"Continuous News Service Since 1881"

The Tech

"Three dragons and 13 griffins killed in bizzare auto accident on route 93."
—*UPI*

VOLUME 94, NUMBER 24 MIT, CAMBRIDGE, MASSACHUSETTS FRIDAY, MAY 10, 1974 FIVE CENTS

Finboard 74-5 budget set

By Paul Schindler

The Finance Board (Finboard) of the Undergraduate Association allocated its $67,000 budget for the 1974-75 school year last Sunday evening.

Several new activities were funded, and several old ones disappeared, including Urban Action which received $4,000 last year, but lost funding from the Community Service Fund and became defunct this year.

The most spectacular budget difference came in the "unallocated reserves" area; last year $9,185 went unallocated, while this year the figure is about $2,000.

"We had twice as many applications for funding this year as we did last year," Finboard Chairman Jack Van Woerkom '75 told *The Tech*, "but we only received the same amount of money to distribute."

Van Woerkom said that the budget process was nearly held up several days in order to resolve disputes about how much money to hold in reserve. "We had to do a lot of budget cutting to have $2,000 left over. It is going to make things really tight this year." he added.

"Our most serious problem," Van Woerkom said, "is the fact that we have no input to the Dean for Student Affairs budget decisions."

Unallocated reserves are used at the discretion of Finboard during the year to aid student activities with unexpected needs

(Please turn to page 10)

Activity	73-74	74-75
African Student	600	---
Automobile Club	100	100
Bridge Club	100	000
BSU	---	440
Chinese Students	---	400
Dance Workshop	375	---
Debate Society	800	800
Ecology Action	---	200
Electronic Research	430	150
Logarythms	---	100
Minority Arts	---	380
MITV News	---	1080
Pershing Rifles	150	105
Plant Club	50	---
Right to Choose	310	500
Rocket Society	350	320
SACC	---	280
Science Fiction	250	990
Strategic Games	120	70
SHL	---	350
TCA	7535	10000
Tiddlywinks	50	---
Tropical Plant	75	145
RUKU	---	840
UHF Repeater	---	180
Urban Action	4000	---
WIMX	---	225
WTBS	7000	9880
TOTAL	22495	27535

Jack Van Woerkom, chairman of Finboard.
Photo by Dave Green

Tuition will go up: $3550 likely 76 amt.

By Jules Mollere

A six percent increase may raise tuition by $200 during '75-76, to a total of $3,550 per year.

Any increase in MIT's tuition for the 1975-76 school year will, according to Chancellor Paul Gray, "hopefully be down to a more normal rate of 5 or 6 percent" as opposed to the 8 percent increase scheduled for '74-75.

Gray said that some sort of a tuition increase is inevitable. "As long as we have such a high level of inflation, tuition has to go up at a comparable rate," Gray explained, "and not a single economic seer as stated that he expects inflation to suddenly disappear."

Gray added however that the scheduled 8 percent ($250) increase for this coming term was necessitated by an inflation "unusually higher than anyone could have predicted' and that he doesn't expect so large an increase to be needed again. "We're hoping that inflation won't be so bad all through this year and I personally don't think it will be . . . The academic council will decide how much of a tuition increase we do need and I wouldn't like to predict what the final figure will be."

According to Stuart H. Cowen, Vice-President for Financial Operations, this $250 increase was announced "before the full impact of the energy crisis was known to be so severe."

"In the 1973-74 budget we estimated our energy costs at $3.2 million and we've spent over $4.5 million on energy already this year. In fact if we hadn't taken any conservation measure, we would have lost another $800,000.

Cowen said that he expects the Institute's energy bill to be up to $5.1 million by 1975 and that he "can't see how this can fail to have an impact on housing and tuition rates."

Admissions

When asked how such a $200 increase might affect a student's decision to come to the Institute or not, Director of Admissions Peter Richardson, replied that he did not think such a "small" change would matter "in and of itself."

Jack Frailey, Director of Student Financial Aid, agreed that the effect on students receiving aid would be cushioned. "We've adopted a very clear position. We will meet the increased needs of our students. An increase is going to make that harder to do but the only people who will be hurt are those who don't ask for help."

Frailey said that his office would send a proposal to the

(Please turn to page 10)

Statistics describe '78 class

By Stephen Blatt

Next year's Freshman class of 1000 will be 20 per cent female.

According to Peter H. Richardson, Director of Admissions, as of Wednesday afternoon MIT has received 975 acceptances from 1700 people MIT admitted to the class of 1978 in March. Two hundred and fifty-three replies are still outstanding, but are expected this month.

"We figure to get 75 more kids," said Richardson, who explained that over the summer "75 to 100 people will melt away" for various reasons. A final figure will be available on Sept. 12 (three days after Registration Day). Richardson expects the number of freshmen to be 1000 "plus or minus 25."

The group of two hundred women in the class of '78 is the largest group of women ever to come to the Institute, both statistically and percentage wise. In addition, "there are more women in the new freshman class than in the entire undergraduate population of MIT ten years ago," notes Richardson.

Forty-four blacks have accepted admission to MIT, as opposed to 29 in the class of '77. There will be 6 Puerto Ricans, 10 Chicanos, one American Indian and 40 foreign students (not including Canadians) from about 36 countries.

The class size of 1000 was set in February by the Academic Council (see *The Tech*, Feb. 5, 1974). The Academic Council based its decision on academic and financial reasons, and on an increase in applications. The expected increase in female enrollment led to one of the remaining all-male dorms, Baker House, winning approval of its plan to go coed (see *The Tech*, April 2, 1974).

Richardson "would like to see more women" admitted in future years, but added, "how do you achieve it? By getting more quality applications." There will have to be "big changes in the way society perceives" the role of women. He explained that "what I want is that any woman who wants an MIT education can apply, confident that she'll be treated the same as any other applicant."

However, blacks pose "a more difficult problem," according to Richardson. "The situation for women can change fairly rapidly — they get the same education as their brothers." However, said Richardson, for blacks, "a whole community has to learn the ways of science and technology. The number with the necessary background today is very small."

Compton, Stewart given at Awards Convocation

By Jules Mollere

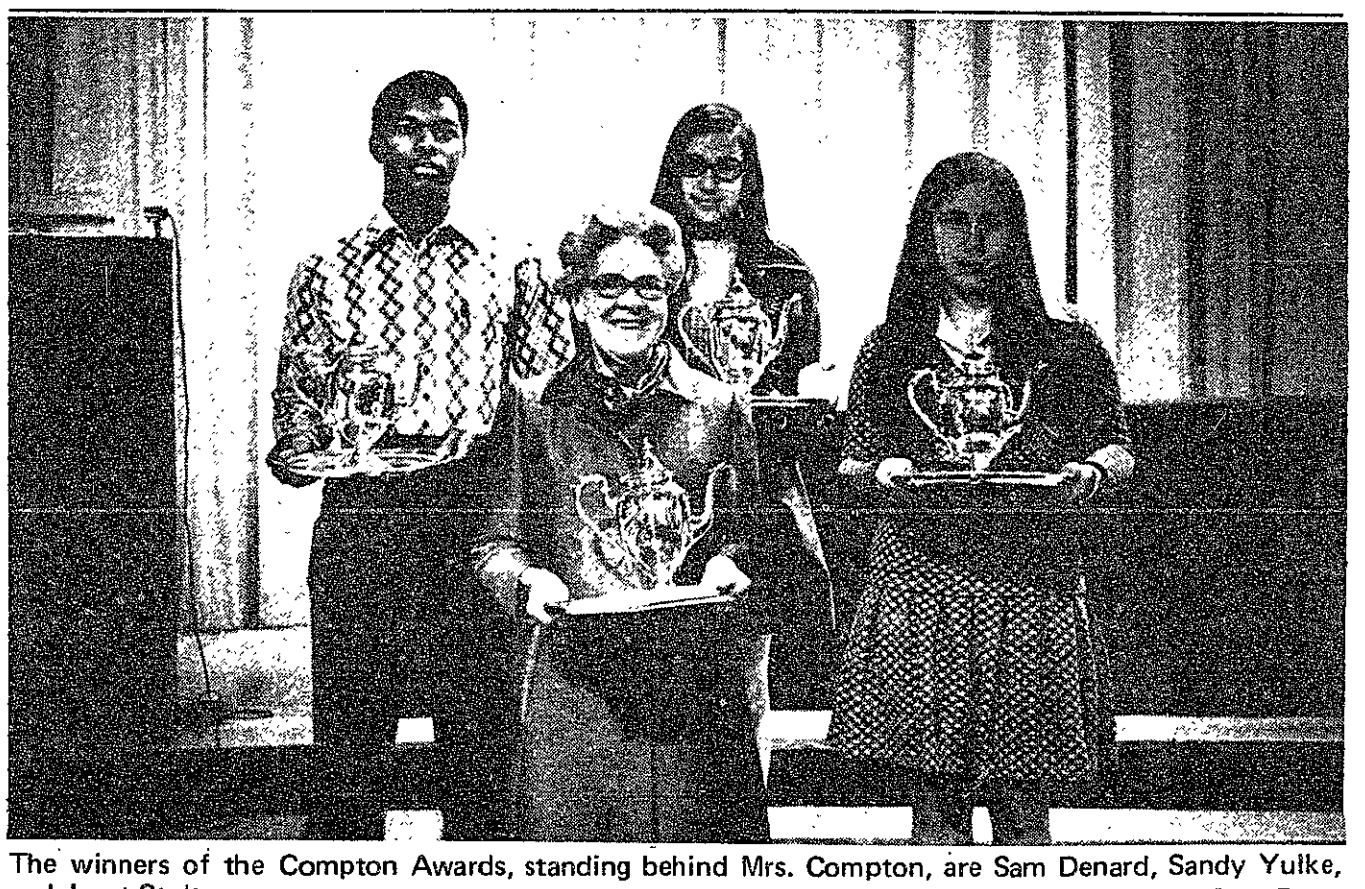
Seniors Sandra G. Yulke, Samuel Denard and Janet Stoltz were this year's recipients of the Karl Taylor Compton Prizes "for promoting high standards of achievement and good citizenship within the MIT community."

Mrs. Karl Taylor Compton presented the awards to the three recipients at yesterday's Award Convocation and praised them for "reinforcing our search for a better way of life . . . They have given clear evidence of their great humanity and sense of values."

Mrs. Compton herself received a facsimile of the Compton Award from Chancellor Paul Gray. "For the last 20 years that Mrs. Compton has been present at these award ceremonies . . . she has spoken freshly and persuasively for tolerance, brotherhood, and the rights of each person to be different."

"It is with mounting gratitude that I think of my coming to MIT," Mrs. Compton replied. "At no other campus that I have ever been on have I felt such a thrusting into the future, a dealing with reality . . . I congratulate and thank all of you."

The William L. Stewart, Jr. awards were given to thirteen students for "outstanding contributions to extracurricular life at MIT." The recipients were Okon M. Amana G (for his work with the African Student's Association), David Bernstein '74 (for his contributions to Burton House), Eric L. Bogatin '76 (help to physics undergraduates), Val Heinz '75 (Education Studies Program), Michael Kozinetz '75 (Tech Community Association), James Moody '75 (for his work in Baker House), Robert Henley (MIT Open House), Paul Pangaro '74 (Dramashop) and Theodore Shifrin '74 ("for educational studies in Math"). Joint awards were shared by four other people; Patricia Callahan '75 and Robert Ice '75 for this year's Residence/Orientation week and Robert Hunter G and Steven Taylor for organizing the Sha Na Na concert.



The winners of the Compton Awards, standing behind Mrs. Compton, are Sam Denard, Sandy Yulke, and Janet Stoltz.
Photo by Dave Green

Carmichael calls for revolution

By Stephen Blatt

"Once we have the total liberation of Africa under scientific socialism, the black man will have no problems anywhere in the world," according to Stokely Carmichael, who spoke Wednesday night at a meeting of the Black Student Union.

Carmichael, who was introduced as the man who "more than any other black man in America in modern times has strongly affected the political thought of African youth," explained that revolutions "must be run scientifically. When people move for their liberation, they must have precise objectives and crystal clear ideology."

"If the masses can't see the revolution then they can't fight for it," Carmichael told the audience of 100 people. He added that revolution "is a quantitive process – we have to have quantity before we can have quality."

Noting that "today MIT has many more black students than in 1964," Carmichael said that "they tell you that the reason you are here is because you are intelligent, better than others, that now we've got money so you can come."

But he characterized these as "lies," explaining that "you're at this university only because you are black. The reason you are here is that people died for you – in Chicago, Atlanta, Boston, Watts, Washington. In the 1960's our people had a spontaneous rebellion which shocked the white man into making some concessions. You are the concessions." He added that "that ain't racism – that's facts."

According to Carmichael, there are three problems facing the All African Peoples Revolutionary Party, "the base of which is Africa, the home of black men." These problems are lack of land, capitalism and racism. "Even in our homeland we face these problems," Carmichael said. "The highest political expression of racism find its home in South Africa."

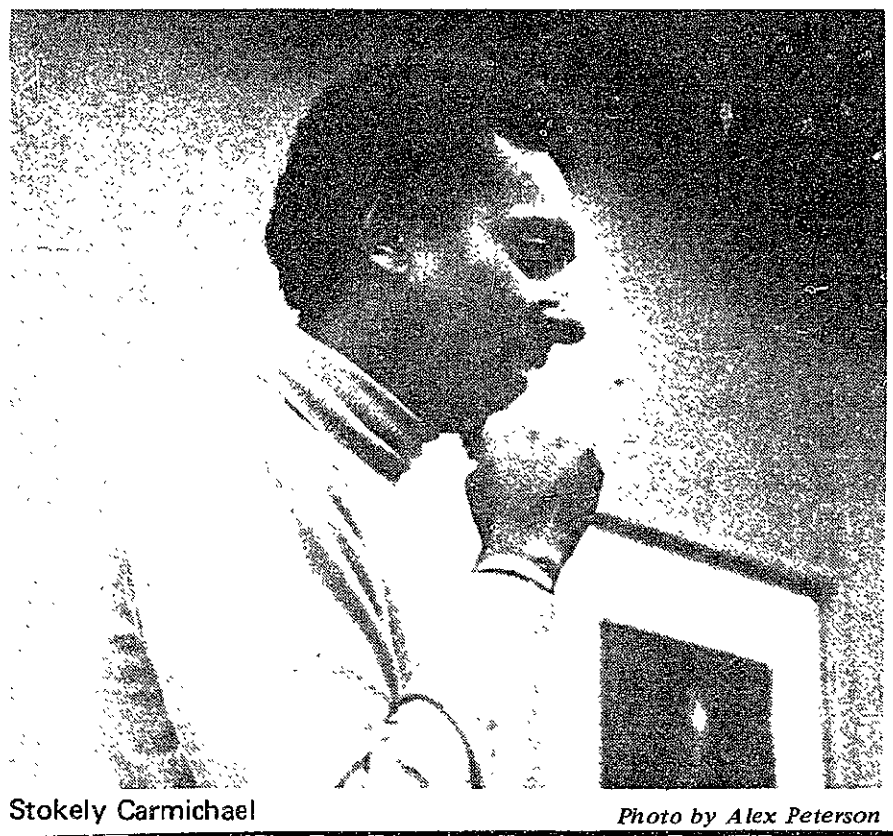
He added that "if we propose a solution, it must solve the problem." Scientific socialism will solve the problem of capitalism, since "socialism is diametrically opposed to capitalism – there is no room for compromise." Also, the other two problems will be solved since "when we control Africa, we will control the land" and racism in "our own land" is "ridiculous."

"Nationalism is a prerequisite for revolution," said Carmichael. "Malcolm is very important – we must read and study him properly." He predicted that "within the next few years the greatest struggle we will have is what nationality we have," and that Malcolm X had defined the problem as "black nationalism vs. white nationalism."

According to Carmichael, "the only struggle that will succeed is a just struggle. No matter how long it takes, a just struggle will win because justice is objective." Since "Africa is the only land the black man can claim justly" Carmichael said that the only nationalism for blacks is "Pan-Africanism."

"Many call themselves Afro-American, or Black-American," Carmichael said, "but few call themselves Africans." Yet "Africa is the richest continent in the world. When Africa is properly organized, it will be the most powerful nation on Earth."

Carmichael "hates America – if I could tear it down today, I'd do it. But every day I work to tear it down." He added that "creating and building is what a revolution is all about, but in order to build, you must destroy."



Stokely Carmichael

Photo by Alex Peterson

Whirlwind, pioneer computer, in retrospect

By Stephen Blatt

"MIT gives birth to 2-ton Baby" ran the headline in the *Wall Street Journal.* A "See It Now" special three-location live broadcast featured "it." "It" occupied an entire floor of 211 Massachusetts Avenue.

"It" was the Whirlwind Computer, the "first attempt at a real-time system, the first with magnetic core storage, the first cathode tube displays, the first synchronous electronic parallel machine, the first time-sharing machine, and the first to use a light gun with the CRT display," according to Professor Jay W. Forrester of the School of Management and director of Project Whirlwind.

Whirlwind was MIT's first computer project and one which led to the formation of the Lincoln Laboratory and MITRE Corporation, an MIT spinoff. It began in the late 1940's as an attempt to build a flight simulator which could respond in real-time to the pilot's actions.

As the first attempt at a real-time system, it ran into many problems. "It was the first type of system in which all errors had to be eliminated," said Professor Robert R. Rathbone of the Humanities Department, who served as "a writer and editor of news releases for non-technical readers." He added that "prior to Whirlwind some errors could be tolerated as noise" and that computer downtime (breakdowns) could also be tolerated.

The memory device for Whirlwind at first was electrostatic storage tubes, each of which stored 1024 bits with an access time of 25 microseconds. A 2500-volt electron beam "wrote" and "read" the information on the bits and a 100-volt electron flood replaced leakage and helped to retain stored information indefinitely. However, the tube turned out to be quite unreliable and a search for alternatives began.

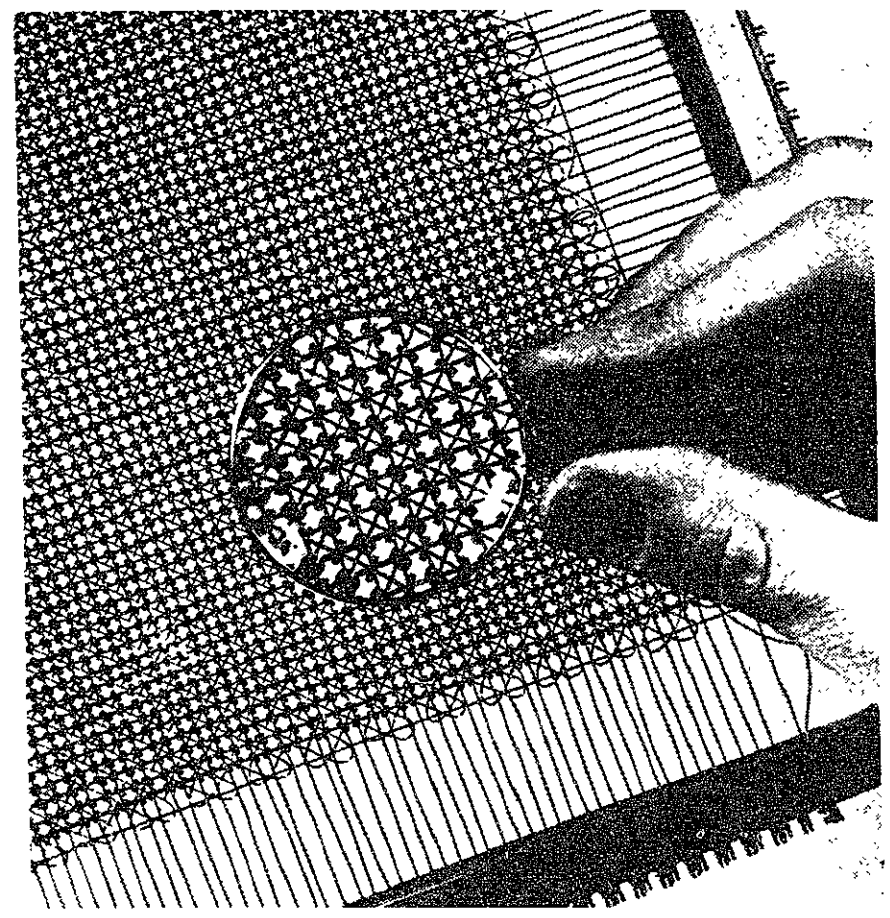
The first memory device was electrostatic tubes

Forrester "had been aware that what we were looking for was a non-linear element that could be read by coincident excitation of coordinate axes." He saw "an ad for a rectangular hysteresis loop, and proceeded to try to put that kind of material into a matrix structure. In a couple of days I had succeeded in principle," and soon had invented magnetic core storage.

"It was primarily the old story of necessity being the mother of invention," explained Forrester. "We needed high capacity, reliability and speed. The program, project, budget and reputations depended on it so we had to do something."

Magnetic core storage "dominated the computer field for the lifetime of the patent, to 1973, but now we are beginning to find new ways – there are new machines that don't use magnetic core storage." Forrester's invention also led to a court proceeding betwen IBM and MIT over the validity of the patent, which was settled out of court. "The patent was upheld," Forrester said. "Nearly all of the manufacturers have paid royalties," which go to MIT and the inventor.

"See It Now" arranged a TV show live from Whirlwind's location at 211 Massachusetts Avenue, (now the Graphic Arts building) with Edward R. Murrow in New York and an admiral in Washington, D.C., who asked Whirlwind to compute such things as the path of a missile, fuel comsumption, etc. While Rathbone recalled that "for every thing (in the computer) there was a backup and for every backup a backup," Forrester said that after the coast-to-coast TV show was over, he learned that "the plans for what to do if the computer didn't work had never been made."



Close-up view of magnetic core memory

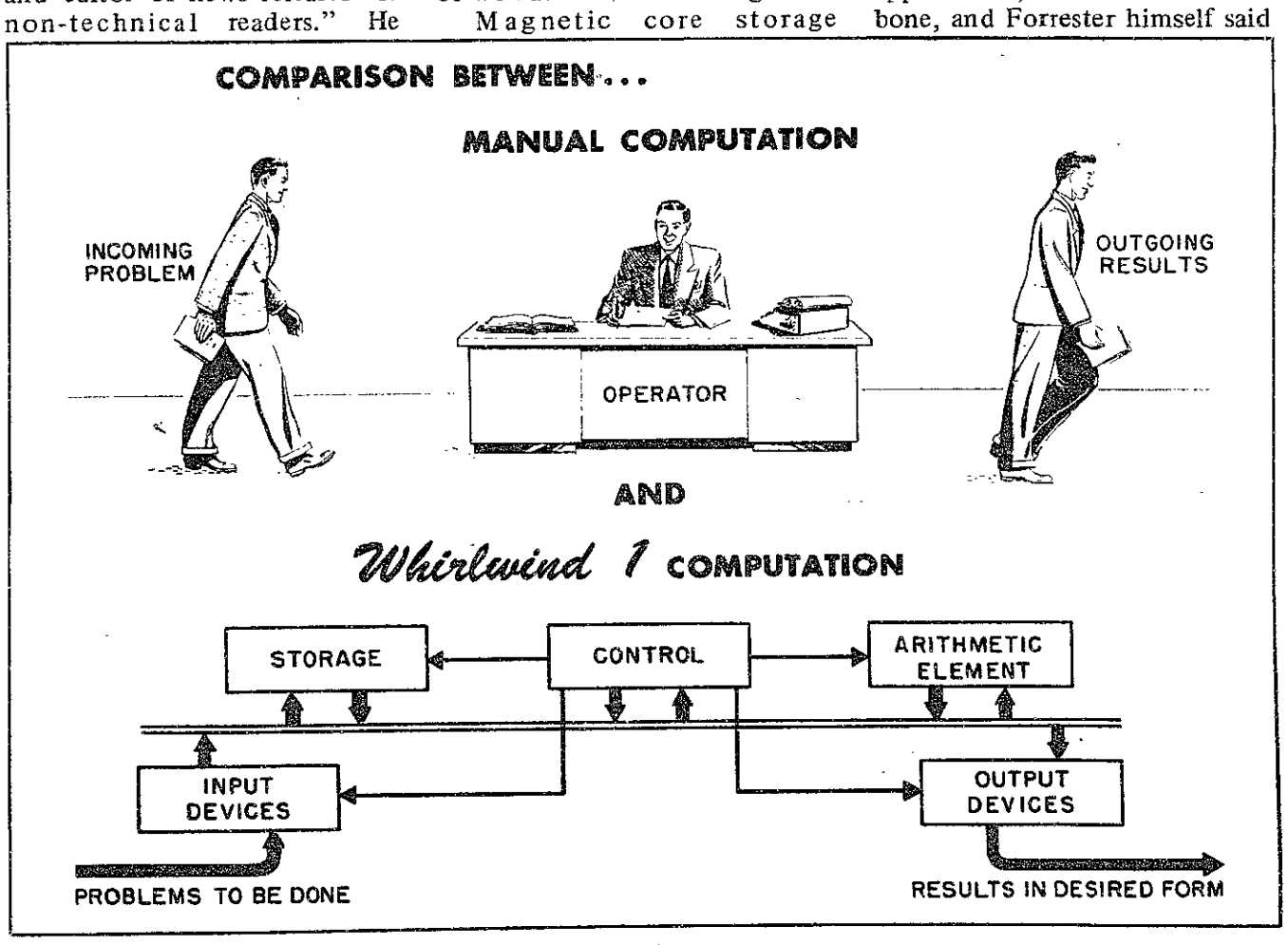
Then Forrester invented the magnetic core ....

"Forrester always wanted people to know the computer could be used for non-military applications," commented Rathbone, and Forrester himself said that "we had a far broader view of the utility of computers than most people at that time. Most people only wanted to make it function for short periods, while we were dedicated to reach the objectives of very high speed and very high reliability." Rathbone noted that "millions of bucks were spent on the machine for desk calculator problems. People didn't realize what computers are for."

Rathbone described Project Whirlwind as "a great experience for all the engineers and me, too. We were breaking new ground with the first generation of large-scale electronic computers." During the life of the project, "quite a lot was done," Rathbone said. "The results of research that were made available stimulated computer development elsewhere."

Eventually Whirlwind was incorporated into the Cape Cod system, a prototype air-defense system, which was a forerunner of SAGE, a real-time air defense system for the North American continent.

While Whirlwind was obsolete by 1959 and now resides in the Smithsonian Institution in Washington, "today's machines show more traces of Whirlwind than the other machines that existed at the same time," said Forrester.



This is how computers were supposed to work, back then.

In Case of Insomnia

Final exams: 'The Great Cram'

By Storm Kauffman

It's that joyful time of year when the thoughts of all good tools turn to final exams and "The Great Cram." Finals are an occupational hazard of being a student, but the institution has been increasingly questioned in recent years.

Figures seem to indicate a slight decline in the number of finals being given. This spring, 106 are scheduled. According to the Registrar's Office, last fall there were 130 finals. in spring 1973 there were 116, and in fall 1972 there were 143 – a modest decline.

The issue is: "Are finals really necessary?" After more than a decade of taking them, finals are still enervating, a strain because they represent such a large portion of most courses. Professor of Physics George Koster (8.06) agrees, saying he doesn't like "having such a large hurdle at the end or the term." He also concurs that a final's representing such a large part of a grade puts a lot of pressure on a student. By weighting his three one-hour tests, Koster lets a student blow one test without irreparable damage.

What about the contention that finals are necessary to provide an overall grade? Most instructors feel that the real importance lies in the enforced review. Professor of Electrical Engineering Paul Penfield, Jr. (formerly 6.01'1) states his purpose for giving finals as providing the student with a chance to "demonstrate an ability to put together the material from different parts of the course." This can only be done on a final. He feels there was great benefit in the review associated with making out the one-page crib sheet which he allowed.

Professor of Mathematics Arthur Mattuck (18.03) also believes that exams are important in "tying the course together. A student can learn from a good final," he continues, "particularly in courses dealing with more than just a variety of methods." He points out that a course can be made or broken in the last two days of class, a final providing the only opportunity to review.

But do closed book finals serve any purpose? Professor of Mechanical Engineering Herbert Richardson – who usually defers to his students the decision on whether to give a final – agrees with me that closed book situations are never encountered in real life. Open book finals in engineering science, he says, are "a good idea as an opportunity to integrate the course in an enforced review. Otherwise, they're a nuisance." Professor of Chemistry Jack Baldwin – who likes to give plenty of exams because he and his students like to know how they're doing – uses only closed book tests because it is "important to commit facts to memory in the physical sciences."

Where does this all get us? Granted, finals can be useful for review or integration of course material. Weighting them too heavily can put excessive pressure on the students, and the exams are hardly more important than the fourteen weeks of work preceding. At most, exams should count a third (in two-quiz courses), in other words, they should be on a par with other tests.

The necessity for a closed book final is still to be made clear to me. If you memorize it now, chances are you'll forget it within a year, and the only important facts to commit to memory are cultural and historical data which form the basis for erudite conversation. A formula or principle can always be looked up, once its existence is made known.

Commentary:

The best solution to the energy crisis:

By Richard Graves

The "Energy Crisis" this country is presently facing will be a fact of life for the next few years; it will take some time to bring new sources of supply into production.

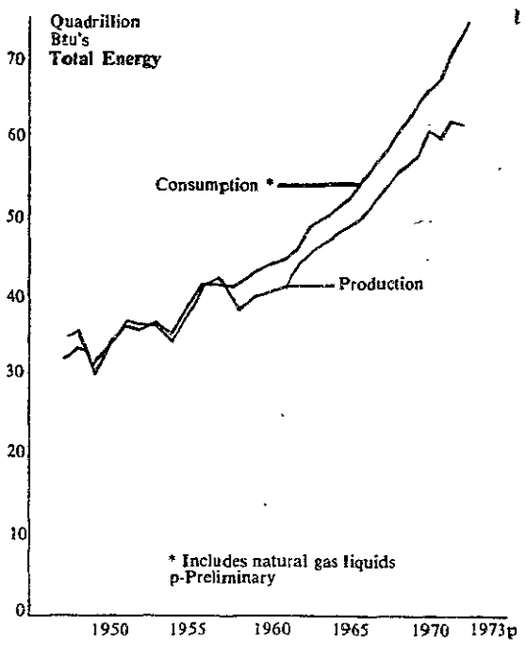
Beyond the short term deficit, supply and demand can be expected to equilibriate. Policy decisions made within the span of our current problem will profoundly influence the nature of this country's energy usage in the years that follow. Some people, including our President, maintain that "increasing our energy supplies is the best way to deal with the energy crisis," without seeking to reduce demand to any degree. From an economic standpoint this is simply not the case. America has traditionally enjoyed cheap, abundant energy, and as a result this country has consistantly failed to consider the energy costs associated with its endeavors. There is a wealth of evidence suggesting that, virtually across the entire economy, energy is wastefully, inefficiently, uneconomically used. As the energy industry accounts for only 5% of GNP, the magnitude of this inefficiency is not relatively great. However, before we plunder the western plains for its coal, and cover the country with nuclear fission plants of dubious safety, perhaps this country should seek to utilize its energy more efficiently, in a manner that will increase our wealth.

When undertaking any investment with associated operational costs, there is a trade-off between the initial cost of the venture and the costs of operation. For example, in building construction, there is a trade-off between insulation and heating/cooling expenditures. In industry, one trade-off involves waste heat management, whereby the waste heat from one process can be utilized in another process, or in space conditioning. To spend less on insulation, or on heat management facilities, results in increased energy expenditures.

Economists have provided a means by which future expenditures can be evaluated, that of Discounted Present Value (DPV). The gist of the DPV approach is that money in the future is worth less than money today. To pay a bill one year from now, one could deposit somewhat less in the bank today, earning interest for the year, and pay the bill with the initial deposit and the interest. The DPV of the bill due in one year is (the amount of the bill)/(one plus the interest rate). By depositing this amount, the interest plus deposit will be sufficient to settle the debt; thus, the DPV of the future payment is less than the amount due. From an economic standpoint, for the purpose of 1) maximizing profits (for a commercial concern), 2) maximizing a consumer's welfare (for the average consumer) and 3) maximizing society's welfare (in either case (1) or (2), the best investment is one for which the sum of initial investment and DPV of operational expenditures is a minimum. There is an implicit assumption in (3), above, that all costs reflect society's marginal cost of an additional unit of production; more on this later.

For an example, consider a home owner contemplating the purchase of a room air conditioner. Of all the 1400 odd models available on the market with cooling capacity of 24,000 BTU per hour or less, the range in efficiency (cooling output divided by energy input) is from 1.38 to 3.58, a factor of 2.6. Generally, for a given rated capacity, the more efficient model is initially more expensive. As consumers are generally unaware of these differences in efficiency and the associated cost, the cheap, inefficient models are, by far, the most popular. Assume a consumer purchases an efficient

US Energy Production & Consumption



rather than inefficient model, and borrows the difference, paying no more out of pocket initially, and repaying the loan over the life of the appliance. Almost invariably, the energy costs plus loan payments would be less than the energy costs alone for the inefficient air conditioners which are the most popular.

The evidence indicates that across the entire US economy (with the exception of the electric utility industry), the energy costs associated with an investment are not considered; the initial cost is the only consideration. From industrial apparatus to commercial buildings to refrigerators, even at prices prior to the "energy crisis," if the investor had considered life cycle costs, he would have saved money and used less energy. Energy prices being what they are today, with no real prospect for significant reductions in the future, the potential for *Cost effective* conservation has increased dramatically.

Savings in specific areas

A few of the salient possibilities follow:

– John C. Moyers of Oak Ridge National Laboratories, in a 1971 study of residential insulation standards imposed by the Federal Housing Administration, found cost effective energy saving of up to 50% could be obtained by insulating in excess of the standards. Shortly thereafter, the standards were revised, allowing about 25% less heat loss. However, the study did not take into account the savings in initial investment in the heating and cooling systems, nor could it have considered the present fuel prices. In 1968, space heating and cooling in residences consumed 11.7% of all US energy.

– The most popular refrigerators selling today, the large "frost free" models, consume 50% more electricity than the more efficient frost free models available. Refrigerators consumed 6% of all energy consumed in residences in 1968.

– Electric resistance heat for homes, hot water, and clothes dryers have been rapidly gaining in popularity. Electric resistance space heating systems were installed in 34% of all new homes in 1972. Electric water heaters were in use in 38% of all homes in 1973. From 1960-1968, the number of electric clothes dryers in use more than doubled, with more than twice as many electric dryers than gas ones in use. However, from an energy resource standpoint, to heat with electricity rather than with gas consumes *twice* as much energy resource, and on an average per BTU basis, electric heat is more expensive than gas by a factor of over 2.5, assuming 1971 prices. Electricity prices have risen more rapidly than gas prices since 1971.

– A study of energy usage in commercial buildings is underway at the Rand Corporation by Richard Saller and Deane Morris. Preliminary results indicate significant savings are possible. A major abuse of energy is the over-illumination in today's buildings. The light intensity often exceeds by a factor of two, the levels found in similar European buildings. This light intensity is not restricted to just the work areas, but is uniform through the halls, bathrooms, etc. Furthermore, the resulting waste heat from the lighting is a major load on the air conditioning systems. Other major abuses are the "double duct" and "terminal reheat" systems popular in new buildings. The "double duct" system achieves the desired space conditioning by mixing heated and cooled air in the required proportions immediately before introducing it into the room. The "terminal reheat" system first cools the air, then brings the temperature back to the desired level by adding heat. The study estimates possible cost effective energy savings of up to 35% in existing buildings and 55% in new buildings. In 1968, the commercial sector consumed 14.4% of all US energy.

– Apparently, industry is no exception. Charles A. Berg (MIT, '56), Chief Engineer of the Federal Power Commission, estimates that 30% of the energy consumed in all US industry is "wasted," i.e., could be conserved cost effectively with available technology. Savings of the magnitude would require replacement of the existing capital stock, (about 10 years), but significant savings are possible immediately. Two firms, Grumman Aerospace and E.I. DuPont, are selling conservation technology to other companies. Largely through operational measures, requiring little or no investment, they have been able to achieve savings as high as 40% in some cases. The minimum reduction they have achieved is around 10%, with 18-20% average. Industry consumed 41.2% of all US energy in 1968. – Transportation has been marked over the past 20 years by expensive energy intensive modes predominating over efficient ones. Passenger transportation is dominated by the automobile, which consumed directly as fuel 13.7% of all US energy in 1971. Including the energy requirements for petroleum refining, highway construction, automobile maintenance, and marketing, Eric Hirst of Oak Ridge National Laboratory estimates the automobile's share of the national energy budget at 23%. Air transportation has been gaining an increasing share of the inter-city passenger market, from 2.0% in 1950 to 9.7% in 1970, requiring five times the energy per passenger-miles of a bus. In inter-city freight transportation, the fastest growing modes, air and truck, are the most inten-

(Continued on opposite page)

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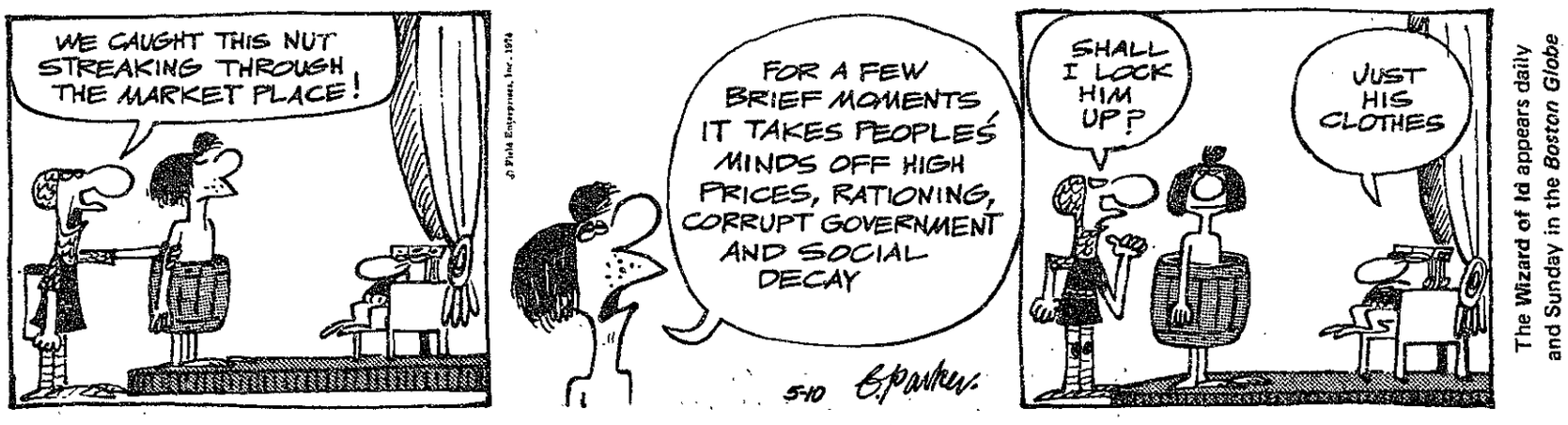
THE WIZARD OF ID

by Brant parker and Johnny hart



The Wizard of Id appears daily and Sunday in the *Boston Globe*

saving what we waste by inefficient consumption

(Continued from preceding page)

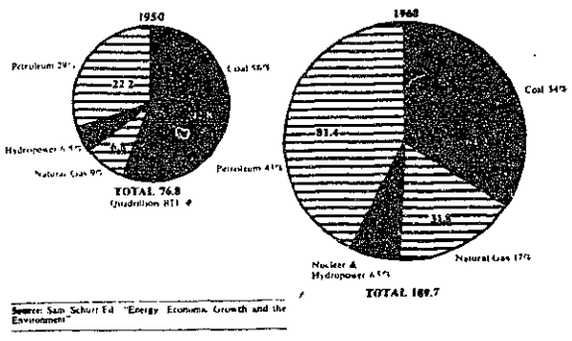
sive. From 1947 to 1970, auto transport increased its market share from 5.3% to 15.9%, and in 1970 it consumed 43% of the intercity freight energy. Air freight, carrying 0.15% of the market in 1970, consumed 7.3% of the total energy.

What's going wrong?

What are the reasons behind this malfunction of the free market, and what can be done to correct it?

Traditionally, America has enjoyed cheap, abundant energy. Over the past 25 years, and up until very recently, energy prices have been declining. In the case of industry in particular, as time is a scarce resource to be allocated like other resources, an area in which costs decline over time is not likely to receive much attention. Until something happens to force attention to this area, little will be done except to continue what one has been doing. In this respect the "energy crisis" we are experiencing, lines at the gas pump, monthly quotas, higher prices, etc., will be highly beneficial. It has served to bring energy and the associated costs to peoples' attention. For this reason, industry can be expected to take care of itself.

Sources of World Energy Supply



Home owners, however, do not indulge in the planning that is devoted to industrial investment. At best, most home owners have only a vague idea of what a "watt" or a "BTU" is. Furthermore, most home owners are unfamiliar with the economic criteria on which investments are based. The solution is straightforward: 1) Establish a perpetual campaign to familiarize consumers with the criteria upon which sound investments are based; and 2) Give consumers the information they need to make rational purchasing decisions through labeling. All consumer goods that have associated costs other than initial cost should be labeled, i.e., homes, automobiles, tires, refrigerators, television sets, air conditioners, washers, dryers, and so on. The information presented on the lable should include the capacity, the efficiency, the expected lifetime of the good and the discounted present value of the operating expenditures, in a form that is appropriate for the particular good.

This principle could be applied to commercial buildings as well. It should be required that all sales of such buildings be accompanied by full information of the costs of operation under typical conditions.

Some are skeptical that such a scheme would affect consumer purchases. Consider the purchase of an item that is somewhat more efficient than the most popular (least efficient, cheapest) on the market, though not as fully efficient as economics would justify. In many cases, the incremental investment would be repaid in two to three years. It's far more worthwhile to invest in such an appliance than leave the money sitting in a savings account. Another consideration is that the salesmen will be more than willing to push the more expensive, more efficient good. If the government agency's label indicates that the purchase of such a good is in the consumer's best interests, the pressure will be enormous. Such a labeling scheme may not induce people to purchase a product fully as efficient as economics would justify, but it would certainly end the American consumer's practice of making purchasing decisions solely on consideration of initial costs.

Labeling in this manner could be expected to induce a shift of consumer preferences toward radial tires, for automobiles, among other things. Although more expensive than cross-ply tires, radial tires improve mileage between 5% and 10%, wear longer, and give improved braking and handling. Their economic justification, on the basis of initial cost, length of service and gasoline savings alone, is clear.

In the transportation sector, the root of the problem lies in the fact that the "visible cost" of transportation, the direct, out-of-pocket expenses, often do not reflect the full costs of providing the service.

In the cities, the maintenance of streets, traffic lights, etc., is financed by the consumer through income and property taxes. In addition, the cost of the ensuing pollution, noise and congestion is carried by society as a whole. If these costs of urban transportation services directly, the "visible cost" of transportation would increase, and demand would be reduced. The most equitable solution proposed thus far is an urban parking tax, whereby the revenues from the tax would finance those costs of transportation usage now invisible. In levying the tax, perhaps rates should be scaled to distribute the costs equitably between automobiles of varying efficiency, as the smaller, more efficient cars cause less pollution, congestion, and road wear.

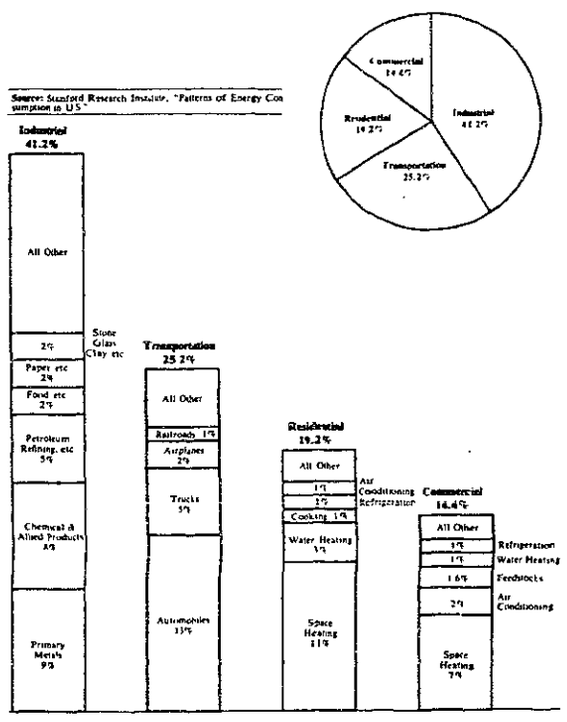
In the long term, it would be desirable to reduce dependence on the automobile for urban transportation. Conventional urban transit systems (buses, streetcars, subways) do not offer the personal convenience, freedom and mobility we have come to expect. Personalized rapid transit systems utilize small vehicles programmed to deliver passengers to their desired destinations on a system of guideways covering the metropolitan area. These systems are currently under development, and may be the solution. This is not to say that the automobile should be done away with entirely, but that a different transportation system may be more appropriate for high density urban areas.

The rate setting policies of the airline industry have come under scrutiny recently and, as a result, drastic changes were ordered by the Civil Aeronautics Board on March 18, 1974. It was discovered that the airlines, in effect, used revenues derived by overcharging long-haul flight passengers to subsidize short haul operations. As the airline industry has a virtual monopoly in high speed, long distance travel, demand is relatively unresponsive to small changes in the price. The airlines took advantage of this situation by raising long haul flight fares and depressing short haul fares. This was nothing short of a monopoly practice on the part of the air transportation industry. Effective July 16, 1974, fares for flights over 1500 miles will be reduced between 4% and 7%, and fares on flights up to 500 miles will increase between 5% and 10%. Due to the differing responses to demand to price changes, overall air travel demand is expected to decline.

There have been allegations that the airlines also use passenger revenues to subsidize air freight shipments. This question is under investigation, and if this happens to be the case, the resulting price increases can be expected to dampen the growth of air freight transportation.

In intercity freight transport, rates are regulated by the Interstate Commerce Commission. Presently, cost differentials between modes are obscured by the imposed rates in the name of "intermodal competition." Costs (to the railroads) of shipping by rail are roughly one fourth those of truck shippage, but rail rates are only 20% below those of trucks for the same shipments. However, it isn't clear that lowering the rail rates will benefit the financial situation some of America's railroads are in presently. One thing is clear, that this country needs efficient rail service, and the "energy crisis" has made efficiently operating, competitive rail transportation all the more vital.

End Uses of Energy in US, 1968



All figures are reprinted from "Exploring Energy Sources," The Ford Foundation, 1974.

Finally, this country is no longer in a position to subsidize or otherwise depress the price of energy. To artificially depress the price below the cost to society of an additional increment of production, society's marginal cost, is to encourage excessive consumption, while in some cases discouraging additional development.

The price of natural gas committed to interstate pipelines (the bulk of US natural gas usage) has been regulated by the Federal Power Commission (FPC) since 1954. The FPC held the price constant through the '60's, in spite of escalating drilling and production costs, and as a result production and reserves have declined relative to demand. Gas utilities in many parts of the country have been forced to refuse new customers. This has been one factor in the rising popularity of electric heating. Consumers desire a clean fuel, and are unable to purchase gas at any price. Thus, the opt for expensive electricity, which, to deliver the same amount of heat, requires consumption of twice the energy resources. In addition, the artificially low prices in the producing states has encouraged the use of natural gas as a boiler fuel where pollution isn't a problem, and as a source for carbon black production. The regulation of the price of natural gas is responsible for arrant waste of this nation's resources, and should be ended immediately.

As a result of the present squeeze, our President and many others are willing to abandon the progress we have made in the field of pollution control. They see the "energy crisis" as the inability of the energy industry to supply the "needs" of the nation. Pollution control, which increases energy consumption, is viewed as exacerbating the situation, and should therefore by removed. More rationally, the long run "energy crisis" is a projection that, at prevailing prices, the supply of energy consumer of the costs (pollution) which had previously been dumped onto the environment and society as a whole. If the full cost of energy usage is born by the consumer, energy demand will be reduced, society's resources will be efficiently allocated, andsociety's welfare will be maximized. In the words of the Environmental Protection Agency, "Thus, environmental protection is not part of the problem; it is part of the solution."

The nation's nuclear energy policies need to be examined in this light. The Price-Anderson Act, passed by Congress in 1957, arbitrarily limits the electric utilities' liability, in the event of a catastrophic reactor accident to $560 million. A study by Brookhaven National Laboratory for the Atomic Energy Commission in 1957, entitled "Theoretical Possibilities and Consequences of Major Accidents in Large Nuclear Plants," estimated the possible property damage at seven billion dollars. The theoretical plant in the 1957 sutdy is one fifth the size of plants currently in operation and one twenty-fifth the size of plants in the planning stage. Thus, the utilities' liability is limited to a small fraction of the probable damage, in the event of an accident.

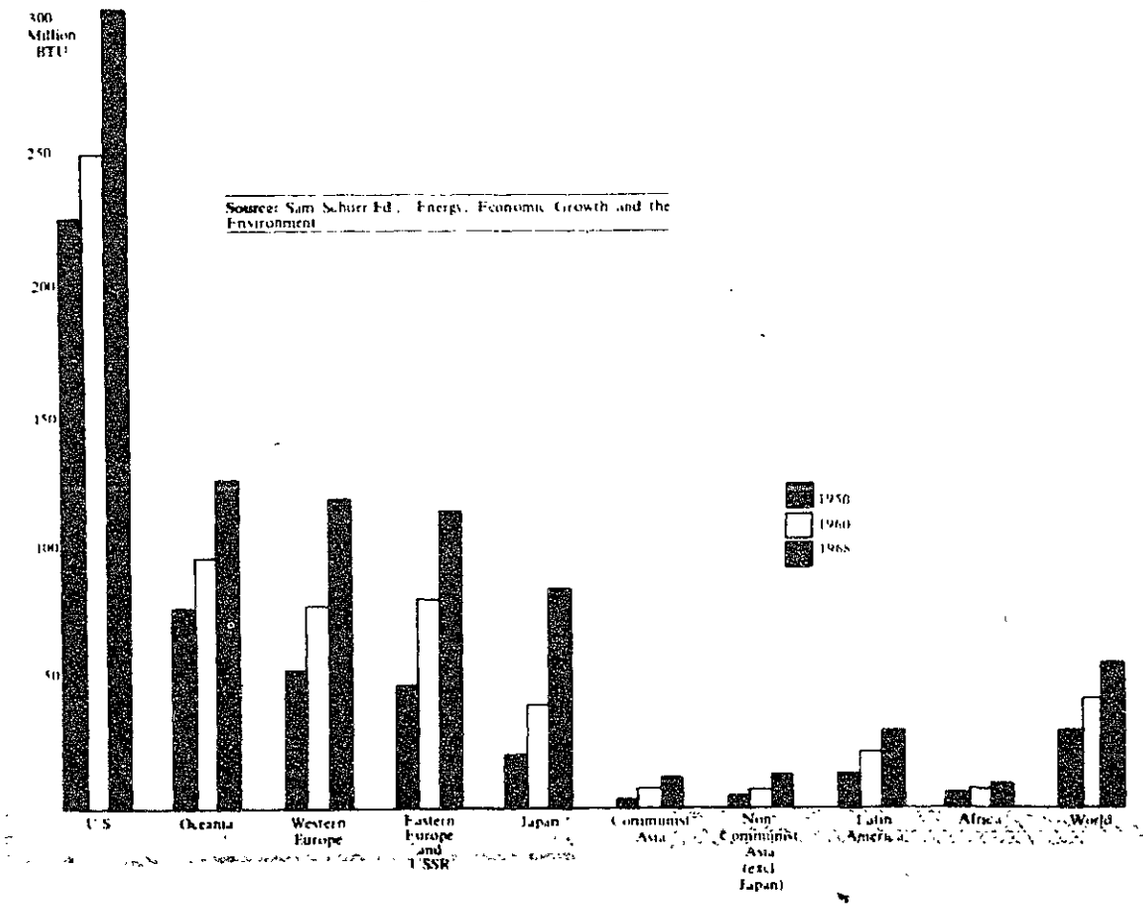
As a consequence, some critics charge that safety has been designed out of nuclear plants. The AEC denies this. In any event, the costs of such a possible accident, as would be reflected in insurance costs to the industry, are not being born by the ultimate consumer. As there is presently a heated debate in progress over the risks involved in the utilization of nuclear fission, it would be in society's best interests to employ some unbiased outsiders, the insurance industry, to evaluate these risks. The Price-Anderson Act should be repealed, and the electric utilities should insure its own endeavors like every other industry. Competition among insurance companies would assure that the insurance costs reflect the probability of an accident and the ensuing damage. The utilities would then have the motivation to design safety features into the reactors to minimize the sum of expenditures on safety equipment and the discounted present value of the possible accident, as reflected directly in the insurance costs. Society's welfare would be maximized, and in the event of an accident, the costs of resulting damage would be born by the users of the electricity, rather than by the victims of the unfortunate event.

In summary, the wasteful usage of energy in the United States is attributable to malfunction of the capitalist free market. The sources of this malfunction are: 1) consumers and business persons not making purchasing decisions in consideration of the associated operational costs; and 2) governmental regulatory policies which disrupt market mechanisms and encourage waste.

The time has come to restore market mechanisms to energy utilization. A study of nearing completion, undertaken under the auspices of the Union of Concerned Scientists at MIT, has revealed that the reliance on the free market could result in a 30% reduction in energy usage across the entire US economy by the year 1990. This reduction is achievable with current technology, and this reduction would be cost effective; as a result of its implementation, Americans would enjoy a higher standard of living. The nation's current energy policies, and nuclear development policies in particular, should re reexamined. Achievement of these reductions in demand would render the planned expansion of nuclear energy generating capacity no longer a "necessity."

Richard Graves '75 (VIII, XIV) has been studying, for the past year, the potential for cost-effective conservation with the Union of Concerned Scientists at MIT.

Energy Use Per Capita in the US and the World



Congress-CIA relation examined

By David Danford

It was not a Sherman Skolnick style expose of CIA involvement in the Kennedy assasination, big oil deals, and the Sack of Rome.

Wednesday's CIS seminar was a serious academic attempt to examine the relationship between the CIA and the congressional committees and executive branch groups which are supposed to monitor it.

The seminar, held in the Milliken room, was conducted by Michael McNamee '76, Norman Sandler '75 and David Tenenbaum '74.

The three political science students spent over a week in Washington during March investigating the CIA and its relationship to the Congress. They reported that, rather than having the CIA as "a tiger by the tail, Congress is, in fact, an unwilling hunter" for specifics about the operation of the agency.

Out of the poorly defined $5 to $7 billion annual combined budget of the nine agencies, including the CIA, which make up the intelligence community, the students reported that expenditures of less than $10,000 are usually not reviewed by any of the monitoring committees of the executive branch. Sandler commented, "As Watergate has shown, $10,000 can buy a lot and cause a lot of havoc."

McNamee said that the Appropriations and the Armed Services Committees of both houses of Congress which are to oversee the intelligence community are often co-opted by the CIA. "The committees are definitely stacked," said McNamee. In terms of the highly defense-oriented American Security Index, he described the committees as "such a collection of 100's as you have never seen."

According to the group, a further problem in legislative supervision of CIA operations is the lack of definition of the bounds of the agency's power. "The language of the 1947 charter is so vague, it's hard to tell what exceeds it," said Sandler. Citing the Bay of Pigs operation and the secret war in Laos, he said, "There are no clear lines of accountability for anything that happens in the intelligence community. Successes usually have people accountable for them, but responsibility for failures is obscure."

"The CIA is a very large bureaucracy," said Sandler, "consisting of four directorates: intelligence, operations, support, and science and technology."

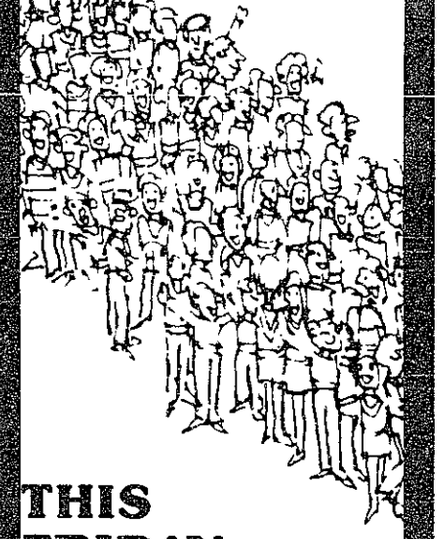
McNamee said that despite its size, "The intelligence community and ex-intelligence community is a very tight knit thing. Everybody knows everybody else."

Sandler noted that their investigation revealed an ongoing debate within the CIA concerning which directorates should have highest priority. Suggesting an overbalance toward operations, Sandler said, "There are railroad cars full of raw information that is not being evaluated." Further, he said that seven tons of secret papers come in daily to the CIA, while the shredding and incinerating capacity is only four tons per day. Sandler suggested, "They could perhaps tie their line printer directly into their shredder and maintain the same level of effectiveness.

The group's more serious suggestions included increasing the level of accountability within the CIA and getting Congress to take a more active role in its oversight.

Michael McNamee, Norman Sandler, and David Tenenbaum at Wednesday's seminar.

Photo by Tom Klimowicz



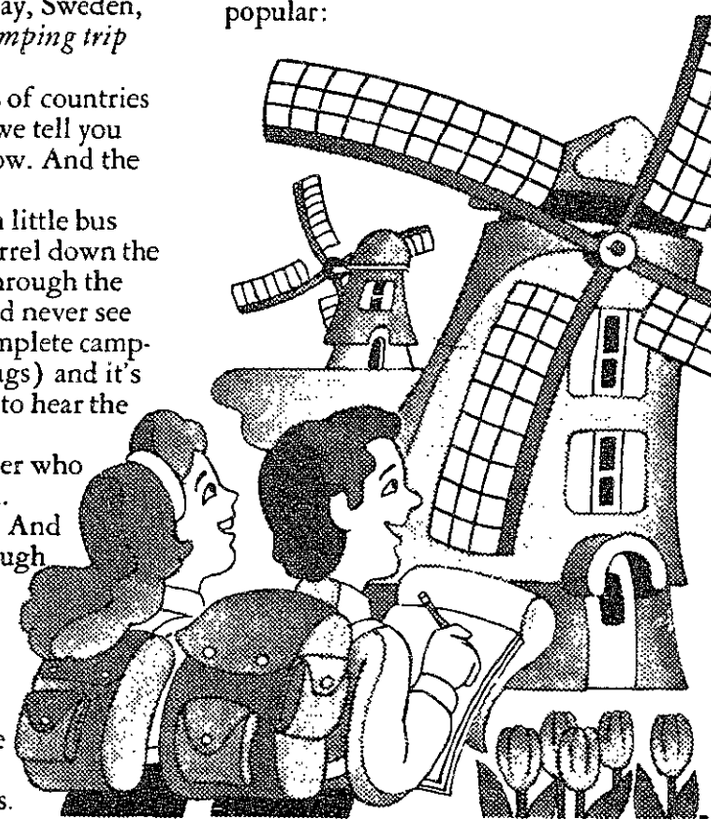


photo by Edward McCabe

mark astolfi

the last kiss this

This past week, NBC, CBS, and ABC announced the first rough drafts of their 74-75 season lineups, and so the three-way chess game begins. After the massive wave of cancellations, 30 new series will be aired in the Fall, and some promise to take the Tube to new heights of Boobery. Two new sitcoms sound especially intriguing: *Forward, Ho!!...Huh?* finds Robert Conrad ex- of *Wild, Wild West* and others, as the captain of a cavalry platoon of deaf mutes, based on the historically ill-documented "Silent 77th;" also, there's the highly-touted *William Shatner Show*, concerning the madcap adventures of a travelling butter salesman. Among dramatic series, we find such potential early cancellations as *High School Hooker*, a Fifties nostalgia skein starring Lauren Chapin, of *Father Knows Best* fame; *Mark, of the Vampires*, a Jerry Van Dyke horror vehicle, and the hard-ticketting *Traffic Cop*, featuring Gene Barry, William Windom, and George Maharis. Not to mention the Lennon Sisters' musical version of *The Waltons*, called *Sharecroppers!*.

OK, OK, just kidding, friends. But some of the actual rookie entries could prove just as weird. For example, there's CBS's *Planet of the Apes*, based on the movies. Then there's Darren McGavin's *Kolchak—Night Stalker*, based on the series of made-for-TV movies about a butinski newshound who continually tangles with werethings, vampires, mummies, etc. *Waltons* copies abound: a Fifties *Waltons*, a Mike Landon Western *Waltons*, and a Swedish pioneers *Waltons*. The best was left on the shelf, however: *Cro-Magnon*. Honest! "Wednesday, 8:30: Oog runs away from cave after the shaman tells him his pet mastodon has to be put to sleep in the tar-pits." What else? Well, versions of the movies *Born Free* and *Paper Moon*, as well as a Sonny-minus-Cher show on ABC.

As far as sitcoms go, there are more Chicanos, Blacks, Bob Cranes, etc. Only two sound half-interesting, and they're both from CBS, king of the sitcom heap these days. One is a spinoff from the *Mary Tyler Moore Show*, Valerie Harper as *Rhoda*. The other is called, innocuously enough, *We'll Get By*, the story of a suburban family with three teenagers, the pilot of which being about the laffs that result when the kids discover that the oldest was on the way when Mom and Dad got hitched. Clever, no?

On the other hand, most of the new dramatic series come in bunches. No less than four are based on the same genotype: contemporary crime/police domminant, with vintage Western recesive. If ya liked *Cade's County*, you'll luv *The Rangers*(NBC), adventures of the Forest Service; *Petrocelli*(NBC), with Barry Newman as Tony Petrocelli, a "cattle-town lawyer" (It was between that name and "Rico Conigliaro"); *Kodiak*, Clint Walker as an Alaskan State Trooper; and *Nakia*, Robert Forster playing a Navaho deputy sheriff. Then there are two lady detective shows: *Get Christy Love* with Teresa Graves, and *Police Woman* starring either Angie Dickinson or Elizabeth Ashley. Beyond that, you have James Garner and Dave Janssen giving the straight detective shtick another try, David Hartman as a pro athelete turned hiskool teacher, and Claude Akins and Frank Converse as truckdrivers (the new American folk-hero??)

Sports Shorts: Whether or not the WFL Toronto Northmen will be ultimately tossed out of the fair Dominion of Canada, they've decided to leave on their own, relocating in Memphis, to be redubbed the Southmen, ignoring such ripe-for-the-plucking football markets as Indianapolis, Columbus, Seattle, and Phoenix. The wonderful Waffle had, of course, originally hoped to place a team in Memphis, but the town fathers wanted to hold out for an NFL franchise; the franchise ended up in Houston. Now, the NFL has announced that Tampa will become the 27th NFL club in 1975, and although they indicated that they would more than likely add one or even three more teams before the year is up, the folks in Memphis apparently decided they were going to be snubbed, and settled for a WFL franchise. Some people in Memphis still hope to secure a commitment from the NFL, but this is not likely to occur, since the NFL is not eager to invade WFL turf (cf. Honalulu) and the North/Southmen have been offered the exclusive rights to Memphis stadium dates, so look for the NFL to give Seattle a chance and leave it at that, for now at least. In ten years, they'll be up to 32 team, 8x4.

Useless Quiz Of Sorts: With Ch.56 changing its call-letters to WLVI, tell me this: What was Ch.38 WSBK called before it was what it is? And we all know WRKO, radio that is, was originally WNAC. What was it before that? Answers elsewhere, if at all.

By the way, this is my last column, probably the last thing I'll ever "write" for *The Tech*. It's been fun, but a pain in the ole behind. I would like to take this time (or space, whatever) to appologize to *Exile On Main Street* *Red Rose Speedway* and *Houses Of The Holy*, for saying nasty things about them before I got a chance to listen to them sufficiently to fall in love. I would, in this context, like to quote a poem by Ambrose Bierce (But before we get to that, here's those answers: WIHS and WLAW, respectively):

There is a land of pure delight
Beyond the Jordan's flood
Where saints apparelled all in white
Fling back the critic's mud.

And as he legs it through the skies,
His pelt a sable hue,
He sorrows sore to recognize
The missiles that he threw.

A disclaimer: the above photo was a complete surprise to me; I think it's supposed to be a tribute of sorts. Its a year old, unlike me. And be sure to listen to the continuing adventures of yours truly on WSLB, 1400 on yer dial, Ogdensburg, New York. Cue the "if I had to do it all over again" bit.

If I had to do it all over again, I'd do it all over you. G'nite.

Suicide? Murder!

by Kathleen Burke

Sexual Suicide – **George F. Gilder** (New York Times Book Co., $7.95)

The most generous statement to be made about George F. Gilder's *Sexual Suicide* is that it is occasionally well-intentioned. He writes as a spurious sexual prophet, foretelling doom if men and women fail to restructure relationships. He seeks to formulate a new vision of dignity in male-female interactions. In this sense, his attempt is admirable. Regrettably, he endeavors to validate his position by debunking the women's movement.

The feminist becomes the shrill-voiced subverter of mores, the source of familial breakdown and unfulfilled marriages, for she questions that the completion of a woman's being is childbearing. Gilder wavers between heroic efforts to look with tolerance at successful women, lapses into sardonic invective ("Many women join the movement after failing to induce men to monogamy."), and puerile comment on Germaine Greer's underwear.

In Gilder's terms, it is men who are oppressed, while women retain an unimpeachable authority. Males are inherently insecure because they are denied the procreative function of women. They must be allowed economic prowess in order to compensate for their sense of biological inadequacy. Since they cannot bear children, they must be placated. Thus, meaningful employment becomes an extraneous luxury for women, while it is a psychological necessity for them.

During his vindication of child-bearing as the fulfilling function for a woman, he waxes ludicrous. He maintains that "Only the birth of a child can validate a marriage." He concludes that the increasing trend toward zero population growth may signify a serious national demoralization." Gilder maintains that by reversing biologically determined sex roles, and insisting upon aggressive career-oriented behavior, women undermine societal stability. They are, in fact, committing sexual suicide as they engender a "loss of procreative energy."

He sees "the female role in the family" as the "most important source of stability in civilized society." Any effort to separate women from this maternal role becomes a vicious threat to the fabric of society. According to Gilder's critique, the panoply of America's social problems – from crime to the economic oppression of ghetto males – derives from the feminist's insistence upon ignoring sex roles. He goes so far as to assert that "The women's movement – particularly in its moderate manifestation – is the most important remaining organized enemy of black progress in America." By refusing to accept their role of childbearer, and ruthlessly glutting the job market, women wreak injustice. Curiously, Gilder completely ignores such a crucial factor as the massive corporate structure, which is oppressive in the most thorough-going sense. Yet, in his discussion of the plight of black men, he has the audacity to cite the women's movement as the oppressor.

The issue of biologically determined sex roles is still an arena of debate. But Gilder's insistence that anatomy is destiny results in blatantly reductive pronouncements, Within his absolutist scheme, a housewife's search for meaningful work outside the home becomes somehow selfish or ignoble. Men are to have a career, to provide. But a woman's place, he emphatically states, is in the home. Men, "already subjected to intense sexual strain from women," must maintain jobs which "serve as masculine affirmations."

Not only does Gilder maintain that the housewife's existence is comfortable and fulfilling, but he carries this assumption one shocking step further. Not only should women be content in their homes, but legislation to provide them equal rights should be flatly rejected. The Equal Rights Bill "would subvert our most essential institutions and relationships." Any measure which would permit women increased autonomy becomes a menace.

The central idea which underlies the book is valid and useful. Gilder believes that the quality of life is radically affected by patterns of sexual relationship. Ostensibly, he is arguing that each person he allowed his measure of freedom and dignity. But he seeks this end at the expense of women, denying they are in any way oppressed in this society.

In fact, he goes so far as to align the destructive energy of women's liberation with the destructive potential of current biological research. The voice of the feminist becomes as subversive of sexuality as cloning. That this comparison is made suggests the imbalance of his perspective. The feminist's cry is for human liberation, for each man and woman's opportunity to exercise a unique potentiality. The basis for this revolution cannot be the subservience which Gilder posits, but rather trust and love, and most importantly, respect.

Get yer ugh-ugh's out!

by Neal Vitale

When a sub-culture becomes accepted by and integrated into the society from which it was once isolated, two occurences are inevitable – efforts will be made, on the one hand, to exploit the newly legitimized style; at the other extreme, to seriously study and analyze the one-time phenomenon.

Rock music and its resultant cultural microcosm is just such a case; one particular facet, rock films, has been characteristically subject to both extremes of intent, as well as to a wide range between. At their exploitive best are movies like the fairly recent rash of those concerning the late Jimi Hendrix. The most they have to offer is regurgitated and shoddy concert footage and marginally worthwhile interviews and such; much more important is what the film producers hope to gain. Only ranking slightly higher in the integrity department are such second-rate movies as *Journey Through The Past, Zachariah,* and *O Lucky Man!* which attempt to either capitalize on a rock soundtrack or the movie's creative association with a rock star, or else are simply salvaged by some strong music. Related are the films featuring pop musicians in acting roles, like in *Pat Garrett & Billy The Kid, Ned Kelly,* or *Candy,* and who provide little more than a bit of diverse star appeal.

Yet films such as *Zabriskie Point* and *The Harder They Come,* which effectively either blend the different media or use rock music as an intelligent counterpoint, and *Gimme Shelter* and *Sympathy For The Devil (1+1)* which focus on the music and its performers, can be successes without particular compromises or exploitative selling. Which leaves a broad middle area, in which the straight concert documentary resides; that genre is, of course, dominated by *Woodstock.* A film that is cut from the same mold is *Ladies and Gentlemen... The Rolling Stones;* however, that is where the comparison must end.

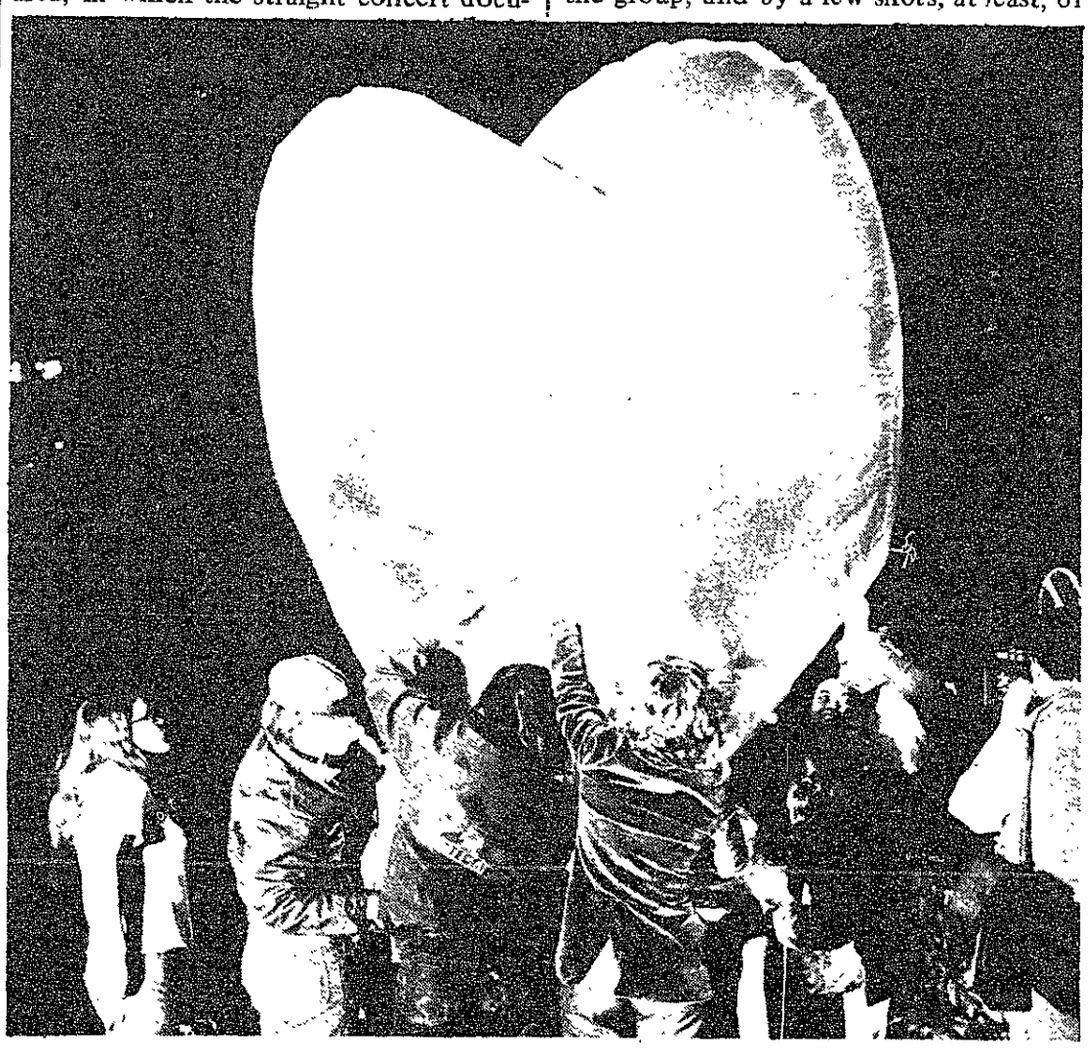
The purpose of *Ladies and Gentlemen...* is to approximate an actual Rolling Stones concert; as far as the film goes, it does a pretty good job to that end. Razor-sharp editing pieces together the best segments from two or three concerts filmed on the Stones' last American tour so that, musically, the movie is perhaps better than an actual gig. But the music itself, despite the reasonably impressive (and very loud!) quadrophonic sound system at the Music Hall, is not the rather diverse potpourri that was in *Woodstock*; rather, tunes like "Midnight Rambler," "Jumpin' Jack Flash," and "Brown Sugar" have been played and replayed, on radio and TV and other films, so that the soundtrack becomes a rather painfully drawn out and bludgeoned mishmash.

Yet even if one considered the music in *Ladies and Gentlemen...* to be good enough if there were interesting accompanying visuals, the probable reaction would be boredom. Concert footage is not an end in itself – one can see a close-up of Mick Jagger's age-creased and exhausted-looking face just so often, amidst repeated camera angles that show only Jagger, and put up with some film that is no better (if not worse) than most *In Concert, Midnight Special,* or *Rock Concert* shows, for all its disconcerting and abrupt camera changes.

It is just this outdated fascination with Mick Jagger which destroys the movie's immense potential. The notion that the energy stems only from Jagger's tired runs-through of his prancing and struts, and only in a minor sense from the rest of the band, is basically false, even if that sort of demonic energy could be captured on film (witness the failure of *Gimme Shelter* at that very task). The decadent and evil pivot of the Stones is one Mr. Keith Richard, and he is virtually ignored throughout *Ladies and Gentlemen.* Instead of the prurient obsession with Jagger's crotch, a far deeper insight could have been lent by a little more concern with Richard, as well as with the rest of the group, and by a few shots, at least, of the audience reaction. Only at the very end of the "concert"/film, when Jagger throws rose petals to the crowd, in the middle of a confetti blizzard, does any of this sort of observation take place.

Perhaps the secret of a successful rock concert film is in treading the fine line between chic consciousness and a heavy-handed belabouring; whereas an essence of the naivete and exhiliration of Max Yasgur's farm in Bethel, New York was retained in *Woodstock*, none of the atmosphere and excitement of a Stones "event" was captured in *Ladies and Gentlemen... The Rolling Stones.*

At $5 a seat, the price was possibly next to nothing for the diehard Stones fan who either missed the Stones live or who payed upwards of $50 for concert seating; for anyone else, a $5 ticket to an irritatingly produced and generally bland movie is indicative that *Ladies and Gentlemenn...* is indeed a money-making bore.



Phase II of ART on campus took place Wednesday night on Briggs Field. The German TV people who have been filming some of Prof. Otto Peine's work were back on the job, trying to film the huge transparent vinyl balloons as they were launched and lighted by two giant floodlights. The effort proved to be not nearly as impressive as last week's "Balloon Carpet." ——— photo by Richard Reihl

'enry 'iggins & co.

by Sandra Yulke

I've learned to expect more than adequate presentations from the MIT Dramashop, and usually I get even more than I bargained for, but this spring's production of Shaw's *Pygmalion* is absolutely extraordinary – it's the best thing that I've ever seen produced by students at MIT.

Granted that the credit for the biting humor and caricature of British class discrimination goes to Shaw, but even the greatest satire can be deflated by poor delivery. Fortunately for us, Eileen Schuyler (Eliza Doolittle) and Jim Eckhouse (Henry Higgins) both have a fantastic sense of timing, the kind that is inborn and comes from having true talent.

Schuyler has not only an extremely pleasing voice, but a very expressive face as well, and managed to convey both the poverty and dirt of a flower girl and the serenity and gentility of a countess with equal credibility. Everyone had the problem of coping with the British accents, which they did quite well, but Schuyler had to both 'AAOOOOW' and OOOH', and she also delivered the line that, to Shaw, summed up British classes – "They done her in" – in a manner befitting Her Royal Majesty.

But every Galetea is only as good as her Pygmalion. (For those of you not familiar with the Greek myth, Pygmalion was a sculptor who fashioned a statue of a woman, which he named Galetea, and which was so beautiful that he fell in love with it. He prayed to the Gods to make her a living woman; due to his devotion, they did, and they lived happily ever after.) In this case, she had nothing to fear. Jim Eckhouse was so fantastically boorish, stubborn, supercillious, egocentric and plain unfeeling that Henry Higgins really walked on the stage of the Little Theatre. As he's only a sophmore, we can look forward to seeing Eckhouse for at least the next two years.

The supporting cast was also very good, particularly Ruth Brand (Mrs. Higgins) and Steve Nuding (Col. Pickering), both of whom were the epitome of British style and poise. Definitely charming, though in an entirely other vein, was Andy Piecka, as Alfred, Eliza's father. One couldn't help but feel that he had been magically transported to the stage of the Little Theatre from some Cockney dustbin.

All in all, the production marked an extraordinarily successful return of Joe Everingham as Dramashop director. One welcomes him back with open arms, and hopes that he and the rest of the talent displayed last week will be with us for a great deal longer.

One added touch that should not go unnoticed was the novel period slides and music that were used to divert the audience during the scene changes. Both sets used were quite charming, particularly Higgins' study, which was so musty that it almost smelled like mildew. Yet one could not help but have wondered if Mrs. Higgins, the perfect lady, would have had such ungainly chairs in her drawing room. Franco Colavecchia was responsible for the sets, and the slides were courtesy of Joseph Schuyler.

British madness

by P.E. Schindler, Jr.

And Now For Something Completely Different. . . is one of the great unrecognized comedy masterpieces of our time. The quotation on the LSC posters, "the greatest film ever made, anywhere, by anyone, at any time" is a true reflection of my opinion of the film.

I saw it two years ago in an obscure art theater in New York City, and fell in love with the hysterical antics of Monty Python, who gained fame in England for his television show — *Monty Python's Flying Circus.* He is best known in America for his comedy albums, which include *Beethoven, Symphony No. 2 in D Major. . . Another Monty Python Record, Monty Python's Previous Record,* and *The Worst Of Monty Python's Flying Circus.*

The film uses a unique combination of humorous graphics/animation to make some tasteless jokes, and live actors to handle the rest. No cow is too sacred, no situation too incredible to escape Monty's roving eye. If you liked the records, you'll love the film.

Walking mailboxes, dead birds nailed to perches, grainy black and white films of clandestine rendezvous on a TV game show, and caricatures of the British military and aristocracy dot the film in profusion. The jokes come in riotous barrages (and mostly defy transcription, which is why there are none of them here), leaving the film-goer only instants to recover between one and the next.

You'll like it.

Virus vs. 11th House

by Bob Reina

Although people generally disagree concerning their beliefs in the Deity and the netherworld, I'm sure everyone who say Larry Coryell at Paul's Mall last month agreed that some supernatural being was out to get him. Moreover, I'm still trying to figure out how a concert where everything went wrong turned out to be one of the best concerts I'd ever seen.

It started out as a normal set. Coryell emerged (brandishing two guitars), closely followed by Mike Mandel on keyboards, Mike Lawrence (who recently replaced Randy Brecker when the latter joined up with Billy Cobham) on trumpet and fluegelhorn, Danny Trifan on bass, and Alphonze Mouzon on drums. They opened, curiously enough, with "Rocks," a composition by Randy Brecker. It's a shame that this piece, the tightest and most musically complete of the band's repertoire, never made it on their newly released album; it's also unfortunate that Brecker didn't write more for the band. The band then proceeded with Mouzon's "The Funky Waltz," a low-key and somewhat oversimplified piece that was appropriately brief.

Coryell's "Theme for a Dream" followed, and it contradicted the belief that soft ballads with weak rhythmic lines, that are usually designed for "studio reproduction," fail to come across in concert.

Coryell then deviated from the standard program and introduced Mike Mandel, "untitled and unaccompanied." Finally, Mandel stepped out from the shadows and exhibited his true ability. After establishing a foundation of electronic "pounding surf" effects, he departed on an improvisational whirlwind on piano; soon the synthesizer began pounding a rhythm allowing a heavier display of piano riffs. In a comical electronic parody of Schoenberg's *Sprechsang*, Mandel began thrashing about while reciting "Nixon ist eine grosse Scheisskopf." Concluding with B.B. King guitar riffs on the synthesizer and an amazing construction of chord progressions from random note sequences, Mandel received his deserved ovation.

Then the trouble began. The band returned onstage, *sans* Mike Lawrence. Coryell apologized for the trumpet player's sudden illness but reassured that the band would continue without him. The subsequent rendition of Mandel's "Joy Ride" seemed a bit empty without trumpet, but succeeded nevertheless. An unbelievably tight uptempo version of Wolfgang Dauner's "Yin" followed, which ended the set spectacularly.

As would be expected, the lack of trumpet forced Coryell to adhere to a more improvisational framework for the second set. The band opened with an extended-jam medley of Mouzon's "Tamare" and Mandel's "Adam Smasher," leaving Coryell alone on stage afterwards. Coryell executed an incredible free form solo, utilizing complex chord harmonics and other seeming physical impossibilities, which made his recorded solo of "Gratitude" seem like Mel Bay Book Two by comparison.

The band returned onstage, this time without Danny Trifan. Coryell whispered something to Mandel, who replied, "What, am I going to play bass, too?" After introducing a drum solo by Mouzon, Coryell announced that the band would perform "Birdfingers" (Coryell's most technically demanding piece and a near impossibility without trumpet). Mouzon's solo was impeccable and, at times, seemed like it was expanding to a larger musical form. Coryell and Mandel returned to the stage (still no Trifan) and proceeded to attempt "Birdfingers."

In an amazing feat of virtuosity, Coryell played guitar, trumpet, and piano parts simultaneously, with Mandel playing bass on synthesizer. It sounded fine and was reminiscent of the old Coryell 3-man-band days. Apologizing for Trifan's virus, Coryell seemed flustered, but Mandel seemed to be enjoying his new role. They ended the concert with Mouzon's "Right On, Y'all" and "The Eleventh House Blues," the latter being an amalgamation of straightforward blues and Coryell antics. The jamming got pretty heavy (and sounded a bit like Cream at times) when Coryell's E-string "caught the virus." (What else could go wrong?) Demonstrating his remarkable ability to switch guitars in less than four measures, Coryell allowed no loss of continuity.

Remarkably enough, the concert was a tremendous success. Although some of the pieces were not performed in the original form, the reduced size of the band forced Coryell to spend most of his time improvising. Throughout the 3½ hours of the concert, he exhibited astounding versatility, always introducing difficult, but tasteful, riffs with no repititions. At times, in a tongue-in-cheek fashion, Coryell would introduce bits and pieces of well known compositions. During the concert, one hears "In the Hall of the Mountain King," John McLaughlin's "You Know, You Know," and even "Layla." In fact, the concert ended in a torrent of Hendrix feedback.

I am thoroughly convinced that Larry Coryell is the best guitarist alive today, and if the Eleventh House remains intact and attains the notoriety it deserves, others may well agree.

Books for spring

by Kathleen Burke

With the coming of lazy afternoons and paper deadlines, it is sometimes necessary to sit under a tree and escape with a book. If you haven't yet entered the mythical village of Macando in Marquez' *One Hundred Years of Solitude* (Avon Books, $1.95), you are about to experience an extraordinary journey. Gabriel Garcia Marquez' chronicle of the brutality and nobility, passion and gentleness of life in this Latin American village is at once uproariously comic, moving, and wise. A re-reading of Kenneth Grahame's classic, *The Wind in the Willows,* (Charles Scribner's, $6.00, and also available in paperback) is a consummate spring delight — quite in the same league with kites and forsythia. Ratty's comment on purpose in existence — "Believe me, my young friend, there is nothing — absolutely nothing — half so much worth doing as simply messing about in boats." — makes one want to head immediately for the Charles and the nearest sailboat. In the hardbound edition, Ernest H. Shepherd, the illustrator of *Winnie-the-Pooh,* has produced new watercolor drawings of Ratty, Mole, Toad, and Co., which are delightful.

T.H. White's *The Once and Future King* (Berkley Medallion Books, $1.25), the whimsical and powerful re-telling of the Arthurian fable which inspired "Camelot," is another joy. Also, often neglected, but a charming and witty masterpiece is Arthur Ryder's translation of Indian folk tales, *The Panchatantra* (University of Chicago, $3.45). And it seems almost an insult to Pan to let spring pass without delighting in James Stephen's retelling of Celtic fairy tales, *A Crock of Gold* (Collier Books, $1.95). Of course, it is also time to contemplate Thoreau's serene voice in *Walden* (Signet, $.75). While sitting under that tree, you might also bring out a copy of Wallace Stephens' *The Palm at the End of the Mind* (Vintage, $2.45), and rejoice in sun, poetry, and books, who, like people, are to be appreciated and loved.

Classical Things

by Stephen Owades

The **MIT Choral Society** ended its season with a performance of Hindemith's *Apparebit Repentina Dies* and Bruckner's *E Minor Mass* in Kresge on May 5. John Oliver led a strong performance of the Hindemith, with particularly fine playing from the brass ensemble. The chorus was occasionally covered by the brasses, (an almost unavoidable problem in this piece unless the chorus is extremely large and powerful), but its singing was precise, well-enunciated, and on pitch. A small organ was used to help the chorus (there is a great deal of otherwise unaccompanied music), and it was rather obtrusive in the quiet passages. This is a powerful and intense piece, and the performance by the Choral Society showed it off to good advantage.

The Bruckner *E Minor Mass* is rather old-fashioned in style, and is written for chorus and wind ensemble. This piece does not have the strength and distinction of Bruckner's later large choral works (such as the *Te Deum*). The use of the large Kresge organ to support the chorus helped exaggerate the already murky texture of the writing, swallowing up the distinctive sound of the chorus and instruments.

This season has seen the MIT Choral Society improve a great deal, both in terms of sound and adventurousness of repertoire, and this program was a fine climax.

The MIT Concert Band marked its twenty-fifth anniversary with a performance on May 4 in Kresge under its long-time conductor, John Corley. The program consisted of Andrew Kazdin's *Marche Baroque,* Vaclav Nelhybel's *Symphonic Requiem,* Richard Strauss's *Suite in B flat for Thirteen Winds,* and Richard St. Clair's *Double Concerto for Two Pianos and Wind Orchestra.*

The *Marche Baroque* was written while Kazdin was a student at MIT and a member of the concert band. It is rather noisy and effective in a "pseudo-modem" way, but the opaque scoring betrays the composer's relative inexperience (Mr. Kazdin has gone on to become Executive Producer for Columbia Masterworks). The performance did not help to clarify things, being itself murky and imprecise.

Vaclav Nelhybel's works tend to feature a characteristic wide-spaced, open chordal sound, which was much in evidence in the *Symphonic Requiem.* The opening movement, entitled *Preambulum,* was especially powerful and effective; the *Motet* had some pitch problems (common in slow music for wind ensembles); the *Passacaglia* seemed the weakest section overall; and the *Cantata* made clever use of a baritone soloist (Dale Macurdy) and an offstage brass ensemble (conducted by Bill Grossman). The performance was very good, with a fine contribution from Mr. Macurdy.

A small group opened the second half of the concert with the Strauss *Suite,* an unpublished work. On the strength of this rendition, the world has not been neglecting a great masterpiece, but the playing was so spiritless, muddy, and out-of-tune that it could have destroyed a much finer piece.

Richard St. Clair wrote his *Double Concerto* for the Paratore brothers, who perform frequently in the Boston area as a duo-piano team (they have played the Saint-Saens *Carnival of the Animals* innumerable times with the Pops). This new work (premiered at this concert) features a lot of showy and effective writing for the pianists, but they were often submerged by the overly loud and thick sound of the band. Mr. St. Clair's program notes were incredibly detailed; being, in fact, a complete detailed analysis of the score. The imprecision and muddiness of this performance did not help to make all of the interesting features that he pointed out evident to the listener; the last movement fell apart to such an extent that it had to be stopped and restarted in the middle.

The Concert Band has for many years encouraged and commissioned the composition of new music for winds, and has always set a difficult task for itself by performing extremely complicated contemporary scores. John Corley's dedication to the cause of original music for band has made the MIT Concert Band an important influence, not only on the MIT music scene, but on the world of music at large.

The MIT Schola Cantorum will sing *Old C* by Paul Earls and portions of the Monteverdi *Mass* in the building 7 lobby next Tuesday (May 14) at 8 pm. The Earls piece is an unusual treatment of the traditional doxology "old hundredth"; the Monteverdi was performed complete by the Schola in its fall concert. Both pieces should benefit from the resonant acoustic of the building 7 lobby (much like a large cathedral), and this represents a welcome attempt to escape the acoustical difficulties of Kresge.

The MIT Symphony Orchestra will perform the Beethoven *Pastoral,* along with Ravel's *La Valse* and Haydn's *Sinfonia Concertante,* at its final concert on Saturday, May 18, at 8:30 in Kresge.

Beethoven's *Pastoral Symphony* as interpreted in Disney's *Fantasia*

Finboard's big problem: no input to DSA budget

(Continued from page 1)

for operating money between annual budgets. Such funds were used to create VooDoo this year; Debate uses them if they win the right to go to a district tournament.

"If, for example, Debate wins next year, and we are out of unallocated money, we just won't be able to help them," Van Woerkom said.

(Discretionary funds are often used for loans. One such loan, to *thursday* falls due next spring. The paper currently owes about $1400; its debt was once as high as $2200. Finboard sources expect the loan to be repaid on time.)

Some of the activities funded last year and not yet funded for his year may just have neglected to turn in their budgets on time, Van Woerkom said.

DISCRETIONARY FUNDS 1973-74 (current year, not final)

Israeli Students	240
Rocket Society	85
Science Fiction	425
ZPG	150
VooDoo	1500
(loan)	1125
Skuffle	100
SHL	150
BSU	328
UHF Repeater	80
AWS	100
SACC	302
Parapsychology	546
Foreign Students	225
Debate	1252
Frisbee	660
Unicycle	50
TOTAL	5068

UA and ASA Budget

	74-75
ASA	875
NomCom	925
SCEP	600
Undergrad Assoc	10700
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(Continued from page 1)

administration around October or December saying how much money is needed to continue "meeting the students' needs." According to Frailey, the administration would then determine how much it can afford to give the office.

According to Harvard's Director of Financial Aid, John Malin, "a pattern is beginning to emerge. In 72-73 our tuition was $3,000 a year, now it's $3,200, and it's supposed to go up to $3,400 next term. I don't know what 75-76 will be but I unfortunately don't see any evidence that the pattern would change drastically.

"Just like Mr. Frailey is, we're trying to meet the needs of our students but that really isn't what bothers me about his ever upward spiral . . . There is a definite perception problem that's getting worse and worse as the march goes on. You simply can't walk up to an average family and tell them $3,600 a year isn't a lot of money; they'll laugh in your face. I just get the feeling that places like Harvard and MIT might be pricing themselves out of business."

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Behavioral Lifestyle Services

(Inspired by B.F. Skinner's *Walden Two*)

Behavior Research Institute, a non-profit school in Providence, Rhode Island that provides behavior modification treatment and education to emotionally disturbed and delinquent children, is developing a Behavioral Lifestyle Services project for the members of its staff, and has several openings. The goal of this project is to apply behavior modification in a comprehensive and preventive fashion, in order to improve the measured quality of life not only of the child being educated, but also of the staff members.

Participants work at the Institute in a variety of roles, and participate in the Behavioral Lifestyle project in their working and spare time. Openings exist for treatment worker, administrator, special education teacher (certified in E.D.), public relations specialist, handiman, maintenance person, social worker, secretary, film-maker and A.V. specialist, Big-Brother "Foster Parent" to live with and provide a warm home for from one to two children who attend the B.R.I. school.

Training is provided, Compensation is $100/week. For information contact Ms. F. Cooke, B.R.I., 820 Atwells Avenue, Providence, Rhode Island 02909. Telephone (401) 274-6360.

Sports

Disappointing sailing week

MIT's men's varsity sailing team finished fourth of nine teams in the New England Dinghy Championships (Coast Guard Bowl) last weekend, and disappointingly failed to qualify for the North American finals to which the top three finishers were invited.

The event, sailed at Cottage Park Yacht Club on Boston Harbor in predominantly heavy-air conditions, was won by the Coast Guard Academy with Harvard and Tufts placing second and third, respectively.

MIT's All-American team captain Steve Cucchiaro '74, sailing in A-Division with crews Kevin Sullivan '74 and Larry Dubois '76, won low-point honors for the regatta. Chuck Tucker '75 and Paul Erb '76 skippered for the Engineers in B-Division, with Randy Young '74 and Dave Jessich '75 crewing.

The results of the event were: Coast Guard 66, Harvard 67, Tufts 69, MIT 85, Rhode Island 93, Yale 115, Brown 118, Boston University 132, and Colby 165.

In the Powder Puff Trophy Regatta, sailed at the University of Rhode Island on Saturday, the MIT women's varsity squad placed fourth of seven schools. Radcliffe won, finishing first in each of the three races. Team captain Shelley Bernstein '74 skippered for MIT, with Barbara Belt '77 crewing.

The results were: Radcliffe 3, Wellesley 9, Simmons 12, MIT 14, Salem 16, Boston Universtiy 18, and Rhode Island 21.

The Tech freshman team finished fifth of nine entries in the New England Freshman Championships (Nickerson Trophy), sailed at Coast Guard on Saturday and Sunday. The regatta was won by Tufts. Bill Critch sailed in A-Division for MIT, with crews Ellen Schmidt and Barbara Belt, while Steve Ryan skippered in B, with Chris Donnelly crewing.

Women are downed by Princeton & Yale

The MIT women's crew team suffered its third loss in five races this season last Saturday, losing to both Yale and Princeton on Lake Carnegie at Princeton.

The varsity eights race was delayed thirty minutes because of a strong crosswind that made lining up on the stake boats difficult. When the race finally got underway, Yale moved out to an early lead as MIT got off to a particularly bad start. Princeton's first boat called a "power ten" at 300 meters in a futile attempt to catch Yale, and in doing so lengthened its lead over MIT.

Yale's winning time was 3:52, followed by Princeton A's 3:57, MIT's 4:09, and Princeton B's 4:16.

The eights race was followed by a pairs race in which two MIT boats met one from Princeton, the lone Tiger boat capturing the race.

This Sunday the crew will row at Middletown, Connecticut in the New England Sprints sponsored by the New England Association of Women's Rowing.

Sports

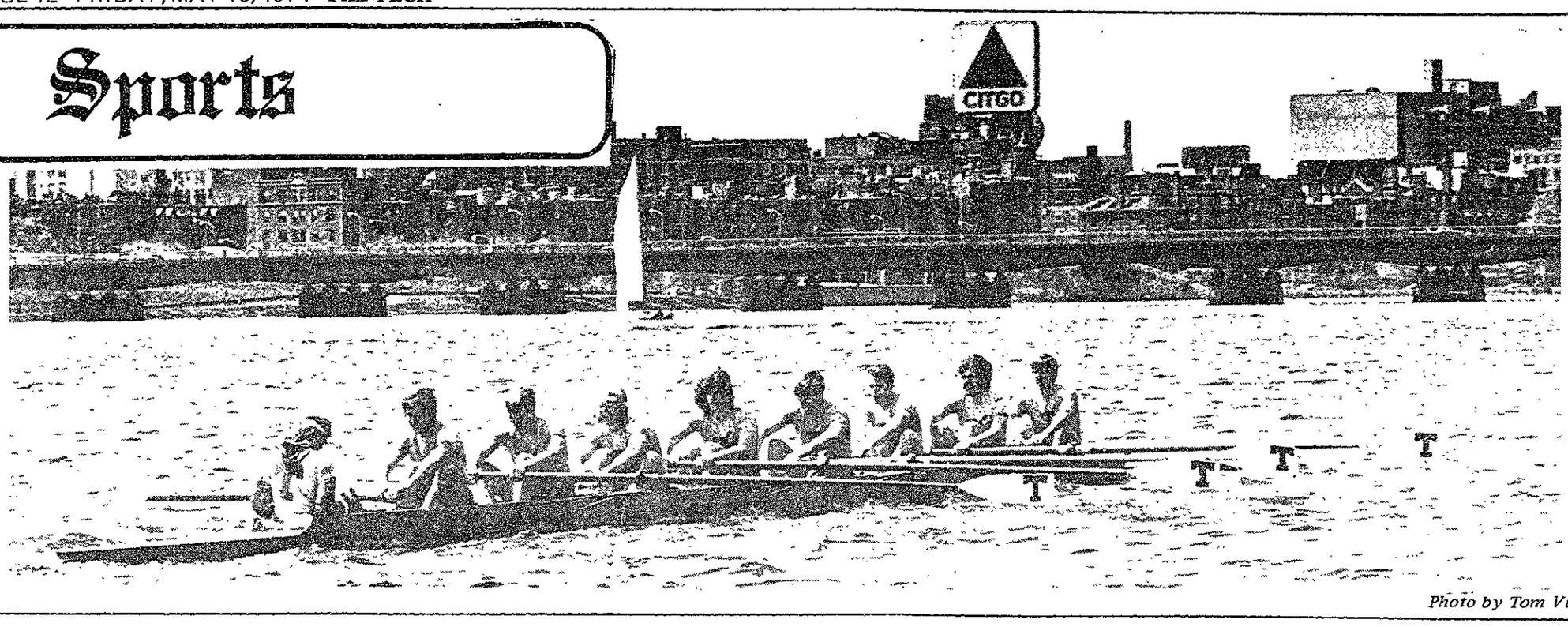

Photo by Tom Vidic

Badgers defeat heavies

By David I. Katz

The MIT heavyweight crew has been seeded third for the Eastern Sprint Championships following its loss to Wisconsin last Saturday. Dartmouth, the other crew competing for the Cochrane Cup, finished seven and one-half lengths behind the Engineer eight.

The quick-starting Tech shell, pictured above, came off the line at a cadence of 43 strokes per minute to the Badgers' 39. Settling into the 15 knot headwind, MIT had a ¾ length lead after 500 meters.

Wisconsin, rowing one beat higher, used this advantage plus their superior strength to pull even at the halfway mark.

Going into the second thousand meters, the Badgers continued to pull away. The Tech crew valiantly tried to come back but could close to no less than a length as they crossed the line. The final times were: Wisconsin 6:34, MIT 6:39.2, Dartmouth 7:09.2.

The MIT frosh, rowing only against Dartmouth, demolished their counterparts from Hanover. Showing a great deal of style and poise, the Engineers had a one-length lead after 200 meters. They continued moving away to win by eight and one-half lengths. The final times were MIT 6:53 and Dartmouth 7:21.5.

The Tech JV's rowed against Dartmouth in two fours, in the only race in which Dartmouth was a factor. All three boats were even going into the second half of the race. At this point, the superior conditioning of the Engineer oarsmen prevailed, as both fours began to pull away. The two shells continued stroke-for-stroke to the finish line, finishing .3 seconds apart.

This Saturday the MIT Heavies travel to Worcester for the Eastern Sprints. The top two finishers from each of the morning heats go to the finals. All of the MIT heavyweight crews are in tough heats and success will depend on each crew rowing to its greatest potential.

Thinclads win first, barely edge alumni

By Dave Dobos

The MIT varsity track team came from behind to narrowly defeat the MIT Has-Beens 78-76 in the first annual Alumni-Varsity track meet here Monday.

The victory saved the thinclads from a winless season, as the squad was outclassed 111½ to 42½ Saturday at Coast Guard. MIT could only manage four victories in the 18 events against the powerful Academy team. Co-captains John Pearson '74 and Gary Wilkes '75 won the hammer and 220, respectively. Greg Hunter '76 took the javelin, and Dave Grasso '75 was the victor in the discus.

For a time, it appeared as if the feeble old men (average age-24) of the alumni were going to rout the varsity, mounting leads of 41-18 and 58-37. The varsity had to sweep two of the last three individual running events to pull within three 76-73, setting up the 5-point mile relay as the meet-deciding race.

Tom Hansen '74 (grad) stayed even with George Chiesa '74, and Sumner Brown '68 fought Jimmy Banks '76 to a draw. On the third leg, Billy Leimkuhler '73 opened up an eight-yard lead on Walt Gibbons '74, but Gary Wilkes made up the distance against former teammate Elliot Borden '73 to win by a mere .9 seconds.

The varsity faced an alumni team of over 20 competitors from previous years. Big guns for the Has-Beens were All-Americans Dave Wilson '73 and Brian Moore '74, combining for 32 points. Current 100 and 220 record-holder Jim Flink '64 participated, as did Mike Oliver '65 and Bill Friedman '66. The varsity was without the services of distance aces Jeff Baerman '76 and Frank Richardson '77.

Tomorrow, MIT hosts the Easterns, with twenty of New England's finest small colleges planning to attend. Admission is $1.00, but will be free with an MIT ID.

Gary "Sugar Bear" Wilkes '75, co-captain of the track team, has this year been one of the squad's most consistent performers. Wilkes was unbeaten in the 220-yard dash during the outdoor dual meet season.

Photo courtesy MIT Athletic Department

Engineer lights gain third seed in Sprints

Tomorrow on Lake Quinsigamond in Worcester, the MIT varsity lightweights will reach for the highest goal in American rowing — a victory at the Eastern Sprints.

For the first time in five years, the varsity has produced a crew capable of capturing the Sprints crown, for seniors Dan Greene, Andy Moehlenbrock, John Sheetz, and Ralph Nauman, the answer to four years of hard work and dreaming.

The varsity, with 7 wins and 1 loss, is seeded third behind Harvard (8-0) and Princeton (7-1) after last week's decisive clouting of Penn and Navy in Philadelphia. Prior to last Saturday, MIT, Penn, and Rutgers had been tied for third in the coaches' poll.

In the varsity race on the Schuylkill River, a sudden start with French commands instead of English threw the Tech crew for the first thirty strokes. However, they came together at 33½ strokes per minute and spent almost 1500 meters walking away from the field, to a margin of 2 seats of open water (5 seconds) with 500 meters to go. Tech coxswain, Mitch Green '75, in charge of the race, watched a Penn sprint recover the margin until the last twenty strokes, when he called for the Tech sprint that broke Penn's bid. The margin was 2.1 seconds, the same as Princeton's margin over Penn. Navy finished 10 seconds behind.

The freshman first boat lost ground at the start by rowing at too high a stroke, according to captain Bob Granitz, but they finally settled down with 800 meters gone, outmuscling Penn to win by 4.1 seconds.

The second freshmen eight rowed as two fours against Penn and Villanova's 3rd varsity heavyweights, their first four beating a much larger Villanova crew by 1 second.

The JV lost to Penn (6 seconds) and Navy (0.1 second), but coxswain Dave Lee '76 and his boys are ready to go since Mike Neff '76 out for 2 weeks with a broken foot, stepped back into the "engine room" at the 6-seat. Chris Dippel '75 is back in the 4-seat, and the boat has been strong in practice. "We're going to surprise the hell out of everyone," said 2-man Frank Pattee '74.

The only varsity loss this year was to Harvard in a poorly rowed race. Since then, the varsity has worked on technique and has been moving better against opponents also raced by Harvard, such as Navy – Harvard won by 9 seconds, MIT by 10.

Since Harvard edged Princeton last Sunday, MIT, Princeton, and Harvard appear to be within 1 second of each other, and only the scramble tomorrow afternoon will tell which is the fastest crew. The contest will turn on MIT's ability to couple its superior strength with sufficient style to beat the the greater finesse of the Harvard and Princeton crews.

The morning heats, in which a boat must finish third or better to qualify for the finals, should be no obstacle to any of the lightweight boats, since they will be racing crews they have already beaten.

Final Northern net log: 6-7

By Ken Davis

MIT's tennis team competed its season this week with a 6-7 local record, dropping two out of three matches. The week was highlighted by an appearance by captain William Young '74 on the Channel 5 TV program *Five on Sports.*

The program, aired Tuesday night at 7:30 pm, featured Young playing Harvard's John Ingard at the Longwood Cricket Club in Chestnut Hill. Young won, 21-20, under the VASS scoring system, similar to ping-pong scoring in which the players alternate five serves. Young led 11-6 in the early going but then fell behind. He took the lead 18-17 with two consecutive aces, survived a 20-19 deficit when Ingard double faulted, and won on a fine rally after his service.

The team started off last week in fine fashion, drubbing Brandeis 9-0. Gerard Lum '74, playing number five, took his first singles match of the season despite high winds.

The next match, against Yale, was not quite as successful as the squad emerged on the short end of a 6-3 score. Lum won his second straight match, 6-3 in the third set. Young was defeated on first singles by Dan Grossman, 6-4, 6-3. Grossman was much improved from last year when Young handled him easily. Young and Lee Simpson '75 combined to beat Grossman and John Shostrom in first doubles after losing the first set 6-4 and trailing 3-1 in the second. Lum and Jim Datesh '77 won third doubles in an 8-6 pro set.

The regular season ended discouragingly with a 5-4 loss at Amherst. Both teams went into the match with 6-6 New England records. Young defeated John Bates 6-1, 6-3 on first singles, and he and Simpson won first doubles 6-2, 6-4. Datesh played extremely well on sixth court, as he defeated his opponent handily, 6-1, 6-4. The fourth victory came from Ted Zouros on third singles, 6-0, 3-6, 6-1. MIT barely missed finishing its New England season with a winning record.

This Friday the squad begins competition in the New England championships being held at Dartmouth. Last year, Young won the Class A singles championship, and, with Simpson, also won the doubles title. "This year I haven't been playing at the top of my game," said Young, "but at a tournament anything can happen."