cities to make the target audiences aware of and interested in tuning to *Sesame Street*.

\$4.6 million went into the creation and production of what was seen on the air. Included in this figure are:

Rent for studio space in New York City, taping and filming segments of the shows, salaries of actors, writers, producers, technicians, artists, scenic designers, composers and musicians, and the commissioning of original films from about 40 of the country's top film companies.

Costs for the use of the studio and its technical staff amounted to \$1 million for the 130 hour-long programs that comprised the first season of *Sesame Street*.

\$520,000 was spent for delivery by tape and interconnection of *Sesame Street* to the 200 stations that carried the series (some 250 stations are carrying the series in 1970-71).

\$112,000 was invested in raw videotape stock; another \$40,000 for props.

\$1.1 million was allocated in our first year for 153 animated and 112 live action pieces of film that were used as inserts in the program.

\$1 million was left over to be plowed back into the second semester.

The grant was used in two distinct time periods: a 19 month segment preparatory to *Sesame Street's* premiere in Fall, 1969, and an eight-month broadcast segment that constituted the 1969-70 television season.

of working parents in low-income areas, was engaged to cooperate with Workshop utilization plans to encourage viewership of *Sesame Street*.

Paid Workshop coordinators in New York and major urban areas of the country concentrated on the establishment of viewing centers within the inner cities to give pre-school youngsters the opportunity to watch the show regularly and to benefit from the reinforcement lessons after the daily programs by the use of guides created and distributed by the program. Thousands of volunteers went door to door in inner-city neighborhoods—talking to mothers about *Sesame Street*.

Promotion of the show was highly successful, so much so in fact that one critic of *Sesame Street* somehow deduced that we had spent \$6 million on publicity and advertising. On the contrary, the U.S. press for the most part was attracted to this new series

and eager to report on its impact. Their enthusiasm was unequalled, at least in the history of educational, or public, television.

Much of the promotion budget of \$400,000 was allocated for the production and distribution of a Children's Television Workshop brochure, other printed matter, and promotional art work and photographs. Radio and TV spot announcements produced under the promotion budget were run gratis on non-commercial outlets as well as on many commercial outlets as a public service. (For more on industry's boost for *Sesame Street*, see next page.)

U.S. commercial television networks often say they cannot afford to pour such funds as were made available to *Sesame Street* into their children's programming. It is a statement we at the Workshop take great exception to.

continued on page 28

INDUSTRY'S BIG BOOST FOR SESAME STREET

ONE OF the secrets of Sesame Street's success as an experiment in non-commercial television has been the help of commercial supporters.

While the Federal government and several foundations were instrumental in providing the basic funding for the Children's Television Workshop, the original budget called for a lot of things that hadn't been done before, and before long the Workshop's directors realized that some of the things they'd like to do weren't included in the original budget.

Getting the needed attention for a new show was one thing the project badly needed. Educational TV had just changed its name to Public TV last year, but the 180 stations in this category had never enjoyed very large audiences, (many are hard-to-find UHF outlets). This was particularly true among low-income groups whose children were special targets of the Sesame Street series. Commercial radio and television, on the other hand, do appeal to mass audiences—including the poor—but the cost of advertising on them, at least to a non-profit experimental group like the Children's Television Workshop, is prohibitive.

First to come to the Workshop's help was Xerox Corporation, which gave enough money (\$38,000) to purchase a half-hour of early evening time on the National Broadcasting Company TV Network two days before the premiere of *Sesame Street*. The Saturday evening special, produced by CTW, and titled "This Way to *Sesame Street*!" was promoted by both CTW and Xerox and received laudatory editorials. Even NBC, which had been paid for the time, was complimented for having helped promote the programming schedule of a "rival network." Xerox also came in for praise from the then U.S. Commissioner of Education, James Allen, who appeared briefly on the special to underscore the government's interest in the *Sesame Street* experiment.

The several radio and television

stations owned and operated by CBS also jumped in during the first days and provided some unusual help with a series of special radio documentaries on the program and a set of TV promos which must have startled housewives in cities like New York when, at 11:30 a.m., an announcer on WCBS-TV, Channel 2, said: "If you have preschool children in your house, may we suggest you tune now to Channel 13 for a new program called *"Sesame Street."*

Time-Life Broadcasting stations also used on-air promotional spots prepared by the Workshop to plug the use of the show on the public broadcasting station in each of their cities.

The need for print materials to reinforce the lessons of the program and help remind mothers of the show's very existence was another unbudgeted need that developed as the Workshop's promotional advisers began studying the program's market.

They developed plans for a "Parent/Teacher Guide to Sesame Street," a monthly broadside that contained a list of teaching elements contained in each program and suggested followup activities that a mother could do with her child. The Guide unfolded into a 22x28 inch sheet which featured a wall poster for the children, covering numbers one month, letters of the alphabet another month.

Time-Life Books advanced money for printing the Guide, some one million copies of which were distributed each month during the six month season through stations and specially-assigned CTW utilization personnel. The Guide became self-liquidating through paid subscriptions promoted by the public TV stations carrying *Sesame Street* and by newspaper ads and public service insertions in editions of *Time* and *Life*.

This season, Mobil Oil has underwritten printing and distribution costs of five million copies of the new version of the Guide, known as the *Sesame Street Magazine*. More

than eight million copies will also be distributed free to inner-city audiences. Creative costs of the book, which will include both English and Spanish editions, will be borne by subscriptions this year. Mobil's grant to the Workshop includes \$250,000 for printing and another \$850,000 for advertising the availability of the free copies in ethnic media.

Another Workshop need that revealed itself after the *Sesame Street* experiment started was for television receivers, particularly in day care and Head Start centers in urban centers.

CTW approached RCA to help it kick-off a nationwide drive for sets, and the electronics company responded with 150 color sets which were presented to centers in 56 cities.

CTW continues to seek help from individuals, organizations and companies to provide sets to a large number of existing early-childhood centers as well as a number of new *Sesame Street* Viewing Centers it plans to help create in inner-cities during the next year.

A totally new avenue for corporate support appeared early this year in response to pleas from mothers who wanted some evidence of *Sesame Street* on Saturday morning, the traditional cartoon-time for kids on commercial television.

Saturday is a normally "dark" day for educational stations who normally look to local school systems, and their Monday through Friday needs, as their only avenue to daytime programming.

Quaker Oats Company, itself a major sponsor of Saturday morning cartoon shows on commercial networks, made news with a \$50,000 grant to public TV station WTTW in its corporate hometown of Chicago. The company soon extended its underwriting of Saturday showings to stations in Washington, D.C., and Buffalo, N.Y.

More recently General Foods Corporation picked up the costs of

continued on page 24

The 20,000 Mile MBA

ANY a student who has received his MBA from the University of Michigan Evening School Program has driven 20,000 miles to get his degree," says Dr. Alfred W. Swinyard, associate dean of the U-M Graduate School of Business Administration and director of its Evening School Program, "and every MBA given in the program represents at least 20,000 miles of faculty driving time."

Students in the University of Michigan MBA program are scattered geographically all over the map and some must drive quite a distance to school. But even if the classroom is close to the office, sitting there for three hours after putting in a full day at work is certainly not the easiest way to get a degree. Yet more than 300 people are enrolled in the Graduate School of Business Administration's evening MBA program. Why do they do it?

One reason perhaps is that the evening program of the U-M Business School offers a degree conforming to the same high standards that characterize the day time MBA program in Ann Arbor—only the hours and the location of classes are different. Presently classes are being held in Ann Arbor, Dearborn, and Flint, and a careful study is being made in an effort to locate classes in other areas convenient to students. A

few evening courses have always been available in Ann Arbor itself, according to Dr. Swinyard, who says that about 20% of the evening MBA students live in Ann Arbor area. He adds that a more complete evening program is expected to be introduced in Ann Arbor in the fall of 1971.

Evening program students have met the same admissions standards as those entering the full time MBA program. They have full status as degree candidates and can transfer to full time day study in Ann Arbor upon request. In addition, day students can, and sometimes do, take courses in the evening. Courses in the evening program are taught by U-M business school faculty, most of whom are giving the same course in both the day and the evening programs. Library materials are supplied by the Business School library in Ann Arbor to the libraries in Dearborn and Flint for use of MBA students.

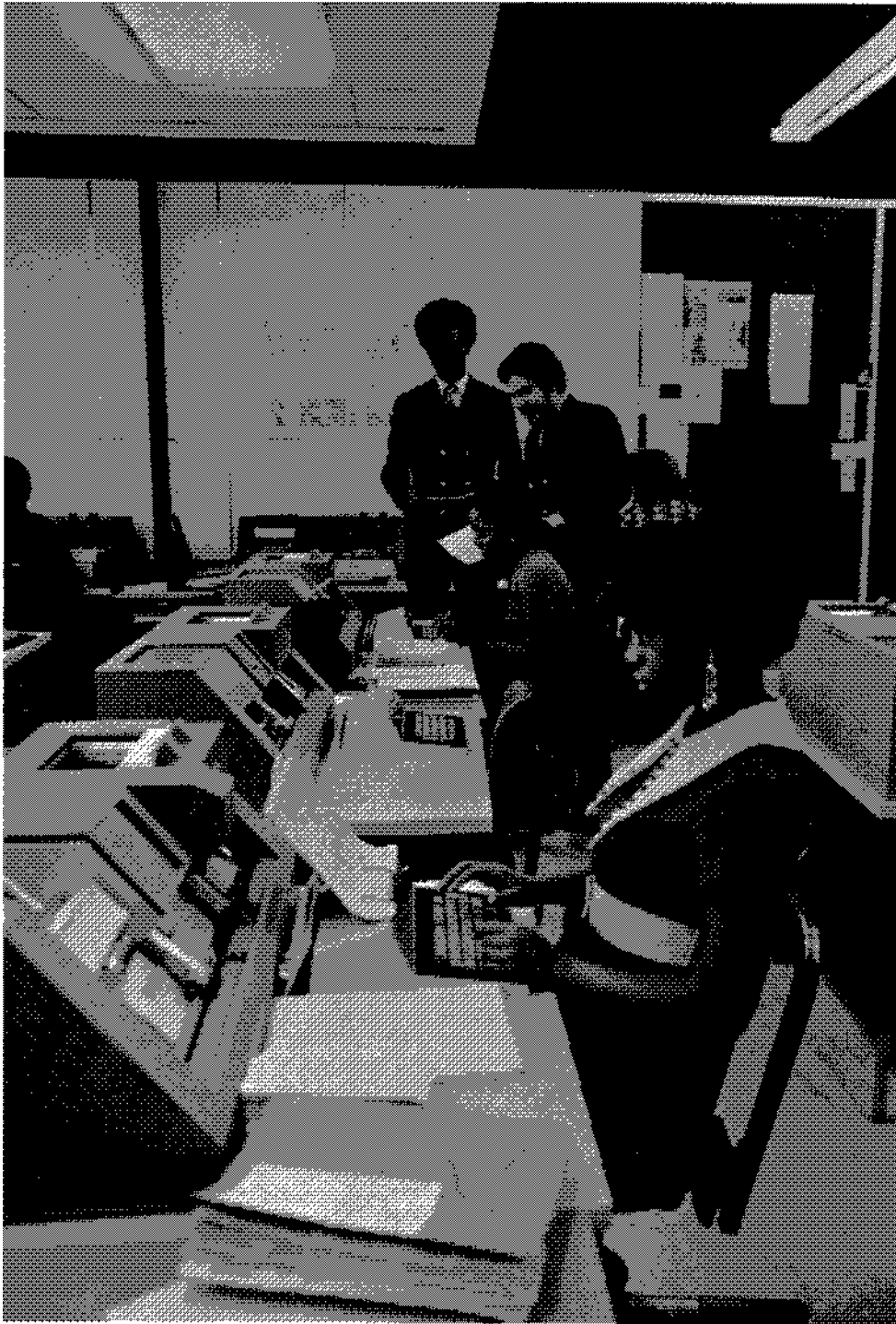
Perhaps one reason students pursue the MBA with such energy is that it will mean a promotion or a raise. Not so, say the students, who claim that they expect neither after they graduate. However, they stress that the MBA does give mobility and flexibility, particularly to those whose background is specialized, such as engineers. In fact, 54% of evening MBA students this year do have an engineering background. "An engi-

neering degree plus a business degree widens horizons a lot in terms of a person's qualifications," says one engineer. Another student comments, "The company, of course, does not promise anything, but I see things. Like people who have been in the program getting better job assignments, being given more freedom in the jobs they have—signs that the company values the MBA degree."

Although the degree itself is a primary objective, a large number of students also cite self-development as an important motivating factor. "After you are 'in the system' a while you accept certain ideas as just being true," said one man. "Education changes that. It keeps the grey matter from getting moldy. Things don't fit into such neat cubbyholes anymore."

Students also spoke frequently of evening courses as being directly relevant to the job they do at the office, either giving them specific new skills or widening the skills they already have. Several managers commented that one big problem managers face is "becoming obsolete," and that an excellent antidote to obsolescence is education.

Whatever their reasons, most evening students agree that going to school at night creates special problems. One hazard is that job pressure and school pressure may collide at times, putting the student in a grim



Richard White took educational leave from his job as a market analyst with the Ford Motor Company to come to Ann Arbor as a full time MBA student. But a summer job with the Economic Development Corporation of Greater Detroit proved so interesting that he transferred to the evening program so he could continue his job at EDC, where he is a marketing consultant working with black owned businesses in Detroit. Here he is pictured with Carter Jones, president of Onyx E.D.P., Inc., a data transcription firm currently engaged in keypunching, and planning shortly to add magnetic tape capability and eventually to expand into a full-range computer service bureau. Onyx E.D.P. started operation in January, 1970 and employs 50 people on a three-shift basis. White explains that the Economic Development Corporation was established in late 1968 as a means of focusing the resources of the business community on self-determined minority economic development. (Since it was founded loans from Detroit banks to minority businesses have risen from \$345,000 in 1967-68 to \$7,500,000 in 1969-70). EDC member companies provide management and technical assistance, increase purchasing from minority suppliers and initiate sponsorship arrangements with major new businesses. In addition, the eight full-time staff members provide consultant services to minority owned businesses, of which Onyx is one. White says what he is learning in the evening MBA program is proving useful on the job. For example, an accounting procedures course is giving him better insight into the financial statements of companies he's consulting with.

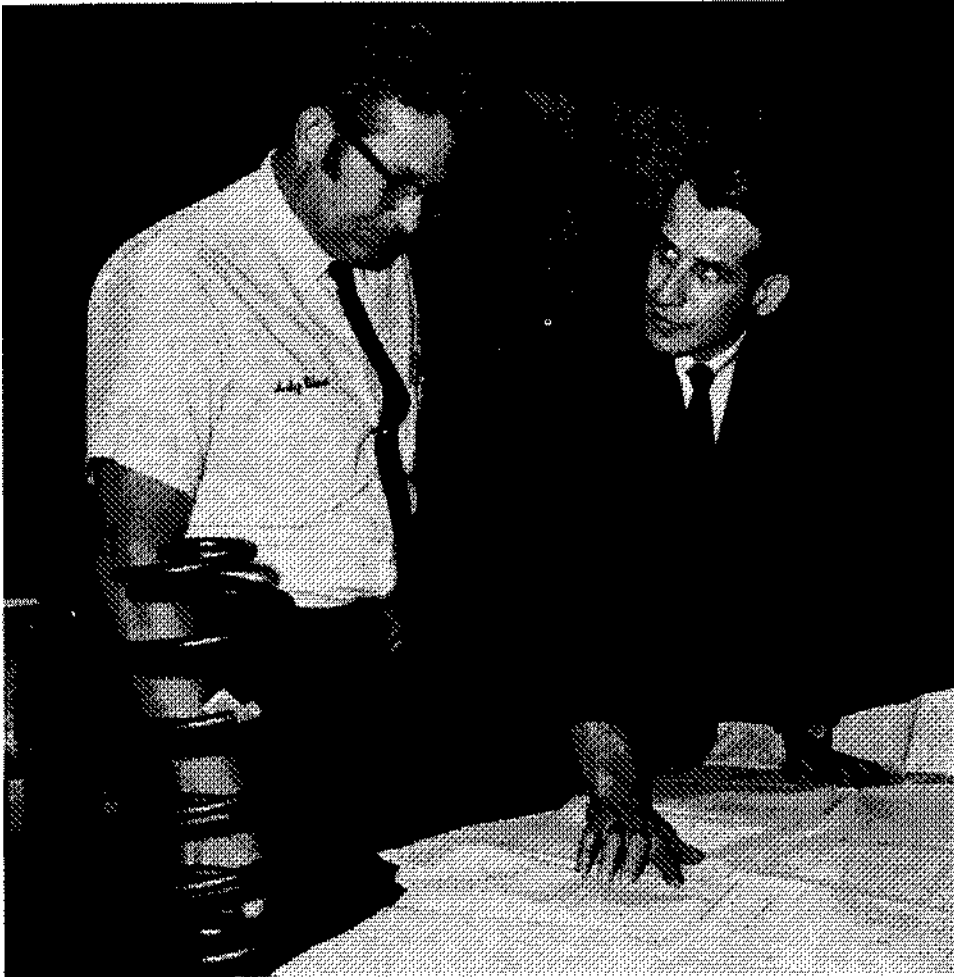
crunch. An unusual example of this was the man who needed one more course to graduate when his company transferred him 1000 miles away. What to do? Answer: Commute. After flying back to Dearborn every week for class, he got his degree.

The purely physical challenge of night school has to be considered also. Although evening program students say the quality of teaching is high, even an exciting professor

may find the class getting droopy around 9 p.m. "In which case," said one student with a grin, "he usually opens a lot of windows, and hopes it's cold enough to keep people alert." Another student passed on his formula for staying awake, "Just keep both feet about one inch off the floor." In fact, however, both students and faculty agree that keeping alert is not really a problem in the evening graduate MBA

program. When asked if his evening class seemed less alert than his day classes, one faculty member commented, "There may be an occasional student who is especially tired after a hard day at the office, but how about the day student in a 9 a.m. class who may have had a hard night?"

This response emphasized a point made by Merle Crawford, professor of marketing, who says that certain characteristics considered unique to



"Education is a tool that you use constantly. Like any tool it needs to be constantly sharpened" says Clifford Urmanic, quality engineer for General Motors Buick Division who is attending MBA evening program classes in Flint. "Night school has a real appeal from the standpoint of mental stimulation" he explains. "Even in a class where I'm behind the eightball so to speak it's hard to keep from getting over-stimulated mentally." On the job, Urmanic's responsibilities involve four areas: new product planning, training, gauging and problem-solving. He is pictured right discussing a new gauge design with quality control foreman Andre Lehoux. The gauge will be used to check critical dimensions on rear coil springs like the one at left. Scheduling in the Urmanic family has reached the status of an art, since Mrs. Urmanic also goes to evening classes (she graduated in December and will be going to work as an elementary school teacher.) Each semester, both Urmanics and their eight year old son sit down to plan the schedule so that nobody's classes conflict with cub scout meetings or with other family activities.

the evening program may in fact also be present in the day school only "we don't analyze it so much." For example, there is a good deal of talk about evening program course selection being less varied than day school offerings. Although this is certainly true during a one or two semester period, Dr. Crawford points out that evening school students are usually in the program longer than day students, and that their choice of courses over five or six years may in fact be as varied as the choice in the day program over two years.

Five Conflicts Every Night

However varied the course offerings may be, scheduling them in the proper sequence is certainly a problem in the evening program. L. Lynn wood Aris, assistant dean, points out that scheduling difficulties in the evening program partially stem from a simple matter of fewer hours to work with. "For example," he says, "in evening school you have four

nights available, since Friday and Saturday night classes do not appeal to students. This means if you offer 20 courses one semester in the evening program, you are talking about five conflicts per night (a student can only take one course per night). The day program, on the other hand, offers you 10 class periods per day, five days a week plus Saturday morning, so that you have *much* greater flexibility."

The Graduate School of Business Administration is trying to alleviate scheduling problems in several ways. Required courses are being arranged for five years in advance, so when a student enters the program he can map out his courses in proper sequence, thus substantially reducing the hazards of needing one course and not having its prerequisite. In addition, the School sends a list of courses to students each semester and asks them to check those they

particularly want or need, thus insuring a constant updating of information on students' individual needs.

Teaching by TV

Another answer to some of the scheduling problems may be the introduction of teaching by TV, being tried on an experimental basis this year. Classes originate in a studio in the U-M's west engineering building, and are offered with the cooperation of the School of Engineering. The channels are used to transmit courses from the Engineering School in the daytime, and from the Business School at night. As presently designed, the TV system delivers a one way video signal and has a two way audio circuit. Thus a student can see and hear the professor and the professor can hear, but cannot see, his TV students. Teachers also have a few "live" students in the studio classroom in Ann Arbor. Mem-

bers of classes in the TV receiving studios have telephones which they can activate anytime they want to ask a question or make a comment. A courier service handles blue books and homework.

At present, there is a TV receiving studio in Dearborn and at the Southfield office building of Michigan Bell Telephone Company. An additional receiving studio has just been opened in the Rackham Building in downtown Detroit, and the service is available to other industrial firms who may wish to subscribe to the program.

Faculty members now teaching by TV agree that it has enormous possibilities, and also that the "jury is not in yet" on this experimental year, but disagree about TV's effect on spontaneous classroom discussion. "An issue that generates a fantastic discussion in a live class goes over as stated fact on TV," says one professor who believes that the medium cuts down on interaction. But another teacher says "the students talk just as much, and interrupt just as much as in a "live" class. Some of them keep the buttons on their 'phones pushed down at all times, so that they can speak at will." What does bother him, he says, is not being able to see all of his students.

The "invisible class" aspect of TV teaching is disconcerting, though one teacher says you eventually get over the initial shock. Martin Warshaw, professor of marketing, had a small enough group so that he could take Polaroid pictures of each student during the first few class sessions which were held "live." Later, when a student in a TV receiving studio would speak or comment, he would place the student's picture under the camera used to transmit visual aids. This way he and his Ann Arbor class were able to associate the voice and the face of the speaker. No one pretends that this is any substitute for a two way visual connection, but such a connection would double the cost of the system.

The TV hookup has the advantage of enriching evening offerings by appealing to professors who do not want to drive to distant points to present a three hour class. A student commented, "If TV is the



The evening program is particularly rough when the responsibilities of job and the responsibilities of class both get demanding at the same time, says Lowell Bond, Payroll Services Manager for Ford, who figures that at times he works a 14 to 18 hour day when you add class hours and homework time to the usual working day. Bond did not enter the evening program until 1967 because he wanted to spend time with his twin boys (now seniors at the University of Michigan) and his daughter during their growing-up years. Now, he says, his daughter is a junior in high school and when she needs help with her homework, her homework comes before his. Nearly all of Ford's payroll goes through Bond's office, including the weekly checks of 170,000 employees, and the twice-a-month checks of 65,000 salaried employees—a total in 1970 of 2 billion, 700 million dollars. "Most people think," says Bond, "that in a payroll office you push a button and a check pops out, but actually there is an astounding amount of detail involved. Like keeping the deductions straight, figuring different state and municipal taxes, withholding for various employee benefits."

only way we can get a certain professor then so be it. Maybe I'd rather have a three dimensional teacher, but a two dimensional teacher is certainly better than none."

Another possible advantage of TV is that a class can be presented on two nights a week for an hour and a half, rather than one night a week for three hours. This enables a teacher to focus on fewer concepts each session. And of course, the eventual possibilities for teaching students geographically distant from campus may enormously widen the reach of public universities and enable many students to attend classes formerly available only to those within commuting distance of the main campus.

Television teaching is especially effective when factual material is being presented, say faculty members. One explained, "This is a TV generation, accustomed from childhood to getting information over television. Their thought processes are geared to the medium." Said another, "I have a feeling they may concentrate more in a TV classroom. Perhaps the distractions are less." Evidence also indicates that TV encourages professors to organize their material more precisely.

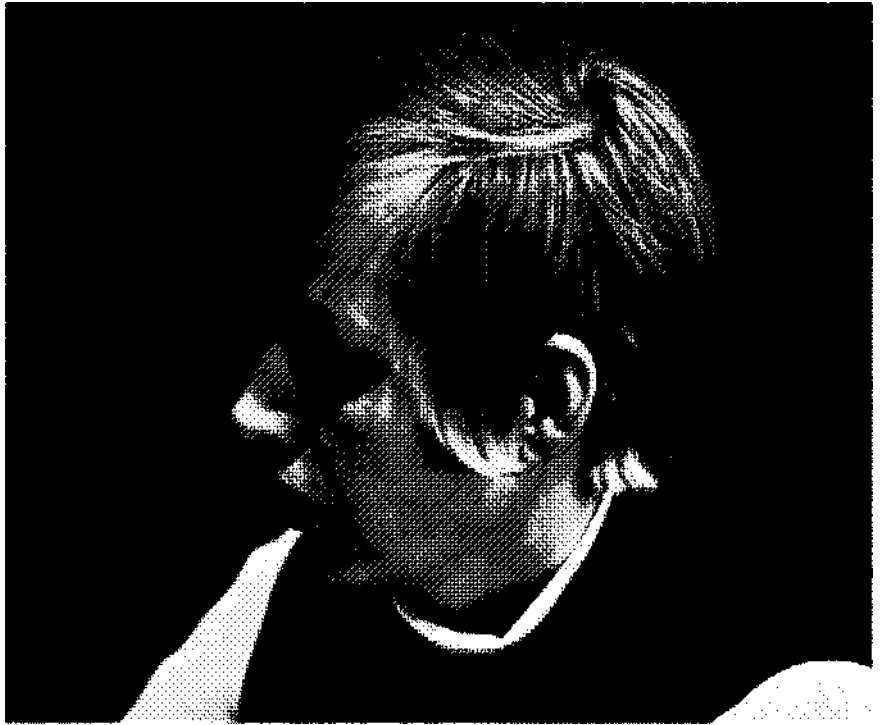
Certainly TV changes the classroom situation. Teachers commented that even students in the studio with them tended to watch the monitor instead of the teacher, because everything is geared to the monitor. "Written material is presented over the monitor instead of on a blackboard," said one teacher, "so I can certainly understand why they watch it, but it still gives you a peculiar feeling." Another teacher remarked that students in a regular class no doubt watch the blackboard, but that he's not aware of it. Perhaps that's because the monitor is distinctly separated from the teacher in space, whereas the blackboard is not.

How Many Finish?

It takes an average of four to five years for an evening student to complete the degree program, according to Lynn Wood Aris, assistant dean. Attrition rates are difficult to estimate, as students may drop out for

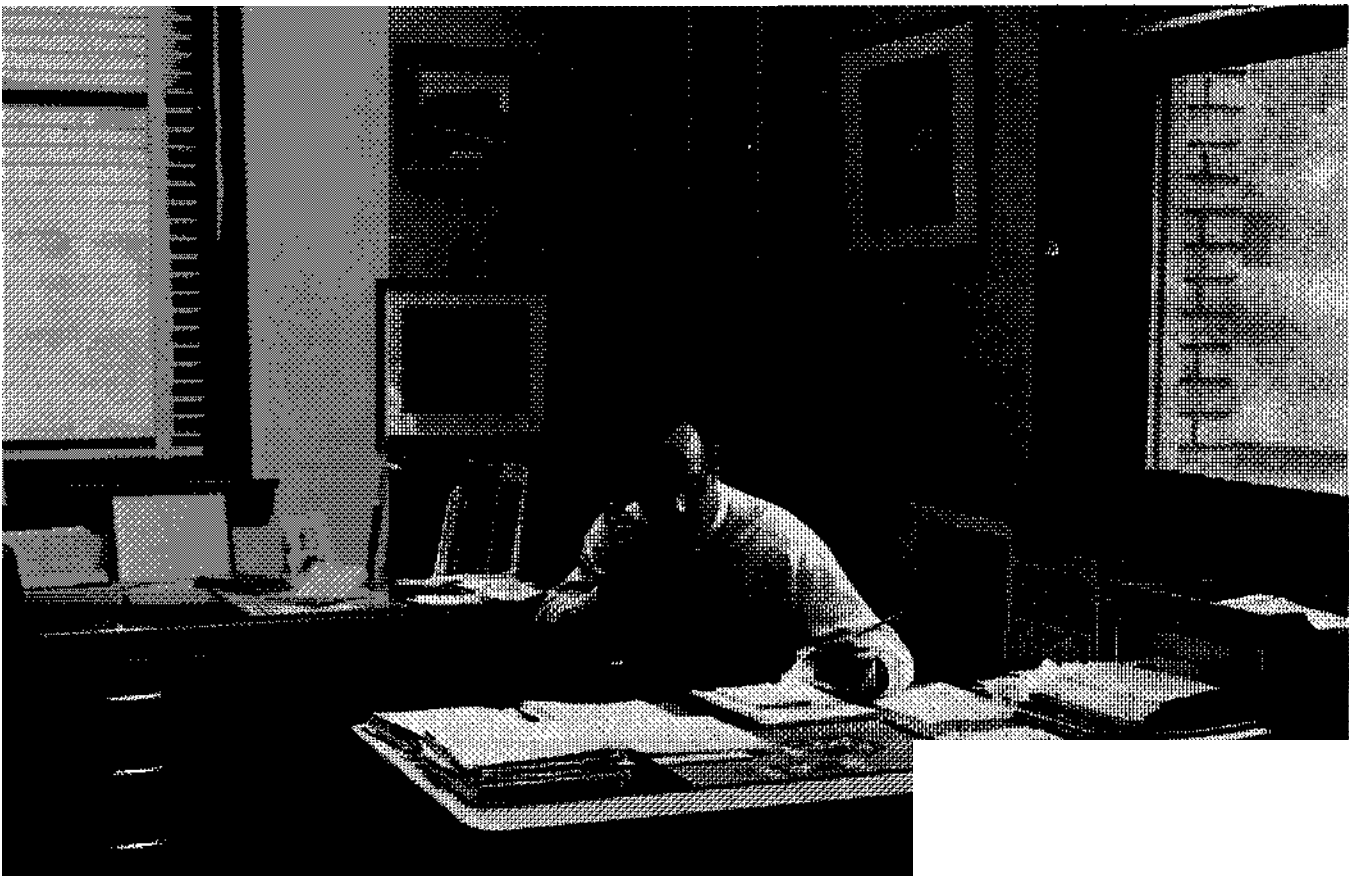
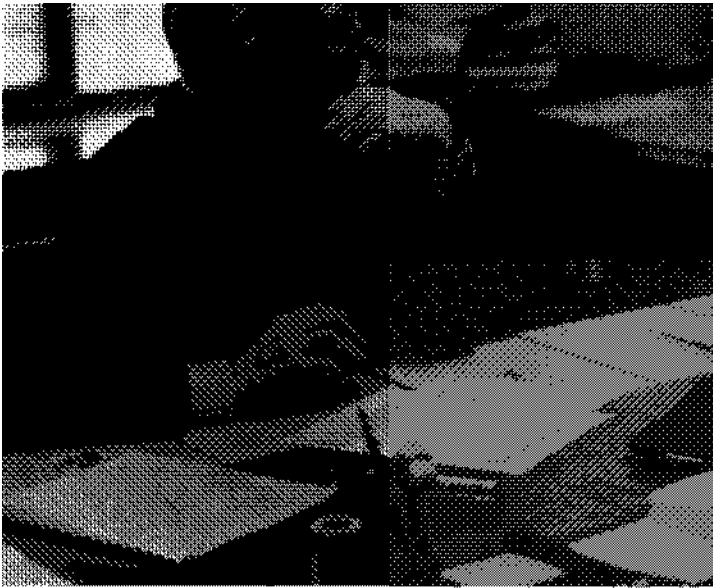
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Mrs. Sally McKee who is taking eight hours of class work in the evening program says she does most of her studying on lunch hours and first thing in the morning on weekends. Occasionally there are evenings when all of her four children, ages 15, 14, 11 and 10, have homework and everybody studies. Mrs. McKee has her bachelor's degree in engineering from the U-M, and has worked as a product development engineer for Ford for the past 3½ years. Though she likes going to school, Mrs. McKee says her children find it very discouraging. "They look at me, still going to school, and figure if I'm any example they'll never get finished with school," she says. In addition to her night program, she says she sometimes goes to technical courses in-house, and predicts that the time will come when people in highly technical areas will have to have a day off to go to school each week just to keep up. She belongs to a group of five engineers that is currently working on setting up facilities for the testing of carburetors and other fuel systems. They also develop all the procedures for carburetor testing, and wrote the test manual for use throughout the Ford Company. Women engineers are not particularly unusual, according to Mrs. McKee, who says there are 10 or 12 women engineers at Ford. She adds that she has encountered no discrimination at all in her department.



As a senior fuel buyer for the Detroit Edison Company, Ronald Rostofer is responsible for buying coal and oil, as well as for buying machines to transport the coal. He represented the company in its dealings with the railroad and with the design firm that made the "swingingest machine ever built for transporting coal—the largest aluminum gondola made." There will be four trains of 140 cars each, plus five locomotives, which will service the new power plant being built by Detroit Edison in Monroe, Michigan. In addition to his regular job responsibilities, Rostofer took a company sponsored course on nuclear power last spring, and served as a member of the Year 2000 Study Committee which worked on preparation of the Company's long range posture based on the Doxiadis plans. Why, with all these job responsibilities, did he go to school too? Very simple. To get the MBA degree. "Engineering plus business is more interesting than straight engineering," he says, "but to do it, you need the business degree." His undergraduate education was in electrical engineering. He began work toward his MBA in 1968, and graduated in December, 1970.

Ten years ago Loren Deer, who was then chief accountant for the S. S. Kresge Company, decided to round out his business background by taking evening courses. At first, he was going to school just for "a kind of constant updating of skills," but soon decided to get his MBA. He always took only one course at a time, in order to get the most out of each one without being overburdened. Although he graduated with distinction in 1969, he is still attending evening classes, this time as a special student in international business. Kresge is opening several stores in Australia, and the course is giving him insights he can use on the job. Now assistant controller for the Kresge Company, Deer says that evening classes were always relevant to what he was doing on the job. "I kept picking up pieces of information there that I could use here," he says.



continued from page 11

several years and yet eventually return to finish. Certainly the attrition rate is higher than in day school. Newly admitted students number between 100 and 120 each year; newly graduated students number between 30 and 50 each year. Yet the program remains relatively stable numerically.

Faculty members agree that evening students probably have less time to devote to their studies than day students, particularly if you apply the old rule of thumb—two hours of preparation for every hour of class. It is unlikely that many evening students actually put in this much time studying, but as one faculty member remarked, "no one knows that day students spend that kind of time in preparation either." He adds that although hour for hour the preparation may be less in the evening program, the student working in the business world brings to class a background of experience which the day student does not have—and may have to make up for.

Instantaneous Feedback

It is this background of experience that makes evening program teaching different. "To me it's a pleasure to teach in night school because you get instantaneous feedback," says Edwin Miller, associate professor of industrial relations. "By that I mean you say something in class and the next day they may try it. Sometimes their experiences are valuable in teaching the class. For instance, we were talking one day about performance appraisals. One fellow said, 'here's what happened in my company,' and they started comparing notes and discussing the various uses and misuses of the performance appraisal. Because they have the range of experience, you don't have to weave as elaborate an argument to substantiate a point. You can assume a common experience and knowledge that you can't assume in the day school."

Because of that background of experience, evening students can quickly see the practical application of what the professor is talking about, but they are usually not as adept at thinking in theoretical terms as the day students. This is both a weakness and a strength: some con-

cepts are best understood at the theoretical level—but day students can occasionally get lost in abstraction. As one teacher put it, "The evening student has seen the organization work, and he knows it is not

a beautiful theoretical chart."

One of the most difficult problems the evening school student faces is juggling myriad responsibilities. Besides course scheduling problems,

continued on Page 28



"If there is one thing I could say to younger men considering night school," says Frank Tousley, quality control manager for the Chrysler McGraw Glass Plant, "it's to take advantage of the chance to go to evening school soon, before you get so involved with your work assignments and growing families that evening school becomes especially difficult." Mr. Tousley ought to know. He entered the evening program 12 years ago, accumulated 29 credit hours before dropping out in 1961 to become president of a newly organized management club for about 1000 members of the Power Train Division of Chrysler. That extra

activity took all his spare time. Later, job responsibilities prevented him from returning to school until 1967, but he is now expecting to finish his degree next December. Why did he persist? First, he says, he went to school for specific courses—like accounting and applied statistics, as they were especially pertinent to his work. Later, he went for the continual updating evening study provides—a way of keeping up with developments other than in your own field. At the McGraw Glass Plant, Mr. Tousley is concerned to see to it that the parts produced there (windshields, side glass, rear windows) are "good parts produced on time."

Does GNP Mean Gross National Pollution?

By J. Philip Wernette
Prof. of Business Administration

WITH the aid of large quantities of fuel, the American people produce and consume a gigantic stream of goods—the ever-growing gross national product (GNP). The growth of the gross national product is due to both population increase and per capita productivity increase. In the forty-year period covered by the table, the latter has been the larger contributor to the total growth and also the key to rising real per capita and per family incomes.

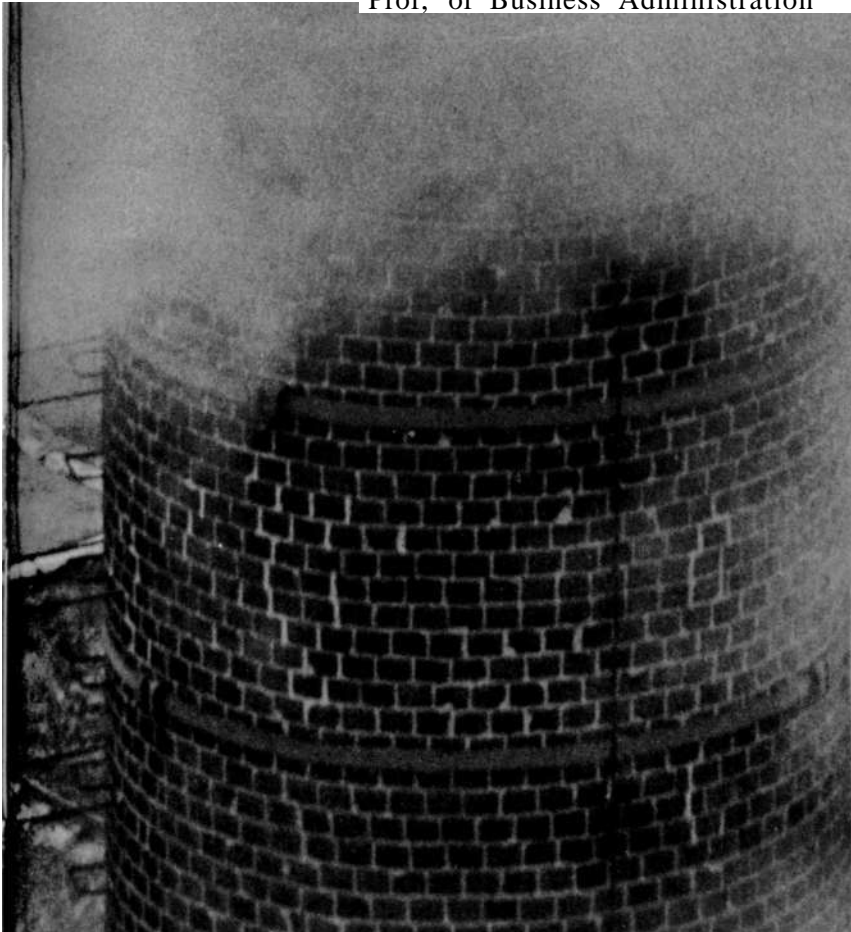
	GNP in 1958 dollars (Billions)	Population (Millions)	Per capita Product in 1958 dollars
1929	\$203.6	121.8	\$1,670
1969	727.7	203.1	3,580
40-year growth	3.57 times	1.67 times	2.14 times

But production and consumption mean that the goods, and the fuels which furnish the power to produce (and consume) them, become wastes, which must be disposed of. The entire process involves two problems: depletion and disposal. Much disposal is accomplished by dumping the wastes into the air and the water, creating pollution, or onto the land, where space is the problem. As the gross national product swells, disposal and pollution swell with it. GNP could well stand for gross national pollution, as well as for gross national product.

The Significance of Future Growth

These conditions take on added significance because of the prospect of continued economic growth. In the foreseeable future, the real gross national product will increase by about 50 per cent per decade, which means that it will double every 14 years. Unless the end-product-mix changes, or unless technologies improve so as to reduce the input of physical matter per billion dollars worth of output, or to increase its re-use, the withdrawal of materials from nature will increase at the same rate and, therefore, the generation of wastes will increase correspondingly. Since both of these ameliorating conditions are likely to come about, pollutants will probably not increase as rapidly as total output.

It is possible to have absolutely clean air and water *in* a primitive economy. The Indians had these conditions on this continent. It is



impossible, however, to have absolutely clean air and water in an industrialized economy. Pollution, however, can be *reduced*—through a trade-off; the greater the purity achieved, the greater the cost. This involves balancing the degree of purity desired against the costs of achieving it. Another way of putting the problem is this: balancing the harm done by (i.e., the cost of) pollution against the cost of reducing it.

Actions that result in water or air pollution—by municipalities, manufacturing firms, and farmers—are instances of what economists call "external diseconomies," or "uncounted costs," or "social costs." The term refers to the fact that the costs of removing the conditions, or the costs of the injuries caused if the pollutants are not removed, are borne by persons other than the polluters. Equity and adherence to the principles of the market economy require that these costs should be incorporated into the other costs and borne by the customers or the constituents of the polluting agencies, private or public, business or governmental.

Water Pollution

The different forms of pollution are disagreeable and dangerous to varying degrees, in different places and different circumstances. It can be said, without any belittlement of the significance of other forms of pollution, that water pollution is one of the most extensive and most threatening to human health, animal life, and environmental well-being in many regions of our land and in others as well. Water pollution results mainly from sewage, industrial wastes, and agricultural wastes. Some time ago, the title of an editorial in the *New York Times* described the situation in that city in these words: "We Live Amidst Sewers." This is an ugly subject and an ugly condition. Concern with its causes and control has increased greatly in recent years, after centuries of only occasional attention to the problem, and much neglect.

Indeed, one example of colossal pollution has not only gone unnoticed as such but has actually been considered to be part of a great accomplishment by a great hero. The

Hercules diverted the waters of two rivers to flow through the Augean stables, thus cleaning them out in one day. The account fails to mention the reaction of the people downstream.

sixth labor assigned to Hercules was that of the Augean stables, where the stalls of three thousand oxen had not been cleaned for thirty years. Hercules bought through the stables the waters of two rivers and flushed them out in one day. The account fails to mention the reaction of the people downstream. In any event, the Herculean method of disposing of human and animal wastes is still very much with us.

Administering and Financing the Anti-Pollution Program

The proper way to cope with the problem is governmental prohibition of pollution—by federal, not state, laws. An individual state would likely be reluctant to impose and enforce anti-pollution laws lest business firms avoid it in favor of more indulgent commonwealths. Effective regulation, therefore, must be by the federal government, applicable to all states alike.

Contrary to what may be a widely-held opinion, defining unlawful pollution is not easy. The minimum allowable amount differs among different pollutants, different locations, and different circumstances. The regulations must be judicious—neither too strict nor too lax.

With an effective, realistic federal anti-pollution program enacted and enforced, the question of financing would loom large. There are several possibilities. One would be for the government to subsidize anti-pollution activity by outright grants. Very similar to this is the possibility of allowing tax credits for expenditures on anti-pollution equipment and operations—a kind of disguised grant. Of the two, the former is to be preferred because we should know what the total amount of the subsidy

would be, and it would be reviewed annually—two things that would not be true of a tax exemption. Neither device is basically just, however, because both shove the costs of correction onto taxpayers in general, rather than allocating them to the customers of the specific industries involved.

A more serious objection to these methods, however, is that they provide no incentive to reduce the costs of the anti-pollution activities. A federal law, properly enforced, with penalties for violations—penalties large enough to make it worthwhile to prevent pollution rather than to pollute and then pay the fines—would provide such an incentive. Polluters would be forced to incorporate the costs of anti-pollution methods into their regular business costs, and competition would presumably result in passing these costs along to the consumers of the goods, those who should be bearing them. This system, moreover, enlists the powerful force of private enterprise to improve the methods and reduce the costs of eliminating pollution, and limits the government's role to its proper one of standard-setting and enforcement.

Another form of pressure on polluters is the class action suit for damages. Still another is the old (and, it would seem, recently discovered) law providing for a reward to a person who reports a violation of an anti-pollution statute. A third is the public interest suit, brought by a public interest law firm.

Costs and Impacts

Substantial reduction of pollution will cost a lot of money. There really are no reliable estimates, and guestimates have ranged from two or three billion dollars annually to \$20 billion or more per year for many years to come.

These are big figures and, quite naturally, have raised the question whether reducing pollution will have the effect of reducing our standard of living as represented by the flow of consumer goods. The concern is unfounded. Substantial anti-pollution efforts may indeed reduce the rate of increase of *some* types of consumer goods but, if properly managed, will increase, not reduce, the real national income.

continued on page 24

Among Ourselves

An informal collection of items, including news of the faculty, of alumni, and of the school, and assorted other information, opinion or comment that we think will interest you,

Student Lounge is Run as Business Enterprise

Would you believe 5,000 cups of coffee a week? One hundred dozen doughnuts? Sixteen part-time student jobs?

What started out as a coffee urn many years ago is now a full fledged lounge operated as a business enterprise with the Student Council of the Graduate School of Business Administration functioning as the board of directors.

Those 5,000 cups of coffee and 100 dozen doughnuts represent part of the sales of the Student Lounge, which now occupies two rooms. Profits from the lounge go to support student projects, such as the student loan fund, the student scholarship fund, subsidies to student clubs, and improvements to the lounge. This year, profits went to purchase blue books for all students in the business school, and to support the course evaluation project of the student council.

The lounge used to be furnished with sandwich machines as well as other refreshment dispensing machines. However, the student council board of directors decided that they could increase their profit margin by eliminating the "middle man," and thus the machines were banished (except for the soup machines) and sandwiches and other foods formerly provided by the machines are now sold "over the counter." "This way," said a student council member, "we can shop around for the best sandwich supplier at the least cost and increase our profit margin."

Another way students figured they could increase their profit margin

was to improve their facility. Thus they borrowed from the School's Administration and bought new equipment, such as a milk cooler and a sandwich display case. Air conditioning and an air filtration system were also installed.

Student Council hires a lounge manager each semester, who in turn hires student employees to operate the lounge. At present, 16 students are employed on a part-time basis. None works more than 10 hours a week. "It's sort of an unwritten law," says Bruce Everard, former lounge manager who graduated with his BBA in December, "not to hire anyone for more than 10 hours a week, so that working does not interfere with studying." Student Council also employs an accounting student to keep the books for the lounge management. The Lounge is open 8 a.m. to 5 p.m. and from 7 p.m. to 10 p.m. five days a week. Saturdays it's open from 8 a.m. to 10 p.m. and Sundays from 2 to 10 p.m.

The Lounge is not the only operation run by the Student Council for the benefit of student projects. In addition, a copying machine is leased by the Student Council and placed in the library for the use of students and faculty (copies cost a nickel a page). The Lounge management also acts as a rental agent for student lockers in the School.

Student Council Sponsors Course Evaluation Project

The Student Council of the Graduate School of Business Administration has initiated a course evaluation

project which is now in its third year for all faculty members. The project serves as an aid to students in selecting their courses and as a source of feedback to the instructor of the value of the course he is teaching. The idea is not new; the Council has provided this service for some faculty members for many years but the service is now used by all members of the faculty and the computer is used in the process.

At the end of the semester, the Student Council distributes a three page questionnaire to students in each class. Questions are designed in such a way that they can be tabulated by a computer. For example, in the section entitled "instructor," students are given a rating system running 1 ("strongly agree") through 5 ("strongly disagree") and asked to place the appropriate number beside the following statements:

Instructor holds my attention throughout the entire lecture.
Instructor gives clear and systematic explanations.

Instructor is well organized.
Instructor's speaking ability is very good.

Instructor stimulates discussions during class.
Instructor is sensitive to my level of comprehension.

Instructor encourages me to do original thinking.

A similar section covers other aspects of the course, such as required reading, class time spent on each topic, integration of lectures and reading assignments, and fairness of tests. In addition to the rating questions, students are asked to tell what they feel are the three best, and the three worst aspects of

the course, and to give their general opinion of the course.

The results of the questionnaires are then tabulated by computer and placed in the library, so that any student or faculty member may refer to them for a student evaluation of any course.

BBR Publishes Working Papers

The Bureau of Business Research has recently issued a new series of faculty Working Papers. The purpose behind the Working Papers is to open a new channel by which faculty members and advanced students can make known the results of their research at any stage and thus benefit early in their work from insights and experience of their colleagues. Papers in the series are reports of proposed research, studies in progress, or completed research.

The papers cover a wide range of topics. One major topic, a research project on evolving competitive aspects in major industries, has already been the subject of four different Working Papers. Other topics in the series include consumer behavior, a method of utilizing experts in forecasting, and global capital markets. A paper on the sources and uses of information in the development of minority enterprise is now in preparation.

A list of Bureau Working Papers may be obtained by writing to: Bureau of Business Research, Graduate School of Business Administration, University of Michigan, Ann Arbor, Michigan 48104.

Business School Well Represented at Annual Statistical Meeting

Five members of the Statistics Management Science faculty of the U-M Business School were on the program of the 130th annual meeting of the American Statistical Association, held recently in Detroit. The faculty members and the titles of their contributed papers are:

"Forecasting the Local Area

Demand for Main Telephones" by D. M. Dunn (a recent Ph.D. graduate in statistics and management science), W. Allen Spivey, professor of statistics, and W. H. Williams; "An Application of Regression Analysis in Regional Economic Research," by Dick A. Leabo, professor of statistics; "A Bayesian Analysis of a Binomial Model with a Partially Informative Category," by Marvin J. Karson, assistant professor of statistics and William J. Wroblewski, associate professor of statistics and "A Statistical Cost Analysis of U.S. Automotive Production," by Roger L. Wright, assistant professor of statistics.

Faculty News

Dennis F. Reinmuth, associate professor of insurance, is co-author of a study titled "Automobile Insurance Assigned Risk Plans" recently published by the U.S. Department of Transportation. The study was a part of the \$2 million, comprehensive review of automobile insurance being conducted by the Department of Transportation that is expected to influence the overhaul of automobile insurance practices. The study was also one of the few to be reviewed by the *New York Times*. In addition, Dr. Reinmuth's testimony concerning automobile insurance before the U.S. Senate Antitrust and Monopoly Subcommittee last December (1969) has been translated and reprinted in the *Japan Insurance and Banking News*.

Vern Terpstra, associate professor of international business, has been elected to a two year term as president of the Association for Education in International Business.

Carl H. Fischer, professor of insurance and actuarial science, has been elected a vice-president of the Conference of Actuaries in Public Practice. In addition, he is the author of a monograph entitled "Vesting and Termination Provisions in Private Pension Plans" which is being published by the American Enterprise Institute for Public Policy Research.

D. Maynard Phelps, professor emeritus of marketing, was recently elected vice president of the Interaction Marketing Federation for the Americas for a two year term. This is a federation of 27 national marketing associations. He is also the editor of a book just published by Richard D. Irwin, Inc., *Product Management, Selected Readings* (1960-69), sixth volume in the AMA Reprint Series. This book on product management will be translated and published in Spanish by the Regional Technical Aids Center (AID) of Mexico, D. F. in the near future.

Arthur F. Southwick, professor of business law, has written a chapter entitled "The Law of Hospital Liability" for the book *1970 Legal Medicine Annual* published by Appleton-Century-Crofts. He is also the author of an article "Hospital Licensure," published in the Journal of the American Hospital Association in September, 1970 and condensed in the October issue of *Trustee*.

Joseph W. Newman, professor of business administration, has received a third successive annual grant of \$10,000 from the A.A.A.A. Educational Foundation, Inc., to help support his continuing research on consumer purchase decision processes.

William H. Jean, associate professor of finance, has written a book entitled *The Analytical Theory of Finance* which was published in September by Holt, Rinehart and Winston, Inc.

John H. Stanim, assistant professor of industrial relations, has been appointed to the arbitrators and fact finders lists of the Michigan Employment Relations Commission, and accepted as a member of the National Labor Panel of Arbitrators of the American Arbitration Association.

Karl G. Pearson, professor of business administration, is preparing a monograph for the Institute of Science and Technology on industrialized housing. He gave an address entitled "Big Business Discovers Real Estate" before the annual convention of the National Association of Real Estate Boards.

continued on page 23

Assembly Hall

Only \$400,000 in additional funds needs to be raised by the Graduate School of Business Administration to make the first big expansion of the School's existing physical facilities a reality,

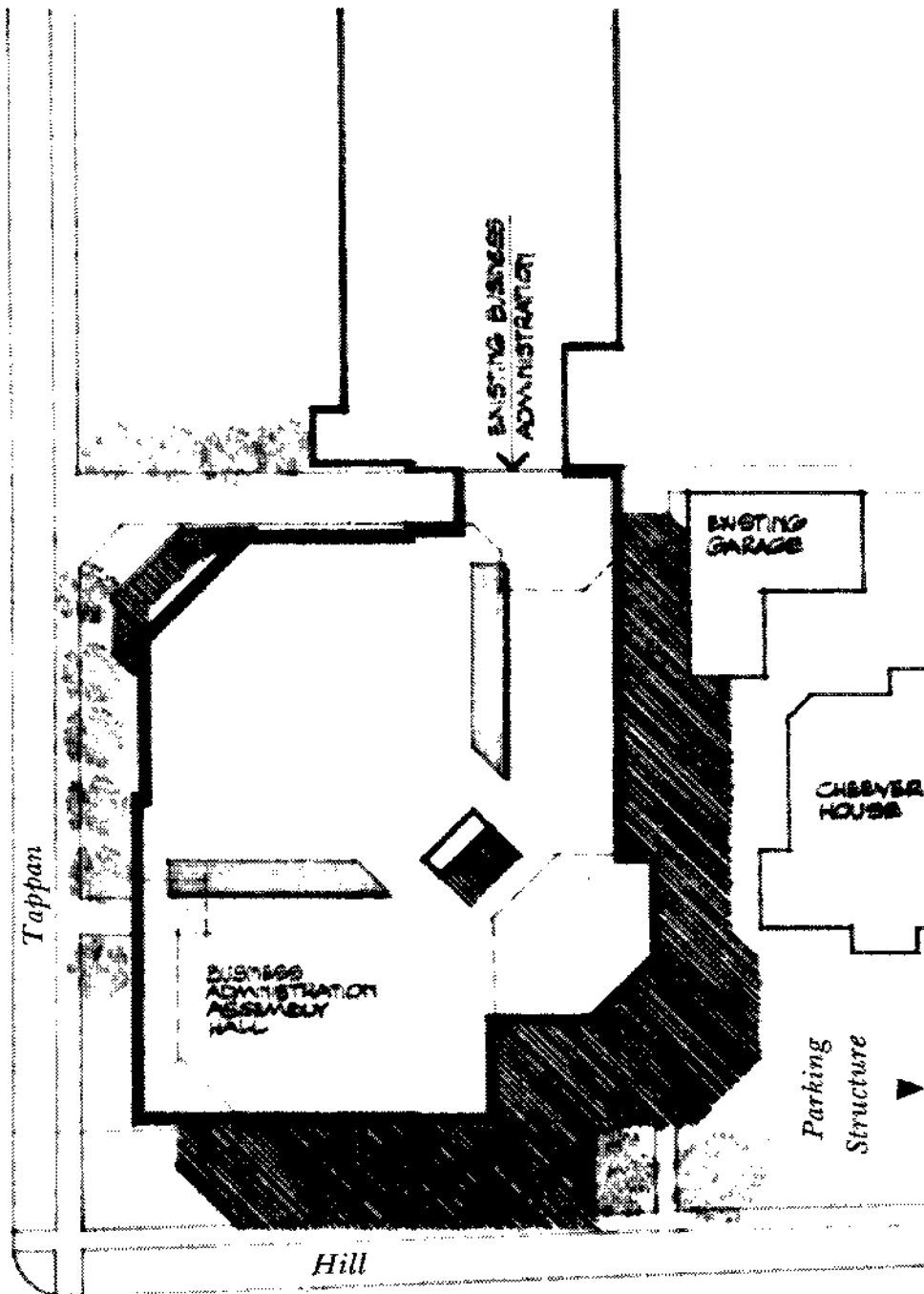
On December 31, 1970, the funds already in hand from advanced gifts for the construction of the building stood at 11,150,000.

Architects estimate the total cost of the project including utilities and landscaping to be \$1,550,000.

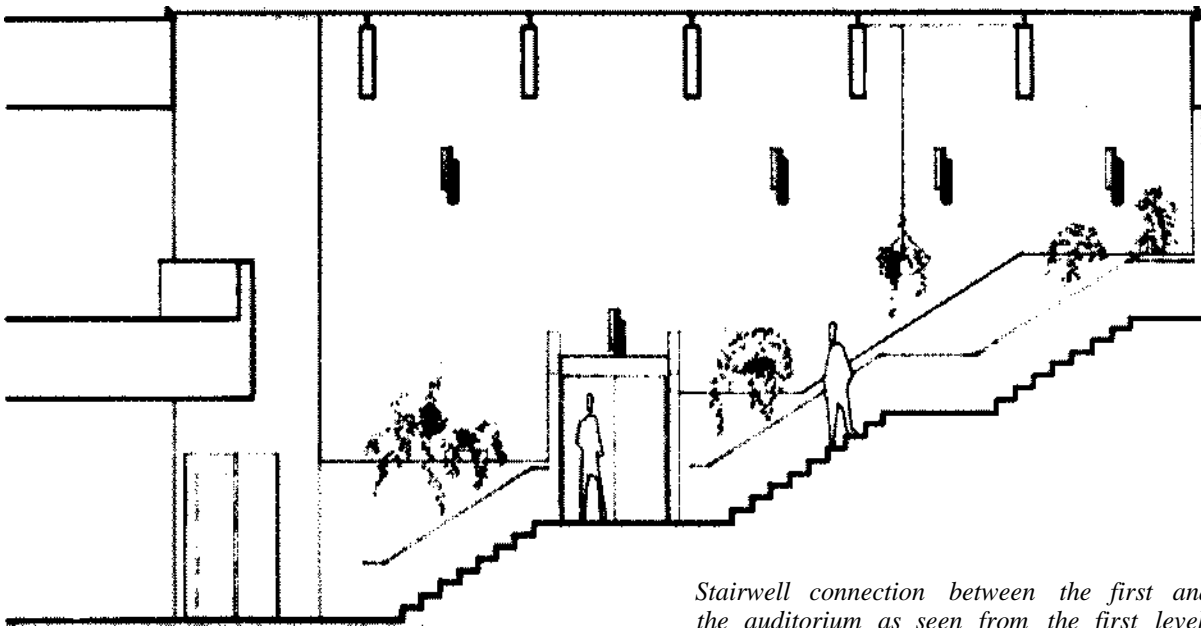
The financial drive to construct the building was triggered by a \$325,000 gift from a former professor in the School, Clayton G. Hale, of Cleveland. The auditorium in the new structure, designed to seat 450 comfortably, will bear his name.

The new structure will be located on the corner of Tappan and Hill Streets and will be connected to the existing building at the second-loor level (see drawing at right).

A spacious "walk-through" on the ground level will allow foot traffic from the new 450-car parking structure easy access to Tappan Street. Haven Street has been closed, most of the houses on the two blocks between Tappan and East University Avenue removed, and the four and one-half level parking structure facing Hill Street completed.



The east side of the building, or the side you would see when walking toward the building from the newly completed 450 car parking structure.



Stairwell connection between the first and second levels of the auditorium as seen from the first level of the auditorium.

The First Level

The new structure will add three badly-needed "case discussion" rooms to existing facilities (see floor plan at right). All will be equipped with overhead projectors and other modern equipment.

The "Executive-in-Residence" quarters, also on the first floor, have been financed by a gift from the Clark Equipment Company in honor of George Spatta, who served the Company many years as Chief Executive Officer and who was the first Executive-in-Residence on the Michigan campus.

The "Board Room" on the second level will provide excellent facilities for meetings of the School's Visiting Committee, members of the School's new

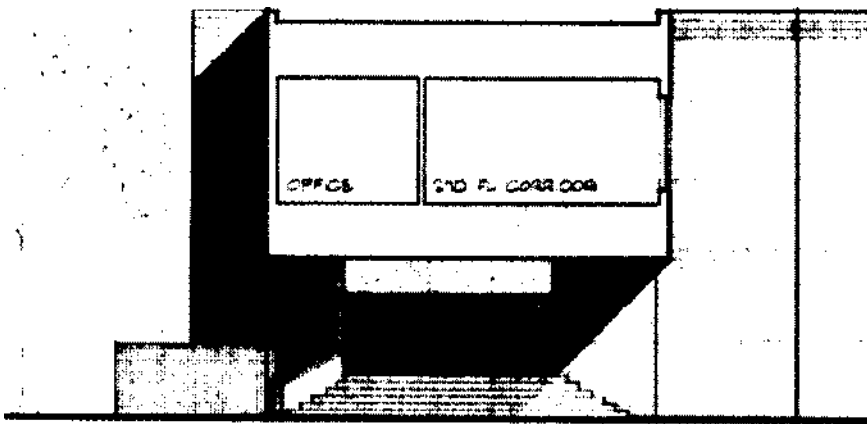
Associates Program, and other groups. A gift from the American Electric Power System, which has extensive interests in the state of Michigan, will facilitate the construction and equipping of the Board Room.

Several individuals have made gifts and pledges following the mailing of the Business School Assembly Hall brochure last November. Two members of the School's administration have each contributed \$1,000.

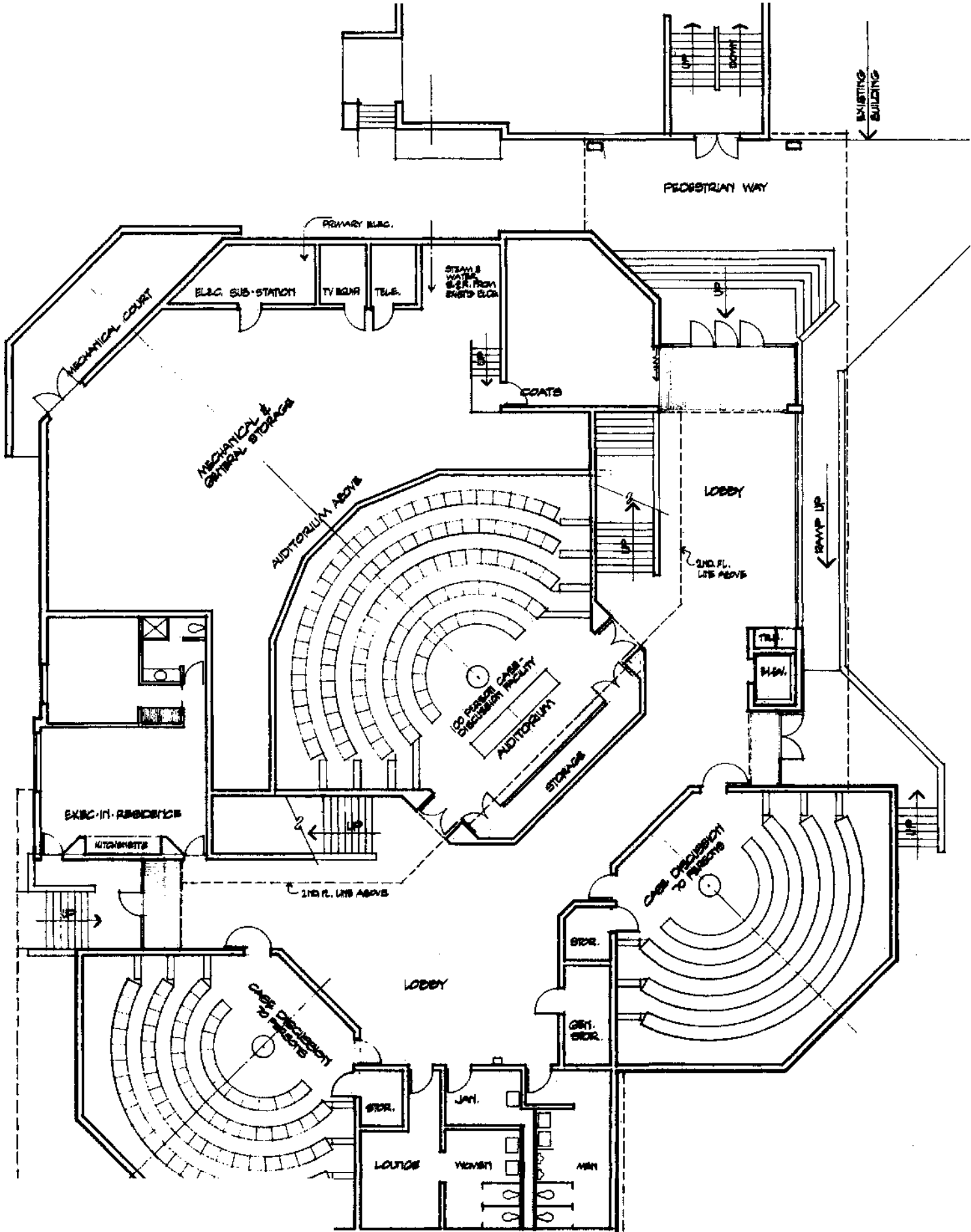
Final preliminary architectural plans were approved last August, and the architects, O'Dell, Hewlett, & Luckenbach, Inc., of Birmingham, Michigan, plan to have final working drawings ready in a few days.

If we can obtain in the next few weeks a good share of the remaining \$400,000 needed, it will be possible to go out for bids yet this winter, and begin construction in the spring.

The School's educational long-range plans call for the use of this new facility beginning in the fall of 1972. The facility will be used fully throughout all twelve months of the year. During the regular academic year, the Assembly Hall will be a tremendous boost to students enrolled in the School's regular degree programs. In the spring and summer, it will be effectively used in the School's residential management programs as well as in the regular degree programs. Needed, \$400,000.

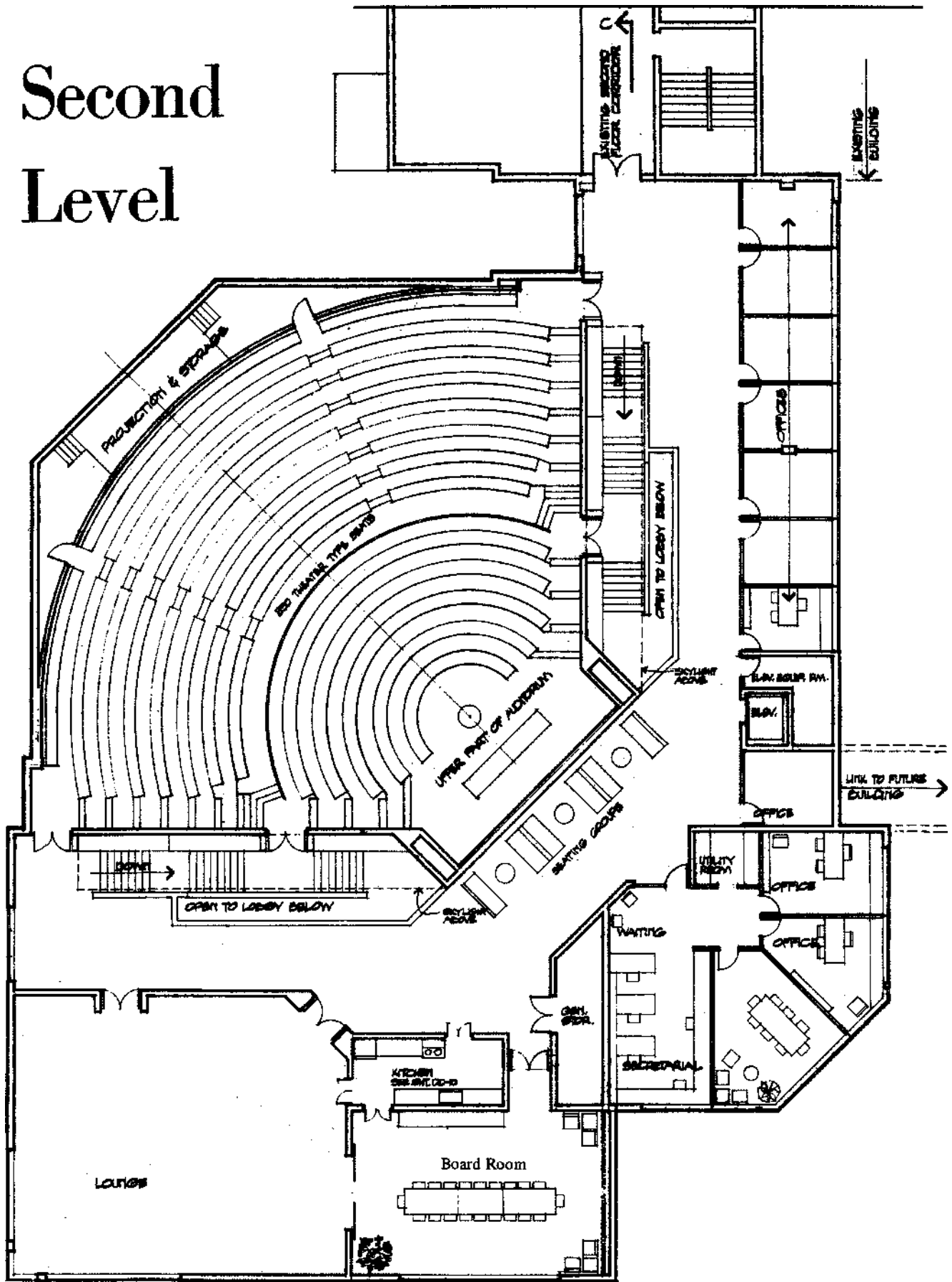


The main entrance to the Assembly Hall faces north. Above it is the corridor connecting the existing building with the new structure. See upper right hand corner of opposite page for location of main entrance.



The first floor includes three case discussion rooms, as well as "Executive-in-Residence" quarters.

Second Level



The second floor includes "Board Room" facilities for the School's Visiting Committee, members of the School's new Associates Program, and other groups, as well as additional auditorium seating and space for offices. The second floor is connected to the existing building (see upper right hand corner of floor plan).

Faculty News

continued from page 18

Sidney L. Jones, professor of finance who is now on leave to serve as special assistant to the Chairman of President Nixon's Council of Economic Advisers, is the author of several recent publications. They include "The Compatibility of Commercial Goals and Research," published in the *Michigan Business Review* in May, 1970; "The Current Domestic Economy," which appeared in the September issue of *Transitions: Current Domestic Forces Affecting Foreign Policy Decisions* published by the Foreign Service Institute of the Department of State; "Economic Policy: National Institutional and Individual Issues," published in *Brigham Young University Studies*, autumn, 1970; "The Future Availability of Money for Housing," published by the U-M Institute of Science and Technology in *Manufactured Housing in the 1970s*; and "The Political Economy in 1970," which appeared in the *Proceedings of the Seventeenth Pitt Conference on Business Prospects*.

William K. Hall, assistant professor of statistics, is co-author, with R. L. Disney, of "Systems of Queues in Parallel Under a Generalized Channel Selection Rule," to be published in the *Journal of Applied Probability*; and co-author, with J. O'Day, of "Causal Chain Approaches to the Evaluation of Highway Safety Countermeasure Programs," to be published in the *Journal of Safety Research*, Winter, 1971.

Mary C. Bromage, associate professor of written communication, has written several articles including "Defensive Writing" published in the *California Management Review*, Fall, 1970; "Accountants and the Written Word," published in *The Singapore Accountant*; "The Businessman's Options in Buying a Dictionary," in the November, 1970 *Michigan Business Review* and "Auditor's Jargon" in *The Internal Auditor*, Nov.-Dec., 1970.

Rex V. Brown, associate professor of business administration, is author of a new book titled *Research and the Credibility of Estimates: An Appraisal Tool for Executives and Researchers*. Published by the

Harvard University Graduate School of Business Administration, the book should, in the words of one reviewer, "be required reading for every executive who uses the results of sample surveys as a basis for decision-making." The first five chapters deal with research appraisal for the executive with an interest in the planning and interpretation of research as well as for the researcher concerned with meeting the executive's needs. The last 10 chapters are addressed to the technical specialist who may be called upon to apply the proposed analytical techniques to specific problems. Examples and case histories are supplied to illustrate the procedures.

David L. Lewis, professor of business history, has published eleven articles on the life of Henry Ford and the history of Ford Motor Company in the two magazines *Model T Times* and *Ford Life*. He has also published an article entitled "Auto Brought Biggest Change" in the November-December issue of *Antique Automobile* which, with a circulation of 25,000, is the largest publication in its field.

Thomas J. Schriber, associate professor of statistics, gave a three hour tutorial in discrete systems simulation using GPSS/360, a special purpose language developed by IBM. The tutorial was given at the fourth conference on Applications of Simulation, held in December in New York. He also was co-author of a paper given at the conference, "A Simulation Study of the Size Distribution of Firms."

Articles by /. Philip Wernette, professor of business administration on current business conditions appeared in the April, July, and October, 1970, issues of *Tempo*, the publication of the Ohio Citizens Trust Company of Toledo where Professor Wernette is a member of the board of directors and economic adviser to the bank. Wernette and Professor Saul Hymans of the university's department of economics are coauthors of an article, "The Impact of the Federal Budget on Total Spending" which appeared in the September 1970 issue of *Business Economics*, the journal of the National Association of Business Economists.

Paton Keeps Busy

Since teaching his last regular class at Michigan in 1958 Professor Emeritus W. A. Paton ("Bill") has never previously submitted any information to the "Newsletter," "Dividend," or any other school publication, (although he does report annually to Dean Bond). He says his reluctance to provide data as to his activities may be partly due to observing the willingness of some people to make news items out of incidents hardly more noteworthy than stepping outside the Ann Arbor city limits. However, he has finally been persuaded to furnish the following brief account of some of his "doings" since going on retirement furlough:

1. Part-time teaching and lecturing assignments, ranging from a couple of weeks to an academic year in length, at 14 universities and colleges in 10 states.

2. Post-retirement writing including: two books, "Corporate Profits" (Dow-Irwin, 1965), and "Assets-Accounting and Administration" in collaboration with his son and namesake (Roberts & Roehl, 1970); 35 articles, appearing in a dozen periodicals (including three recently written and now in press).

3. Addresses to accounting groups and other organizations, from 1959 on, total 150, (including two talks to Michigan accountants—roughly 150 in each audience—during fall semester, 1970, in Grand Rapids and Frankenmuth).

4. Numerous consulting engagements and appearances as expert witness before courts and commissions (including three on behalf of U.S. Department of Justice).

5. Other activities include: continuing service on board of trustees of Foundation of Economic Education, Inc.; member board of trustees of Earhart and Relm Foundations (until May, 1970); member board of directors of KVP Sutherland Paper Co. (until 1963); attendance at annual meetings of *Mont Pelerin Society* in Austria, Italy, France and Great Britain; member advisory committee on research study of goodwill, under the auspices of the Accounting Principles Board of the AICPA.

Does GNP Mean Gross National Pollution?

continued from page 16

The table quantifies this reasoning. The first column shows the real gross national product (including outlays on reduction of pollution) growing at an annual rate of four percent, with outlays on pollution reduction remaining at a constant percentage of the total. The next column shows a schedule of outlays—presumably mostly municipal and industrial—on pollution control. The total of these outlays is subtracted from the GNP, in the third column. Actually, the private part of these outlays that goes into plant and equipment would be counted as part of "Gross Private Domestic Investment"—part of GNP. Since, however, it would not contribute to an increase

gain in our standard of living. If the costs of reduction of pollution are less than the harm averted, the real national income is increased. In short, a part of the column "Billions Spent for Reduction of Pollution" is *itself* a measure of gain for the American people.

The harm done by pollution cannot be measured accurately. Estimates of the money value of damage by air and water pollution run to tens of billions of dollars annually. That condition illuminates the answer to the question, "Can we, as a people afford the cost of billions required to reduce pollution to a tolerable level?" The answer is that we can't afford not to go ahead in

A Pattern of Output—in Billions of 1971 Dollars

Year	GNP Including the Amounts Spent for Reduction of Pollution	Spent for Reduction of Pollution	GNP Minus Pollution Outlays	Increase in GNP (excluding Pollution Outlays)
1971	\$1,050	\$10	\$1,040	
1972	1,092	12	1,080	\$40
1973	1,136	14	1,122	42
1974	1,181	16	1,165	43
1975	1,228	18	1,210	45

in consumer goods the entire amount has been deducted in arriving at the measure of output in column three.

There will be, in short, a rearrangement of output with substantially more effort going into the prevention of pollution—as a part of the total production process. The consequent slowdown in the rate of increase of final goods and services should not, however, be regarded as a complete loss, because the increase in the clarity of water and air is a good in itself—which is over and above that included in the 3rd and 4th columns. And the decrease in the damaging effects of water and air pollution, which at the present time are being borne by our people, must be counted as a positive

all cases where the cost of reducing pollution is less than the damage eliminated.

In those cases where the cost of reducing pollution is greater than the damage, fairness requires that the polluter reimburse the injured party.

The Ultimate Solution

Consideration of the present magnitude of the pollution problem, and the prospect that it will be multiplied many times in the future if nothing is done about it, points to what must be the ultimate solution to the problem—namely the re-use of waste, or "recycling." A simple example will illustrate a present practice. In some oriental regions,

workers go about with pails, euphemistically called "honey pots," slung on yokes on their shoulders, picking up human excrement which is taken out to the countryside and spread on the fields, thereby accomplishing its disposal as it reenters the productive process as fertilizer. Many of us Americans have ridiculed this process and have exhibited contempt for its users. The ridicule and the contempt seem somewhat odd when one considers what *we* do with the stuff. *We* put it into our drinking water.

The final solution to the twin problems of depletion of natural resources and disposal-pollution must emerge from the efforts of scientists, engineers, and business managers to devise ways of economically utilizing waste products by putting them back into the productive process and thereby accomplishing a circulation of physical material through production to consumption and back to production again. Industry is already doing this—perhaps to a greater extent than is generally realized. Many firms are speeding the development of processes and equipment for re-using otherwise waste materials. Progress is being made. More is needed. More will be made in the future.

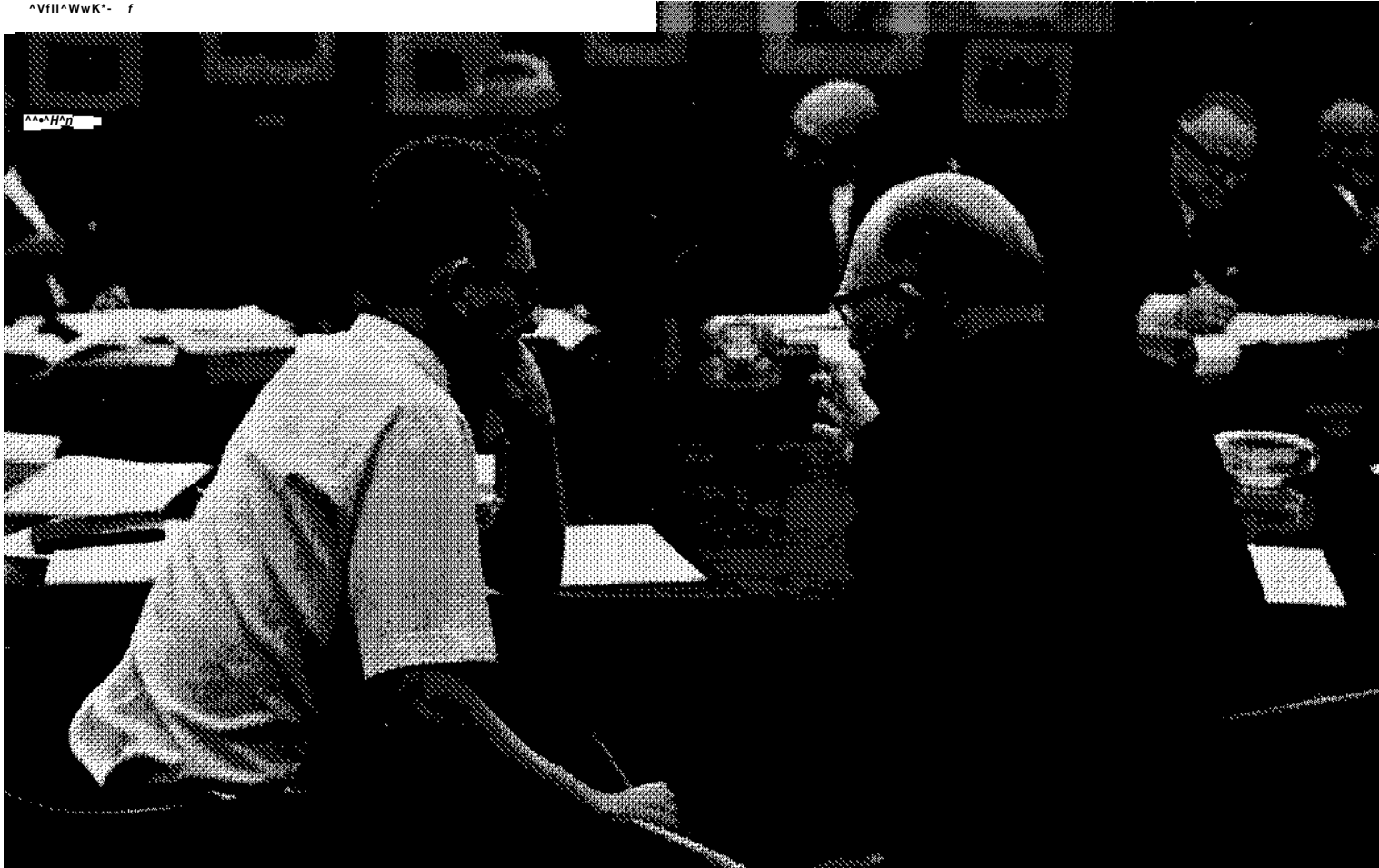
Industry & Sesame St.

continued from page 7

underwriting Saturday morning telecasts for station WNDT in New York City, enabling a five-hour block from 8 a.m. to 1 p.m. of *Sesame Street* programs to be seen each weekend.

Beginning this fall, GF added 20 stations across the country from New York to Detroit to Los Angeles, and including the nine-station Alabama network, in a \$300,000 Saturday grant that is among the largest individual grants ever tendered to the public broadcasting community.

The Children's Television Workshop is seeking other corporate "good citizens" to finance other important projects, ranging from total support of a city-wide utilization program, to help in opening up a single store-front Viewing Center.



Top Executives Visit School

Almost all of the members of the School's Visiting Committee attended the second annual meeting of the group in December.

Topics under discussion included ways to increase black enrollment in the School, plans for the Assembly Hall (see page 19), the launching of the Associate's Program, ideas for a more effective alumni organization, and the growing tendency of college students to reject business as a career.

Membership on the Committee, which was formed to provide closer ties between the School and the business community, is well balanced both geographically and functionally. Members include:

H. Glenn Bixby
Chairman of the Board
Ex-Cell-O Corporation

O. C. Carmichael
Chairman of the Board
Associates Corporation of
North America

Peter B. Clark
Chairman of the Board
The Detroit News

Donald C. Cook
President
American Electric Power Company,
Inc.

Richard C. Gerstenberg
Vice Chairman of the Board
General Motors Corporation

Clayton G. Hale
Chairman
The Hale & Hale Company

Otto N. Miller
Chairman of the Board
Standard Oil Company of California

H. Bruce Palmer
President
National Industrial Conference
Board

Ray T. Parfet, Jr.
Chairman of the Board
The Upjohn Company

Raymond T. Perring
Chairman of the Board
The Detroit Bank & Trust Company

Ward L. Quaal
President
WGN Continental Broadcasting
Company

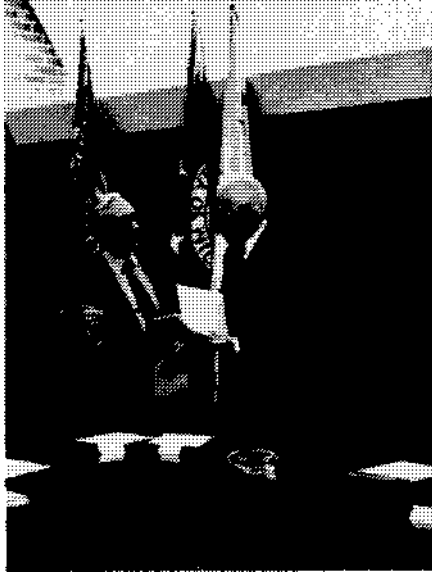
William E. Schiller
Chairman of the Board
Hershey Foods Corporation

Walter E. Schirmer
Chairman of the Board
Clark Equipment Company

Lynn A. Townsend
Chairman of the Board
Chrysler Corporation

Said Dean Bond, "The School gains immensely from the wise counsel and loyal support of these business leaders. At the same time, we hope that they will find their contacts with the School equally stimulating and rewarding."
Continued next page.





Architects' drawings of the proposed Assembly Hall are presented by Dean Floyd A. Bond to the afternoon session of the Visiting Committee (facing page). Photographed during this meeting were: (top of page), Walter Schirmer, Chairman of the Board, Clark Equipment Company (left) and Richard C. Gerstenberg, Vice Chairman of the Board, General Motors Corporation. Above left are Dean Bond and Alan McCarthy (right), Director of the U-M's Development Council. In the center picture D. O. Bowman, Director of the School's Management Programs, talks with Raymond T. Perring (right), Chairman of the Board, The Detroit Bank & Trust Company. Top right, H. Bruce Palmer, President of the National Industrial Conference Board. Below right, Donald Cook, President of the American Electric Power Company, Inc., checks a section of the agenda with Elaine Palmer, secretary to Dean Bond. Photos by Stuart G. Abbey.

The 20,000 Mile MBA

continued from page 14

students have difficulties in finding time to get to the library to read books on reserve, or getting to the computer terminal to solve computer problems. Says Jim Ardis, director of admissions for the business school who did most of his MBA work in the evening program,

"If you figure that you are in class two nights a week and work overtime one night a week, you see what the evening student faces. It's one long series of compromises. You either feel you've got to study or you feel guilty because you're not studying. And when you finally take off and go to the movies with your wife for the first time in six months you still have that nagging feeling that you ought to be home getting a paper written. The pressure in juggling work,

school, family is tough."

Perhaps that's why the faculty we interviewed to a man expressed admiration for the evening school student. Said James Pilcher, professor of finance who has taught in the evening program for 20 years, "Just last week a student came up to me in the hall and said, 'After six years, I'm finally getting my degree this month.' That kind of persistence and dedication commands a lot of respect."

Sesame Street

continued from page 6

Sesame Street cost less to produce, for instance, than the typical run of Saturday morning cartoons seen on commercial networks. Our average direct production cost has been some \$30,000 an hour, compared with \$110,000 for an hour of those cartoons. And while comparative costs are being discussed, it should be mentioned that it can cost up to \$50,000 to produce a 60-second advertising message that tells you what to buy to get rid of a nagging headache or tension probably caused by watching television commercials in the first place.

In our first season of telecasts we reached some seven million children between the ages of three and five—

and at a cost of less than one cent a day per child.

We think that is about the best educational bargain in history.

The opinion was borne out early in November, when an independent, nationwide study of *Sesame Street's* teaching effectiveness was completed and the results released to educators, the show's funders, and the press.

The two-year evaluation was commissioned of the Educational Testing Service of Princeton, N.J., and involved the testing before and after the series' first season of 943 youngsters in five areas of the U.S.

Among the most significant findings were:

- Disadvantaged children who regularly watched the show showed greater gains in learning than advantaged children who watched only infrequently.
- Children who watched the show the most gained the most.

—The skills that received the most time and attention on the program were generally the skills that were best learned.

— Three-year-old children had greater gains than older children.

— Children who watched the program showed greater gains in learning than children who did not, and this was true for disadvantaged inner-city children, advantaged suburban children, isolated rural children, boys and girls, and those whose first language was not English.

Dr. Samuel Ball, who directed the research, said in announcing the findings: "I think we have shown in this evaluation of *Sesame Street* that television can have a profound effect upon the learning of three-through-five-year-old children from widely diverse backgrounds, including a strong and positive effect on disadvantaged children."