

Rasmussen comments on nuclear safety

By Hans von Spakovsky

Editor's note: This is the first of a series of articles on nuclear power plant safety.

The crisis at Three Mile Island Nuclear Plant in Harrisburg, PA, has added to the growing controversy over the safety and risk of nuclear power in this country. Last week, before the Harrisburg accident, *The Tech* interviewed Professor Norman Rasmussen, the author of the Reactor Safety Study, which was first issued in October of 1975. This report, known as Wash-1400, concluded that the overall risks from reactor accidents was very small.

The controversy generated by this report caused the Nuclear Regulatory Commission (NRC), to set up a review group headed by Dr. Harold Lewis of the University of California. Based on its criticisms of the Rasmussen study, the NRC issued a statement saying that, although it did support the extended use of the probabilistic risk assessment used in Wash-1400, it did not "regard as reliable the Reactor Safety Study's numerical estimate of the overall risk of reactor accident." *The Tech: Professor Rasmussen, do you support the continued*

development of nuclear power?

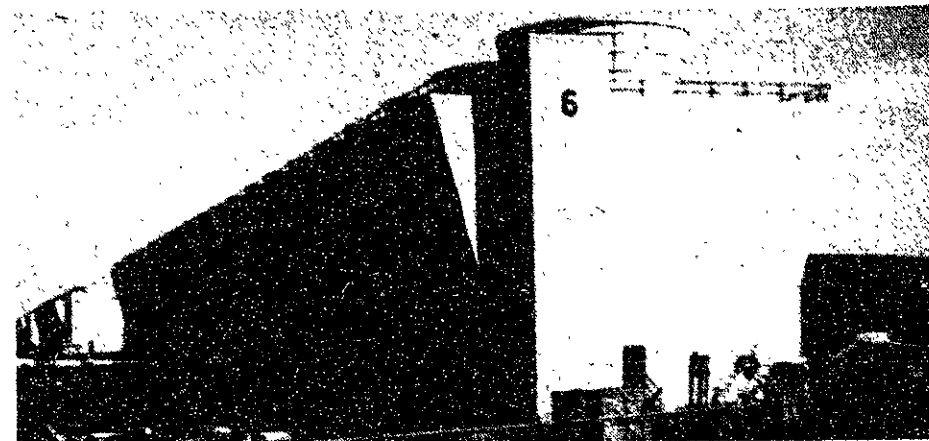
Rasmussen: I think we have a very serious energy problem in the country. It has been emphasized once more with the Iranian situation, and I think nuclear power can form part of the solution to the problem we face. About 25 percent of our electricity is now produced by oil and natural gas and it seems urgent that we convert that to coal and nuclear which are indigenous sources of which we have a fairly substantial supply.

The Tech: Is there any alternative? Would even maximum development of alternative energy sources do anything to meet our growing energy needs?

Rasmussen: Oh, sure they will, but it takes many years to develop any new technology to the point of productivity in a substantial sense. Let me give you an example. In 1945, we knew how to build reactors of any size we wanted to, to generate any amount of heat we wanted to, we knew how to make steam turbines, all we had to do was couple the two together. We invested enormous amounts of both federal funds and private company funds in developing this

technology, we met no major difficulties on the way, and the success story is that now, thirty years later, we have achieved 13 percent of the nation's electrical supply, and you divide that by four, that's about three percent of the nation's total energy supply, while this technology was a real success story. When you're talking about a big fraction of this country's or a significant fraction like 10 to 20 percent of this country's energy, you talk about enormous amounts of equipment and so on, by any technology, and you can't build up the industry to produce

(Please turn to page 2)



The Tennessee Valley Authority's nuclear facility, near Bellefonte, Tenn. The question of safety at nuclear power plants, such as this, has been raised following the Three-Mile Island incident. (Photo by Hans von Spakovsky)

Red Line modifications begun

By Joel West

The MBTA opened a new \$5.1 million temporary station Friday March 23. The new station, dubbed Harvard/Brattle, is the first step of the \$546 million Red Line extension from Harvard to Fresh Pond.

The new station, constructed entirely of wood, was opened after the City of Cambridge abandoned a last-minute attempt to get an injunction to stop the opening. The city council is still at odds with the MBTA over procedural questions. For example, the Harvard/Brattle station was constructed without an inspection by the Cambridge Building Dept. Consequently, Cambridge Electric refused to supply it with power, and the station is receiving electricity from the adjoining trolley yard, according to the *Cambridge Chronicle*.

With the new station open, two changes have been made to allow construction on the Red Line to proceed. First, the bus tunnels, which on weekdays serve 13,000 people, have been closed. Routes which formerly terminated underground now terminate on the Cambridge Common or at the new Harvard/Brattle station.

Also, motorists approaching Harvard Square from Central Square will no longer be able to turn left from Massachusetts Ave. onto Brattle.

The current entrance to Harvard station (across from the Coop) will remain open until Fall 1980 when it too will be closed to allow construction work on the new permanent Harvard station. The entrance will be replaced temporarily by an entrance on Holyoke Street.

Although it was originally intended to reach Route 128, the current Red Line extension is funded only to Alewife Brook Parkway, a distance of three miles from Harvard Square. A spokesman for the MBTA said that plans do exist for a further extension to Arlington Heights. Since the work on the Alewife extension will not be completed until 1984, the Arlington Heights extension could not be ready until at least the late 1980's.



Dignitaries and guests cut the ribbon to open the new Harvard/Brattle station. (Photo by Joel West)

Stock policy committee examines MIT's holdings

By Ron Newman

Tomorrow afternoon's scheduled meeting of the Advisory Committee on Shareholder Responsibility (ACSR) may feature a shorter agenda than expected if three proxy statements do not reach the Committee by the time of the meeting.

The ACSR meeting, to be held tomorrow at 4:30pm in room 10-300, was timed to occur two days before the monthly meeting of the MIT Corporation Executive Committee on April 6. Of the five proxies that must be voted between then and the Executive Committee's next meeting May 4, only two, Caterpillar Tractor and American Home Products have arrived so far, according to ACSR secretary Walter Milne. The Executive Committee makes final decisions on how MIT's shares are voted.

Definitely on tomorrow's agenda are resolutions asking Caterpillar Tractor to establish a review committee on the social effects of that company's operations in South Africa, and asking that American Home Products establish a committee to study the nutritional effects of their infant formula marketing practices.

Last year's ACSR abstained on a similar resolution on infant formula, claiming that the issue "needed to be explored more thoroughly." Nutrition activists charge that in Third World countries such products are frequently stored under unsanitary conditions and are diluted to save money, resulting in infant malnutrition and death.

Other proposals that may be considered at tomorrow's meeting included two resolutions asking Mobil and Standard Oil of California to reduce their shipments to South Africa by one-third. Proponents of these resolutions allege that much of the oil sold to South Africa is then resold to Rhodesia in violation of US

government sanctions against that country.

Still other resolutions ask that Standard Oil of California report on the company's excess holdings of Federally-irrigated land in the Southwest; that Mobil recognized black trade unions in South Africa; and that Eastman Kodak refuse to sell photographic supplies to the South African government. A similar Kodak proposal was approved by the ACSR last April but was subsequently rejected by the MIT Corporation Executive Committee.

CJAC begins president screenings

By Bruce Kaplan

The "single largest concern (in choosing the next president of MIT) is financial stability," said Barry Newman, UA President and member of Corporation Joint Advisory Committee (CJAC). The comment passed uncontested by the members of CJAC at an 'Open Forum' held March 19. The meeting, which was held to solicit student opinion, was attended by scarcely a score of undergraduates and graduate students.

The 18 member committee (six members of the corporation, six faculty members, three graduate students, and three un-

dergraduates) is one of three that will present a recommendation to the Corporation regarding the selection of a successor to Jerome Weisner. Secrecy shrouds the process, and Gregory Smith, Chairman of the Committee, would not reveal the names of any of the candidates. It was noted that the types of persons being considered fell into two categories: insiders and outsiders. The outsiders were described as being distinguished citizens, who are not necessarily in technology. The insiders include the top administration, all the deans, the department heads, and illustrious professors, although one fre-

quently mentioned 'insider' has requested that he not be considered.

The Forum was broken up into two parts. During the first, six students with prepared remarks were scheduled to make suggestions. The second was supposed to be the "forum" but the discussion was one sided; the Committee would not knowingly reveal anything of substance and dodged questions.

The general apathy that surrounded the meeting — as evidenced by the extremely low turnout — pervaded the agenda; one-third of the scheduled speakers failed to show. All of the student speakers (three graduate, one undergraduate) stressed minority awareness as an important trait the new President must possess. To two of the students this was the only attribute that they wished to mention, to a third it was the most important. Only David Germany, a graduate in economics, dealt with the issue of primary concern to the committee — that the committee itself (through Newman) had let slip — that of funds. Germany stated that the new President must be "a near genius with regard to university funding."

During the forum section of the meeting, a great number of comments dealt with increasing the visibility of the President to the student body. The Committee expressed gratitude for these comments and stated that visibility had not previously been considered to be a characteristic of great importance.

When asked whether the new President would be a full time fund raiser, as Jerry Weisner has become, or an administrator, the Committee (through the person of student member Tim Morgenthaler '80) deftly dodged the question and returned it to the inquirer by asking him to state his feelings. The student restated his question in the form of a comment urging that the President be chief executive, and Smith replied that the President should run his own administration and should be required to devote only a minimum amount of his time to raising funds.

Other criteria in deciding whom to recommend will be the individual's academic credentials, his or her accessibility, his way of thinking, his physical energy to cope, his ability to raise funds, and his national visibility.

inside

Gordon Haff examines the history of the fraternity system from its inception to the 1960's in the first of a three part series. **Page 8.**

Two people associated with the varsity hockey team tried out for the United States Olympic team last week, and although neither one was invited back for further tryouts, both found the experience enlightening. **Page 12.**

news roundup

World

Arab ambassadors withdraw — A day after the Arab League began a political and economic boycott, six Arab ambassadors left or were preparing to leave Egypt. The boycott would isolate Egypt in the Arab world, but Egypt apparently has made preparations to deal with the sanctions.

Entebbe airport attacked — Attempting to close the flow of Libyan supplies to Idi Amin's Ugandan forces, Tanzanian warplanes Sunday bombed and strafed the airport in Entebbe. An estimated two to three thousand Libyan soldiers have now joined Amin's forces defending Uganda from a force of 4000 Tanzanian invaders.

Nation

Bubble shrinking, Core cooling — Federal inspectors determined yesterday that the hydrogen gas bubble in the dome of the Three Mile Island, Pa. nuclear plant has diminished in size. They have also announced that the core has cooled and that the chances of a melt-down are now almost certainly nil. However, radiation is still being emitted, and pregnant women and young children are being evacuated from the area.

Passman acquitted — Former Congressman Otto Passman was found innocent Sunday of charges of accepting illegal gratuities from South Korean rice dealer Tongsun Park, of tax evasion, and of conspiracy. Passman had been accused of obtaining \$213,000 from Park and then not paying income tax on this money. After the jury's announcement of its verdict, Passman leaped into the air, hugged his attorney, and then declared "It's great to be a citizen of the greatest nation on earth."

Local

Back Bay blacked out — twice — A series of underground fires and explosions marked the beginning of a large power black-out in the Back Bay area Sunday night and again Monday night. Over 100,000 persons were estimated to have been left powerless into early Monday morning. Monday evening, another similar fire under Commonwealth Avenue left the same area without power. Boston police sealed off the area at 11pm Sunday night. Subway service was not affected.

Anti-nuclear protesters meet King — About five hundred anti-nuclear demonstrators met Governor King Sunday evening at his Winthrop home. He agreed to accept a list of demands given him by the Safe Energy Alliance of Winthrop.

— Richmond Cohen

Weather

Generally dreary weather is in store for the Boston area today and tomorrow. Under mostly cloudy skies with southerly winds, highs will reach the lower 50's. Scattered showers will persist throughout the day. For tonight, scattered showers with a low expected near 40. The outlook for Wednesday: showers, heavy at times in the morning will give way to lighter rain in the evening. Highs in the lower 50's. Looking ahead: cooler and drier by Thursday. Chance of rain 90% today, 70% tomorrow.

notes

Announcements

Nominations are being accepted for the **Karl Taylor Compton and William L. Stewart Awards**. The Compton award, the highest award given to students by the Institute, recognizes excellence and devotion to the welfare of MIT. The Stewart Award gives recognition to a single, outstanding contribution to a particular activity or event. All nominations should be received by the Awards Selection Committee in room W20-345 by Apr. 11.

* * * *

Nominations are invited for the **James N. Murphy Award** to be given to an Institute employee at the Awards Convocation in May. The Award was established in 1967 as a memorial to Mr. Murphy for his immeasurable contribution to community life at the Institute. It will be given to an employee whose spirit and loyalty exemplify this kind of inspired and dedicated service, especially with regard to students.

Nominations may be in the form of a short letter and will be considered by a committee of students and employees. They should be addressed to Dean Robert J. Holden (Room W20-345) and must be received by April 11.

Sports

Teams interested in playing **Ultimate Frisbee** this spring must present a roster of ten or more players at an entry meeting tonight at 7pm in 4-149. Rules regulations, and scheduling will be discussed at the meeting. If there are any questions, contact Steve Pettinato at 266-9272.

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Second look at Brown's Ferry

(Continued from page 1)

it and get it installed quickly enough to have an impact, in less than twenty years. For example, suppose we had all our hydroelectric dams torn down now, and started to build them over again: they generate 13 percent of the country's electricity, too. How long would it take to get all of them replaced and in operation. I suggest to you it would be hard to get it done within 20 years. It takes only ten years to build a big dam anyway, and so my point is, that I don't care what technology it is, when you're talking about enough of it to generate 20 percent or 10 percent of this country's energy, you're talking about a massive amount of equipment that you have to develop a whole big industry to produce and install, and you have a learning curve and a development time. So none of the new technologies are going to have a massive or substantial impact for the rest of this century. But if we work hard at it, it might begin to have an effect in the next century, and we should work on it.

The Tech: What would you say about the safety of nuclear power, taking into account the Lewis report and its criticisms of the statistical methods used in Wash-1400? Do you still agree with your original assessment? (Wash-1400 concluded that with 100 reactors in operation, the chance of a core meltdown is about 1 in 200 per year, or about 1 in 20,000 per reactor per year)

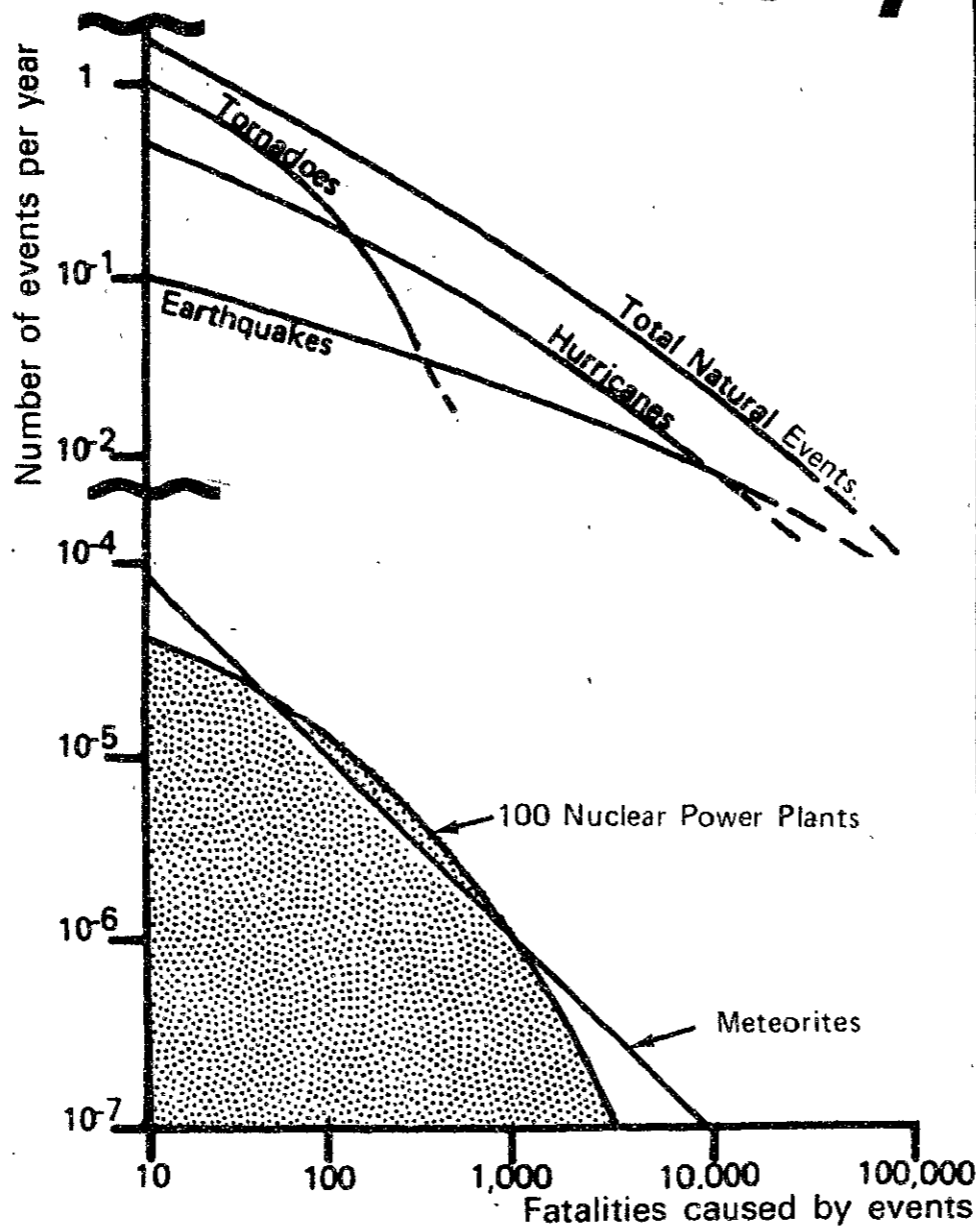
Rasmussen: Yes, I think our original assessment is about right, although I do believe that the uncertainty bounds were somewhat optimistic and I would increase them somewhat now from what I've learned in the four years since the report has come out. But I believe we have enough experience from operating large nuclear power plants to know that the upper bounds we predicted in the Wash-1400 report can't be far off, and by that I mean not more than a factor of two or maybe four at the most. So there is not rank room for a large understatement of the uncertainty in the unsafe direction. Of course, there is uncertainty in the unsafe direction. It could be substantially safer than we said, and I suspect that they probably are. Just as Lewis himself has stated several times that he thinks that our answers were substantially conservative because of some of the ways we treated human failures. I think that's true, and probably the answer lies significantly below where we predicted.

The Tech: Your study concluded that earthquakes were a very small contribution to the overall risks of a power plant?

Rasmussen: That's correct.

The Tech: Do you have any comments about the recent closing of five nuclear power plants by the NRC? Was it a reasonable precaution?

Rasmussen: Well, if you look at what people who study earthquakes have to say about the likelihood of the very large earthquakes that we're talking about to damage the plant in this particular case, you're not talking about a little shaking, you're talking about a very big earthquake. Each plant is designed to sustain the biggest earthquake that could possibly happen at that site based on historical record. Of course, there is some possibility in getting an even bigger one, but I think most people would agree that the probability of such a large earth-



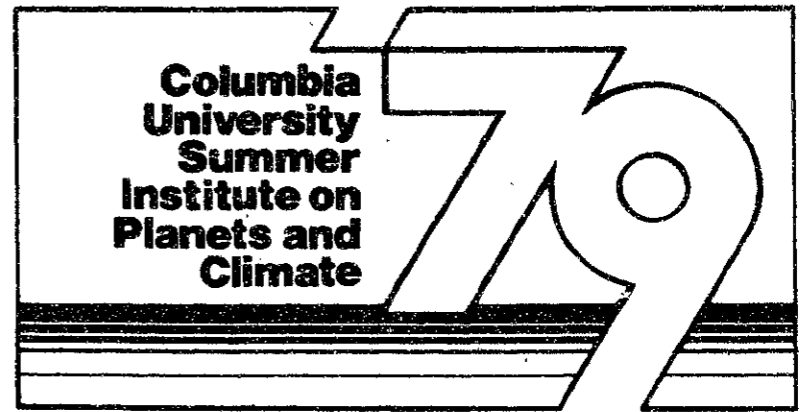
Rasmussen report graph showing "Frequency of natural events involving fatalities." The graph is intended to show how rare a nuclear disaster is; even with 100 operational nuclear reactors.

quake at these five sites per year as a probability is something like 1 in 10,000 to 1 in 1,000,000. Now if you ask yourself could you have said, "We'll take a month and really understand the problem, and then we'll decide whether it's serious enough," because the analysis, after all, was only done on one plant, and I assume it would show the same problem in the four others. It might have been an alternate route that the NRC could have followed without exposing the public to a substantial risk. Now, I don't have all the facts available to me that they had available to them. With the facts I have available to me, it looks like it would not have been a big risk to say, "you have to shut down in thirty days unless you can verify or assure us that this problem is not serious. That's an alternate route that might have been used, but I don't know why they did what they did."

The Tech: Brown's Ferry was the most serious accident in the history of our commercial nuclear power plants. Do you think it was overblown by the media? Many reports said it was a "near miss." Was this exaggerated, or was it that close to meltdown?

Rasmussen: Well, we really didn't come close to melting the core, but we certainly came a lot closer than we ever had in any other system failure in a plant. It was a very serious fire and we

wiped out some of the safety systems that were needed by destroying their electrical tape. What the event showed was, how very ingenious operators can be in recovering from such an event, the kind of thing we did not give credit for in Wash-1400 and in the Lewis view one of the reasons we are conservative. But so many people say, "Gee, you were lucky, you almost had a disaster," and I suppose that's one way to look at the facts. I look at it in a slightly different way in saying, "This was the most serious incident a plant has ever had to undergo, it was a very bad fire beyond what the plant is designed to cope with. Yet, because it was so redundant and so diverse in the ways it could cool itself, it sustained this fire without overheating the fuel, without any release of radioactivity, and without any threat to the public health and safety." So there are two ways one can look at it. I think that it was a real test of the design philosophy of the plant and that it survived and passed the test with flying colors. Most people think that we still had a substantial way to go before we would have melted the fuel, at least a probability of 1 in 100, or so, before the plant would have been in serious trouble. So sure, I guess the accounts or reports have been overstated before, but I wouldn't try to say it wasn't a serious event.



Undergraduate Grants

In cooperation with the Goddard Institute for Space Studies, Columbia University announces a Summer Institute on Planets and Climate. The program will meet from June 11 to August 17, 1979.

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Tom Curtis

Student freedom: going, going...

Student freedom enjoyed unprecedented growth in the late 60's and early 70's. When the right to vote, the freedom to drink, and the freedom from the draft lottery were extended to everyone between 18 and 21, students had the full rights and privileges of citizenship for the first time.

Freedom being chipped away

In the last year, however, authorities have begun to chip away at this student freedom. And so far, students have not been as successful in retaining their freedom as they were in winning it.

The most notable encroachment on student freedom came when the Massachusetts State Legislature considered what to do about drunk driving. The legislature didn't consider stiffer penalties for drunk drivers. It didn't consider increasing efforts to educate the public on the dangers of drunk driving. What it did consider was the restriction of drinking privileges — student drinking privileges. The result was drinking age set at 20 and a renewed distinction between the rights and privileges of students and the rights and privileges of other adults.

Student freedom is being attacked from another angle in Washington D.C. Various proposals to revive the draft in some form are now before Congress. These proposals would force students into involuntary service either in the military or in social programs. The draft proposals threaten to limit the most significant student freedom — the freedom to choose what to do with one's life.

The simultaneous proposals to revive the draft and raise the drinking age are very inconsistent. On the one hand, government is entrusting students with the responsibility to defend the country; on the other hand, government is telling students they are not responsible enough to handle alcohol.

The drinking age and the possible revival of the draft assault two of the three biggest reforms in student freedom. Only the 26th Amendment guaranteeing 18-year-olds the right to vote is not currently under attack. Even that could be threatened if a Constitutional convention is called.

Eat your Vegetables

On campus, student freedom isn't doing much better. The freedom to smoke marijuana — once permitted by an unofficial Campus Police policy of looking the other way — has been attacked by a recent CP drug crackdown.

Representation on campus committees is another area where students have been set back. In the wake of the 60's, students were found on most major committees which dealt in any way with students. Now this has changed. Last year when Chancellor Gray formed the ad hoc committee on the CIA, he did not name any student members even though one of the issues before that committee would be student recruitment by the CIA.

And then there is freshman compulsory commons, the latest threat to student freedom. Compulsory commons would unnecessarily restrict many students freedom of choice of how, what, where, and when to eat.

Students at other schools have it worse than we do, however. At BU, the extent of student freedom is often limited by the school's president, John Silber. When Silber saw an article in a campus newspaper which he didn't like, he took away the paper's funding.

What does all this mean? It means that the status of students is moving back to the pre-60's era of restrictiveness. Students are no longer being treated as adults; they are being treated as children. Proposed and existing rules tell students where to live, what to eat, what to drink or smoke, and how to spend a few years of their life. Compulsory commons seems like MIT's way of saying "Eat your vegetables. They're good for you."

I think most students appreciate concern for their well-being. But I think most students also cherish the freedom to live as they see fit. Advice from others is welcome, but this advice should not come in the form of mandatory restrictions on our personal life. We don't need a big brother.



Michael Taviss

Nuclear industry imperiled

An ominous cloud hangs over the nuclear industry this week, a cloud that will remain long after the one over Three Mile Island dissipates.

March was not a good month for the industry. First, on March 16, a heavily promoted movie starring Jane Fonda opened at 800 theatres across the country. Then last Wednesday, a cooling pump failure in a nuclear power plant on an island in the Susquehanna River precipitated the nation's worst nuclear accident.

According to *The Washington Post*, the details of the accident are as follows: at 4am Wednesday, two pumps in the secondary cooling system failed and the reactor shut down immediately. However, pressure built up in the primary cooling system as there was no way to dissipate the heat in the reactor core.

When the pressure got dangerously high, an automatic safety valve opened and released radioactive cooling water into the "containment", the concrete and steel structure which encloses the reactor and the primary cooling loop. However, the valve failed to close again, and precious coolant drained away. An emergency coolant system flooded the core with water.

At some point during the accident, the reactor core became exposed; the intense heat of the uncooled portions of the core is believed to have melted some of the reactor's fuel rods. Also, the temperature in uncooled sections of the reactor was great enough to dissociate water into hydrogen and oxygen, and a giant bubble formed which further hindered cooling and presented the danger of explosion.

The consequences of the accident raise grave doubts about the safety of the nation's commercial nuclear power plants. Even two unrelated failures (the first-coolant pump and the overpressure valve) should not lead to a chain of events which results in damage to the reactor's fuel; and as a matter of course, none of the highly radioactive water should be released from the reactor's primary coolant system, which in theory is a closed loop.

Nuclear Regulatory Commission officials considered the threat of a meltdown quite real during some stages of the crisis. A meltdown, or "The China Syndrome", could kill thousands of people and render the area uninhabitable for years.

The design difficulties involved with nuclear plants do pose some problems. The machinery has to be capable of operating at near-capacity for a year or so without major maintenance. Radioactive substances must be contained at all times, preventing contamina-

tion of workers or the atmosphere. The nuclear fuel itself generates a serious problem, as the Three Mile Island accident has demonstrated: even when "shut down", the radioactive core generates large amounts of heat which must be dissipated; unlike a coal or oil-fired plant, the nuclear plant can not be operationally turned off.

Still, these questions are likely to be dealt with in the wake of the accident. Only eight of the nation's nuclear plants were built by Babcock and Wilcox, and while the seven remaining reactors (of a design similar to the Three Mile Island plant) should be shut down for inspection, last week's events do not directly reflect on the integrity of other firms that build commercial nuclear reactors. The result of lengthy investigation into the accident will probably yield additional safety systems and improved designs; MIT graduates can play an important role here.

There are other scientific and technical issues involved. An Oklahoma City jury is currently considering whether or not safety standards were lax at the Kerr-McGee nuclear fuel plant in Crescent, Oklahoma. The nuclear waste disposal question has not been solved yet, and some scientists feel that it is insolvable. On the biological side, debate is raging over the effects of low-level radiation on human beings.

But the most distressing side of the incident at Three Mile Island had very little to do with science

— painfully little, in fact. The accident dramatized the complex social and political interactions, which tend to obscure technical issues involved, and suggested that existing institutions may not be reliable enough to handle such a potentially dangerous endeavor.

Prior to the Accident

- New England senators protested NRC's closing of five plants built by Stone & Webster because of an alleged error in the calculation of earthquake stress-resistance;

- Energy Secretary James Schlesinger proposed legislation that would speed up the nuclear licensing process;

- Last week, *Newsweek* columnist George F. Will blasted the new movie *The China Syndrome* saying that it "uses fact, where convenient, for believability" and that "the movie rests on fantasy rather than fact." He also quoted an argument by the Edison, Electric Institute that a meltdown would result in "zero deaths, zero injuries."

After Wednesday

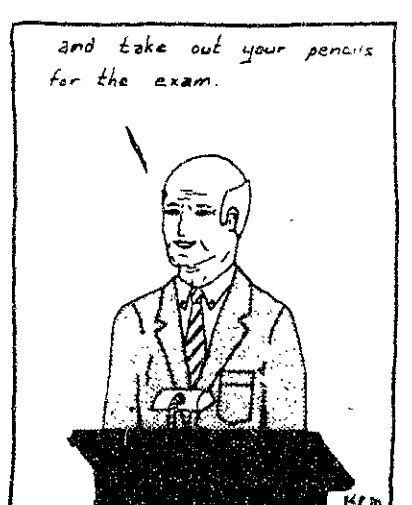
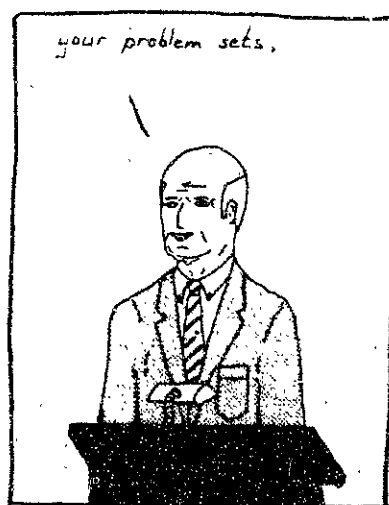
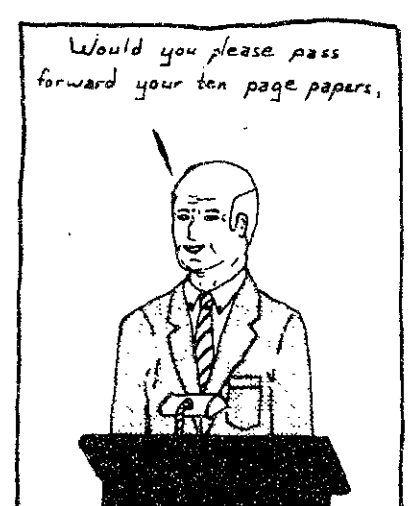
- Senator Howard Baker (R-Tenn.), who last year fought to save federal funding for the Clinch River breeder reactor, asked the NRC for information regarding the safety of the TVA (Tennessee Valley Authority) reactors in his state.

- In Thursday's *New York Times*, a quarter page ad by Mobil Oil Co. in part bemoaned the closing of the five Stone & Webster plants;

(Please turn to page 6)

Paul Hubbard

By Kent C. Massey



The Tech

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 Tuesday, April 3, 1979

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feedback

Marijuana should be legalized

To the editor:

I agree wholeheartedly with Bob Wasserman's otherwise ludicrous column that the drive for decriminalization of marijuana has gone too far. Decriminalization means that the attitude of society is that smoking marijuana is wrong and illegal, but there are so many people smoking it that we'll only slap your hand for it. This satisfies a lot of people who are only concerned with being punished for breaking the law and are not concerned with the deeper issues involved: their right to consume whatever recreational drugs they want with no social pressure for or against the use of the drugs and even more importantly — the fact that they are being made criminals, lawbreakers who are forced out of being good, law-abiding Americans because they consume a plant. There are an estimated 50 million marijuana smokers in the United States. Almost one

quarter of the population is being branded as criminals.

Smoking marijuana is no longer an underground, radical activity. It is a well-accepted, even encouraged, activity among youth and adolescents. Social pressure is definitely to smoke; to be radical and different one has to not smoke. Even many middle-aged, middle class men and women and frequently do cocaine. Given the prices of cocaine and top-grade Hawaiian and Sinsemillian, no one but a professional person with a good income or a dealer can afford to buy them.

There are two things for the would-be radical, or person concerned with human rights, values, and dignity, or the person interested in preserving respect for law and order in our great country to work for. First, the right to grow marijuana and second, the abolition of all laws restricting the use of marijuana and other recreational drugs

among adults. Paradoxically, the only way to do this is to break the laws and be willing to pay the price. I, for one, am proud to be an American and would be willing to go to jail if the laws of our country say I should. The only way to change these immoral and ridiculous laws is through non-violent civil disobedience, large numbers of people openly and publicly breaking the law. This technique was used successfully in the civil rights, free speech and anti-war movements of the sixties, and the time is coming for us to take the initiative to change things for the better. If you smoke dope or have friends who smoke that you don't consider criminals, grow a plant in your windowsill. Grow lots of plants, they're very pretty, and include some marijuana plants among them. And support the J. Edgar Hoover Memorial Smoke-in in the Great Court in early May.

Duncan Borland '82

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Tuition riot a success

To the Editor:

Please inform the MIT Community of the unmitigated success resulting from the recent Tuition Riot, held Wednesday the seventh of March. Due to the somewhat antagonistic weather, the riot was kept to a very manageable size. The hardened cadre of experienced agents provocateurs were, in the course of binding arbitration, able to settle the dispute to the satisfaction of all con-

cerned, resulting in the reduction of tuition for the attendant rioters (one rioter now owes \$195 for this term's entire tuition) and an agreement to cease student activism on this matter for the rest of the year. In order to cheerfully violate this sacred trust, we are pleased to announce the resumption of hostilities. April 11, 5pm. Be there, Aloha!

Straker Melencken '81

CANDIDATES FOR CLASS OFFICERS

What do you think you're doing?

In a few days, some of you will be Class Officers — then what? Come to a brief, informal meeting co-sponsored by the Undergraduate Association and the Alumni Association. We'll talk about Class Officer responsibilities, class activities, and how we can work together to get some good things going! Everyone welcome!

April 4, 1979 7:00 pm 10-105 : (Bush Room)

Editorials, which are marked as such and printed in a distinctive format, represent the official opinion of *The Tech*. They are written by the Editorial Board, which consists of the chairman, editor-in-chief, managing editor, executive editor, and news editors.

Columns are usually written by members of *The Tech* staff and represent the opinion of only the author, not necessari-

ly that of the rest of the staff.

Letters to the editor are written by members of the MIT community and represent the opinion of the writer.

The Tech will attempt to publish all letters received, and will consider columns or stories. Letters should be typed, preferably triple-spaced on a 57-character line. Unsigned letters will not be printed. Authors' names will be withheld upon request.

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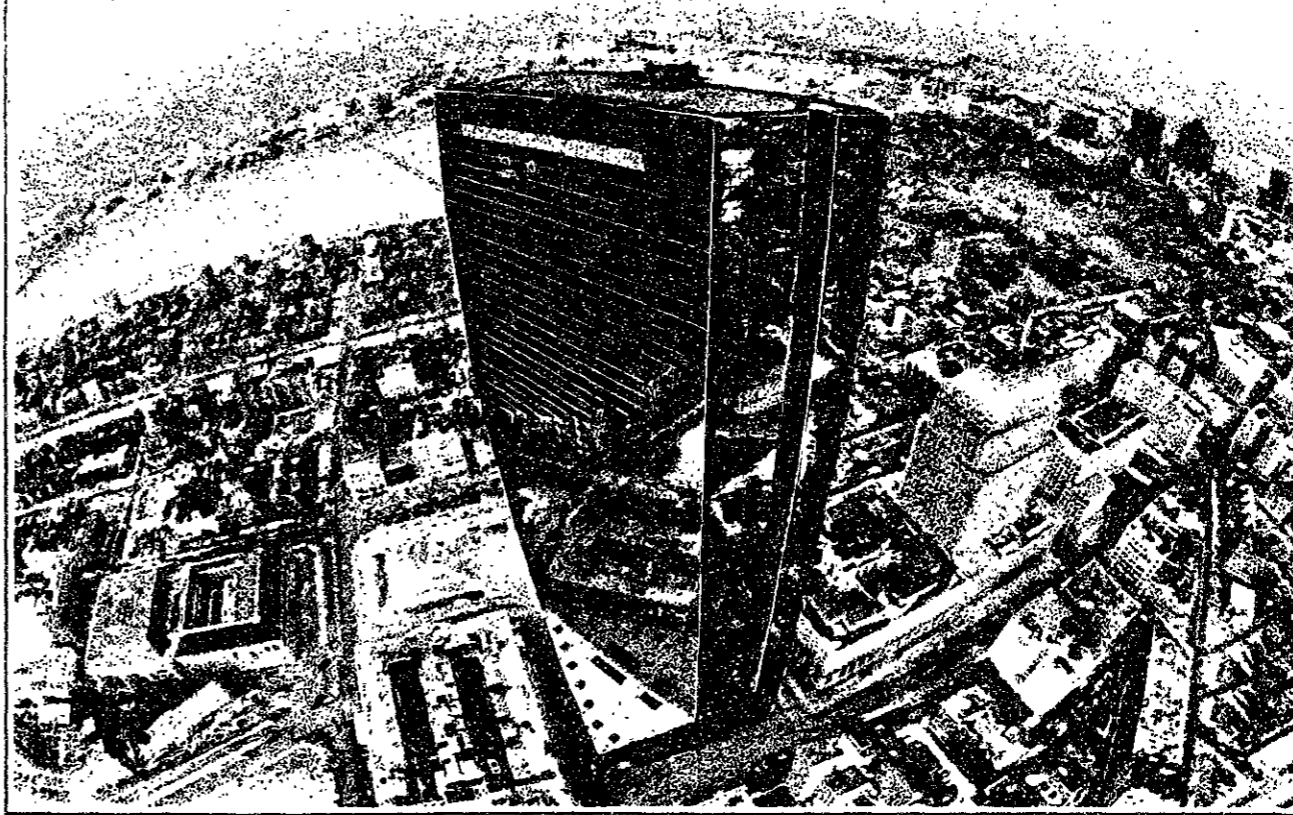
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Opinion

Cloud over Three Mile Island

(Continued from page 4)

Insiders expect that President Carter has decided to downplay nuclear power in his energy speech for next week.

If the nuclear industry is seeking to restore the credibility lost in the wake of *The China Syndrome*, Metropolitan Edison, operators of the plant, showed no evidence of it in their handling of the incident. The mayor of adjacent Middletown, Pa., did not learn of the accident until several hours after the fact — and then only from the news media. Pennsylvania Governor Richard Thornburgh, who was responsible for any decisions regarding evacuation of the surrounding populace, was not told of radioac-

tive releases planned by the utility until after they had been made. The federal government was not told either. As outlined in *The Washington Post*, NRC and utility spokesmen were simultaneously telling the press radically different stories.

To deal with these problems, the Senate should swiftly pass a bill proposed by Sen. Gary Hart (D-Colo.); under the bill, the NRC would assume control of a nuclear power plant in the event of a crisis. An integrated Federal disaster team would eliminate the problem of the left hand not knowing what the right was doing, and also eliminate any possible conflict of dollars versus lives.

The debate over nuclear power will be fueled by the Three Mile Island incident. Unfortunately, much of the opposition to nuclear

power comes from anti-technologists, people who blindly attack "progress". Coal plants will produce a guaranteed increase in lung cancer deaths, and foreign oil is becoming more expensive and less available. Perhaps the Department of Energy will now give some real attention to solar energy. But the most promising energy "source" will not be used; the political reality is that only a small reduction in private automobile use will result from \$1 or \$2/gallon gasoline prices.

Meanwhile, the nuclear industry will attempt to follow the maxim of a recent president: you can fool most of the people most of the time, quietly whispering to anyone who'll listen, "... no one was hurt ... nuclear plants are safe ... the system works ..."

feedback

Dining proposal is arbitrary

To the Editor:

A movement toward standardization is inherent in any large organization, but when the organization is MIT it is to be hoped that this movement could be minimized. The proposed recommendation by the Committee on Campus Dining is such a movement. The stated goal of the CCD is to increase the varieties of student experience, but a mandatory commons would have the opposite effect. A student who cooks for himself can increase his skill and vary his diet to suit his taste, but once on commons he has little freedom of choice. The CCD's goal could be better served by recommending that cooking classes be made available and students encouraged to take them.

With the cost of schooling at MIT increasing yearly, the cost of eating on commons cannot be ignored. Individual cooking, when reasonable care is taken in shopping, is significantly less expensive than commons, as the CCD's own study has shown. And while the CCD has not yet finished its evaluation of the nutritional value of meals eaten by students who cook, the preliminary data seems to show that those students eat reasonably, if not as well as is possible.

Efforts like this one to "vary the experience" of students are arbitrary and costly. It would be less painful and more economical to simply issue uniforms or paint all students the same color.

Paul G. Riegel, '82

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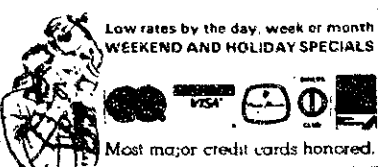
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Remake of *The Champ* is a winner

The Champ, starring Faye Dunaway, Ricky Schroder, and Jon Voight. Directed by Franco Zeffirelli, produced by Dyson Lovell. An MGM picture; opening Wednesday at the Sack Pi Alley.

By Joel West

Perhaps I'm sentimental, but I find *The Champ* a sincere, touching film. Ricky Schroder as Timmy "T.J." Flynn steals the show, playing the eight-year-old boy about whom revolves the lives of Jon Voight and Faye Dunaway.

Voight is the proud 37-year-old Billy Flynn, an Irish boxer who gave up his title seven years ago to raise his son. If Voight merely acted tough and swung his fists well, there would be little to say about his performance: one might say that he's a better boxer than Sylvester Stallone, or that he does a convincing imitation of being loaded. But Voight contrasts the different sides of Flynn — the drinking, gambling has-been versus the blue-eyed father who has tried to teach his son right from wrong.

Dunaway as Annie Phillips finally gets a role which shakes the stereotypes of her more recent work. True, she is the woman who abandoned her husband, and granted him custody of their infant son; as in *Eyes or Network*, she is a successful woman who has little room for anything outside her career. A few pounds have softened those

high cheekbones; although others complain of flab (her attire hides any pounds that might have gone elsewhere) my feeling is that she has finally become human — a far cry from Dumas' treacherous Milady or the icy wife in *Chinatown*.

Dunaway's best moment comes when she embraces a bewildered Schroder, who does not know that she is his mother. The maternal Dunaway is convincing. Ironically, it is the cold Dunaway that is weak: we are made to realize that the coldness is merely Annie's front — the real Mrs. Phillips is the one who for seven years has longed to know her only child.

Ricky Schroder, who turns 9 next week, was the perfect choice for the indefatigable son of the divorced couple. Amazed at his father's gift, discomfited in a new suit, devastated by his father's rejection, Schroder is T.J., a blond-haired Dennis Mitchell type.

Much of the success of the movie is due to the efforts of director Franco Zeffirelli, who here makes his first American film. Schroder obviously lacks the acting experience of Voight or Dunaway and thus must have required expert direction to bring off his scenes. Also, the Italian director expanded the role played by Dunaway from the fleeting figure of the 1931 version of the movie.

The supporting cast is flawless. Arthur Hill does a good job with the limited role of Mike Phillips, Dunaway's rich husband. Jack Warden is endearing as Flynn's manager, especially in the scene after the boxer comeback bout. Mary Jo Catlett shows promise beyond the shallow role of Josie, Flynn's concerned coworker.

Music by Dave Grusin is perfect throughout. From the genesis of the opening scene to the dramatic reunion of father and son, from the Carribean melodies of the racetrack to the jazz for yacht-bound jet-setters, Academy Award nominee Brusin displays the subtle touch he used in *Heaven Can Wait*, and once again demonstrates that there are film composers who can do more than write Star Wars tunes.

This is a small movie, not one with anything new to say. But *The Champ* is a worthy remake of a timeless fantasy, a movie, unlike most remakes, that has as much validity as the original. Perhaps it will also serve as a vehicle for young Ricky Schroder, who would then be emulating his counterpart of the 1931 version, Jackie Cooper.



T.J. (Ricky Schroder) refuses to believe that Annie (Faye Dunaway) is his mother in *The Champ*.



Jon Voight plays Billy Flynn, an ex-boxing champion who attempts a comeback for the sake of his idolizing son, T.J.

on the town

MIT

Auditions for MIT Dramashop's production of Ibsen's *The Wild Duck* will take place tonight and Wednesday at 7:30pm in Kresge's Little Theatre. The play will be performed the first two weekends in May.

* * * *

The last *Strat's Rat*, dubbed the Ed King Memorial Toga Rat, will take place this Friday. The 20-year-old drinking age has spelled the end of this incarnation of the perennial campus mixer; toga-clad participants will find that everything this one last time is free. 8:30pm in the Sala.

Music

The Allman Brothers Band will be coming to the Music Hall April 23 at 7:30pm. Tickets are \$9.50 and \$8.50; they are available at the Box office, Out-of-Town, and various other outlets.

Theatre

The Shadow Box, the Pulitzer Prize-winning play directed by Richard Chamberlain will run through Apr. 22. The curtain rises Tuesdays through Fridays at 8pm, Sat. at 7 and 10pm and Sundays at 3 and 7:30pm. For information call the Charles Playhouse at 426-6912.

* * * *

A *Chorus Line* returns to Boston beginning March 21. The musical plays Tues.-Sat. at 8pm, with matinees Wed. and Sat. at 2pm, Sun. at 3pm. For ticket information call 426-4520.

* * * *

The Madhouse Company of London has imported insane British comedy to these shores under the title of *Silly Buggers*. The show plays Tuesday-Friday at 8pm, Saturday at 7pm & 10pm, and Sundays at 3pm. For further information call the Charles Playhouse at 542-0095.

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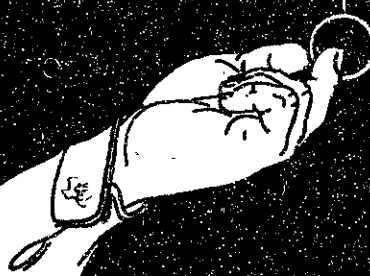
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Frats began student housing

By Gordon R. Haff

Editor's Note: This is the first of a three-part series on fraternities.

MIT's fraternity system started in the post Civil War period to deal with the lack of undergraduate residences. MIT, which was still in Boston, followed the mold of most undergraduate colleges of the period in not having a dormitory system.

Even Yale and Harvard's renowned house systems had not yet come to pass. In fact, they would not exist until into the late 1920's and 1930's when a man by the name of Harkness would set them up at Harvard after being turned down by Yale. When Harvard's program was proven successful, Yale subsequently followed suit.

MIT's first fraternity was Sigma Chi, founded in the 1880's. The system expanded to ten houses within a decade. Three more houses were added by 1910. At this time, aided by a 2.5 million dollar grant from a "Mr. Smith", eventually revealed to be George Eastman, the Institute was planning to make its move across the river to its present location. There, MIT planned to build its dorms in a quadrangular setup of classical design centered around an expanded Walker Memorial which would function as the student center.

However, this grand vision never came to pass. Richard MacLaurin, MIT's brilliant leader in the move across the river, died unexpectedly of pneumonia in 1920 and the resulting vacuum withered many ideas on the vine. The Walker quadrangle was one of those ill-fated ideas.

Under President Nicholas, who was in office for only seven months, and President Samuel Stratton, little was accomplished to alleviate the housing problems. However, in 1930, President Karl Taylor Compton guided an expansion program in spite of the Depression.

In the 1930's the East Campus parallels were built, and Student House, MIT's only cooperative living group, was established. During this period of time, the fraternities tended to be very elegant — complete with houseboys and cooks, and living costs to match.

The end of World War II and the resulting influx of veterans spurred the Institute's next housing drive. However, it would be predominantly the dormitory system which would expand. The fraternity system would never again grow in size as it did in its early days.

Westgate, a prefab structure, not the present one, Westgate West, and Building 20 were all used to house the incoming surge of students. Baker House was built in 1948, and the Riverside Apartments which were to become Burton-Conner were acquired at the beginning of the 50's.

Somewhere in this period the concept of the dorm or part of the dorm as a cohesive living unit began to blossom. Little hap-

pened in the dorm system for the next decade except for the deterioration of the older facilities. Baker soon came to be regarded as the "gold coast" of the MIT dorms. By the middle of the 1960's the situation was worse. Such dorms as Burton were almost unliveable by some accounts, although others felt less strongly about the importance of

physical facilities. The fraternities, however, were falling on hard times. The late 1950's and 1960's were a hostile atmosphere for a fraternity system. The fraternities were regarded as elitist and aloof, in short, against what the 1960's presumably stood for. It was a culture in which the Greek system

(Please turn to page 9)



Richard MacLaurin, who died unexpectedly of pneumonia in 1920 was MIT's brilliant architect of the move across the river in the early 1900's. (Photo courtesy MIT Historical Collections)

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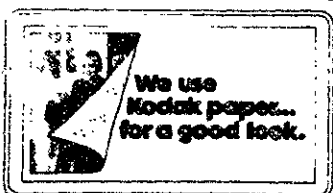
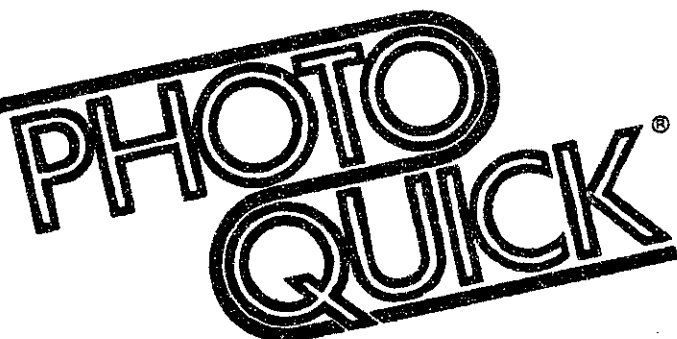
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MIT frats had less trouble than most

(Continued from page 8)

would either die or fall into a level of near extinction at many schools.

At MIT the frats were lucky in that they never had a hostile administration to contend with. However, they did experience many other problems. On of these was hazing which MIT faced earlier than the systems did at most schools. Perhaps this is one reason why the MIT frats were able to survive the 60's when many couldn't — they had faced one crucial problem and dealt with it before the atmosphere became hostile for the system. This is not to say they solved hazing — it is one of those things for which there is not right or wrong answer — but they did rid it of many "bad press" characteristics.

Hazing was an issue on which the Interfraternity Conference (IFC) and the Institute Committee (InsComm) did not see eye-to-eye on for many years. (The Institute Committee was the MIT student governmental body which was dissolved in the late 1960's. Such organizations as the Association of Student Activities and the General Assembly arose from the dismembered body.)

The catalyst for the hazing controversy, which would rage for almost two years before it slipped from the spotlight, occurred in February of 1956. A DKE pledge, Tom Clark, was missed when he failed to return to the house after being dropped off the previous night on lonely Lincoln Road near Cambridge Reservoir with instructions to return by the next morning. He was subsequently found drowned in the reservoir.

This action was part of "Hell Week", an annual week of pledge training activities.

On the tails of an InsComm ExecComm statement and an editorial in *The Tech* demanding investigation, the IFC held a meeting at which the two major schools of thought on Hell Week emerged — the school which wanted a major revamping and the school which wanted minor revision which would shift the emphasis of pledge activities to those which would be character building.

At their next meeting, the IFC effectively eliminated pledge training dangerous to the pledge or harmful to the "good name of the Institute."

InsComm, however, wanted to go one step further. On March 7, 1956, after what *The Tech* termed as "two hours of heated, often unenlightened debate", InsComm banned all pre-Field Day hazing. *The Tech* slashed at InsComm in

an editorial claiming that there are many activities no more dangerous than some of those InsComm would ban.

They concluded with: "The majority placed great stock on the issue of maturity, and they argued that the presence of such immature traditions were detrimental to what Dr. Harris of the Psychology Department, called the primary goal of civilization, the channeling of emotions into actions for the benefit of society.

"We doubt that this is the primary goal of civilization; but even if it is, you cannot legislate maturity, nor consideration, just as you cannot legislate morality.

This decision did not end the debate. The next year, a number of violations were committed under the new rules. The new InsComm vacillated, made decisions and then reversed them. They tried without success to assert their authority, claiming that the decisions of such groups as the Quadrangle Club, which ran Field Day, were without a base of power. Above all, they avoided making a definitive statement.

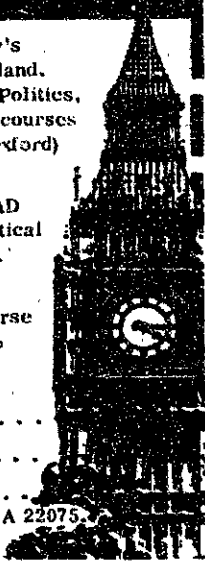
Two fortuitous events saved InsComm from themselves in the end. A freshman orientation program was developed by Harry Flagg '57 and the MIT Athletic

(Continued on page 11)

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 Mezzanine Lounge (3rd floor)

Student Center

WINE, CHEESE, AND MUNCHIES

AWARDS NOMINATIONS

Stewart Awards

The William L. Stewart Awards are given to students in recognition of a single, outstanding contribution to a particular activity or event.

Compton Awards

The Karl Taylor Compton Awards are the highest awards given to students by the Institute community and reflect the belief that real excellence and devotion to the welfare of the MIT community in any area, with emphasis on lasting or sustained contributions to the MIT community as a whole, should be recognized.

Murphy Award

The James N. Murphy Award is given to an Institute employee whose spirit and loyalty exemplify inspired and dedicated service, especially with regard to students.

Send nominations to the Awards Committee, Room W20-345.

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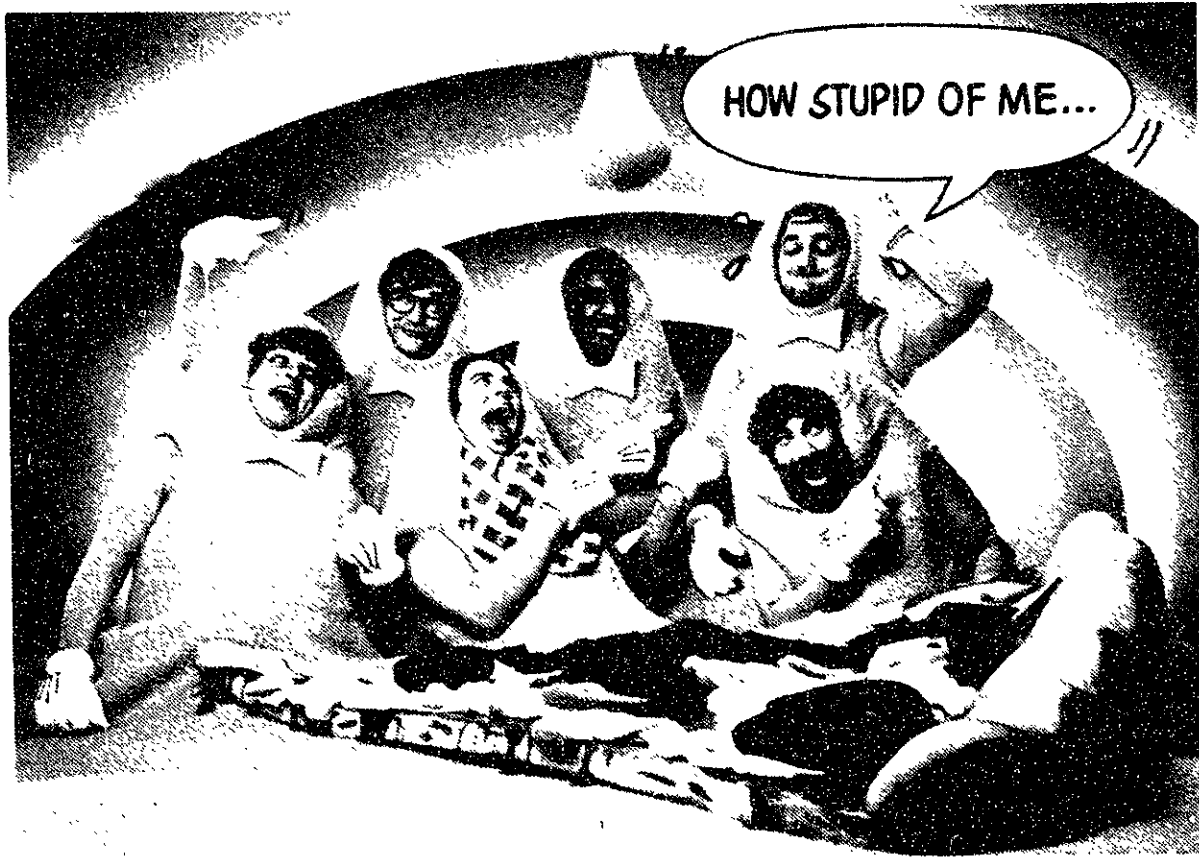
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TASTEBUDS ANYWAY?

Frats faced hazing

(Continued from page 9)

Association banned Field Day in favor of All-Sports Day. Although Beaver Key, an East Campus honorary, would reestablish Field Day the next year, it would never by the Institute-wide event it had once been. Pre-Field Day hazing was on its way out. Not to buck the times, InsComm again voted 14-4 to eliminate hazing on May 3, 1957.

Dean Kenneth Wadleigh '43, Institute Vice President and Dean for Student Affairs from 1961 to 1969 gave a number of other reasons for the MIT fraternity system's survival.

He said that, for one thing, there was never the problem with hard drugs which intensified the fraternity image at other schools. On a related track, he said that "MIT's standards prevented the frats from going down."

Probably the most important factor which Wadleigh emphasized, however, was the aspect of administration, alumni, and students, working together. The living-groups — dorms and frats — learned to tolerate and then get along with each other. Wadleigh said that when he was Dean for Student Affairs, at the time of the first Corporation Visiting Committee on renovating frats, the frats thought the dorms were against them.

Since that time, the relationship between dorms and frats has changed from a true dislike — either real or perceived — to a, for the most part, friendly rivalry. Barbi Hill '80, Chairman of the IFC, attributed this to MIT's fraternity system being the biggest in New England rather than being a number of small elitist clubs as at other schools. Hill sees the sort of attitude perceived by Wadleigh in the early 60's as changing. She said "It used to be when a fraternity lost to a dorm in a sport it was disgraceful. But that is sort of changing."

Wadleigh attributes much of the change in attitude to Dean Frederick Fasset who was Dean of residence from 1956 to 1966. Wadleigh describes him as "beloved of everyone — dorms and frats. He could deal with sticky problems in a way that the silver lining came out."

Finally, Wadleigh placed great weight on the number of discussion groups which were created during the troubled decade of the 60's. OSIRIS was one such private discussion group which held weekly or biweekly off-the-record meetings between undergraduates, alumni, and other interested people.

According to Wadleigh, the students perpetuated these meetings. Students who participated as undergrads also took part as alumni. Wadleigh said: "These were the kinds of exchange which could take place in those days. This place has never really been a stuffy place like Harvard or Williams."

Thus MIT's fraternity system survived the period which killed many systems. Some frats were revamped to be sure, but none had died.

NOMINATIONS SOUGHT

The **Irwin Sizer Award** in honor of Irwin Sizer, former Dean of the Graduate School from 1967 to 1975, presently President of the Health Science Fund and Consultant to the Resource Development Office, and to encourage innovations and improvements in education at MIT. The Graduate Student Council established in 1975 the **Irwin Sizer Award** for "the most significant improvement to MIT education." The recipient of this award which is to be accompanied by a cash award of \$150, will be selected by a committee of the Graduate Student Council in closed session. Any person or group in the Institute community is eligible, and nominations are being publicly solicited, though in any year the Award Committee may decide to give no award.

Nominations may be made by letter and should include references and/or supporting material and submitted to the Graduate Student Council Office, Walker Building, room 50-110, no later than April 20, 1979.

Previous awards have been given to the leaders of the Writing Program (1975), Independent Activities Program (1976), Undergraduate Research Opportunities Program (1977), and the Innovation Center at Sloan (1978).

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SATURDAY
APRIL 7TH, 1979

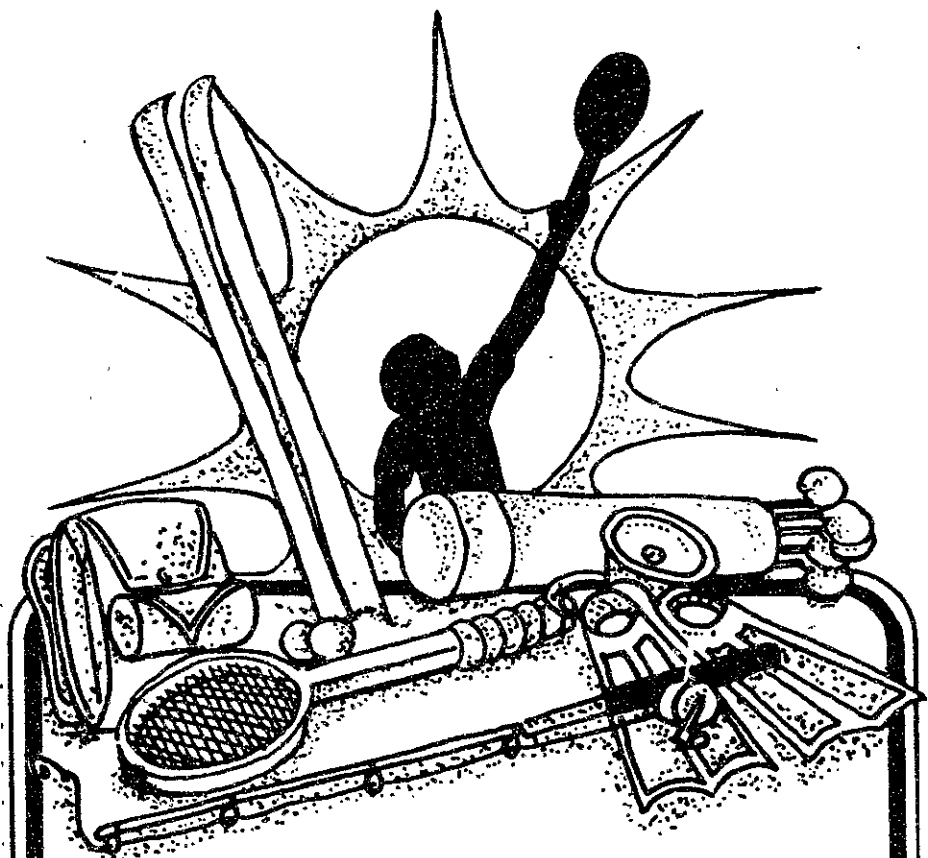
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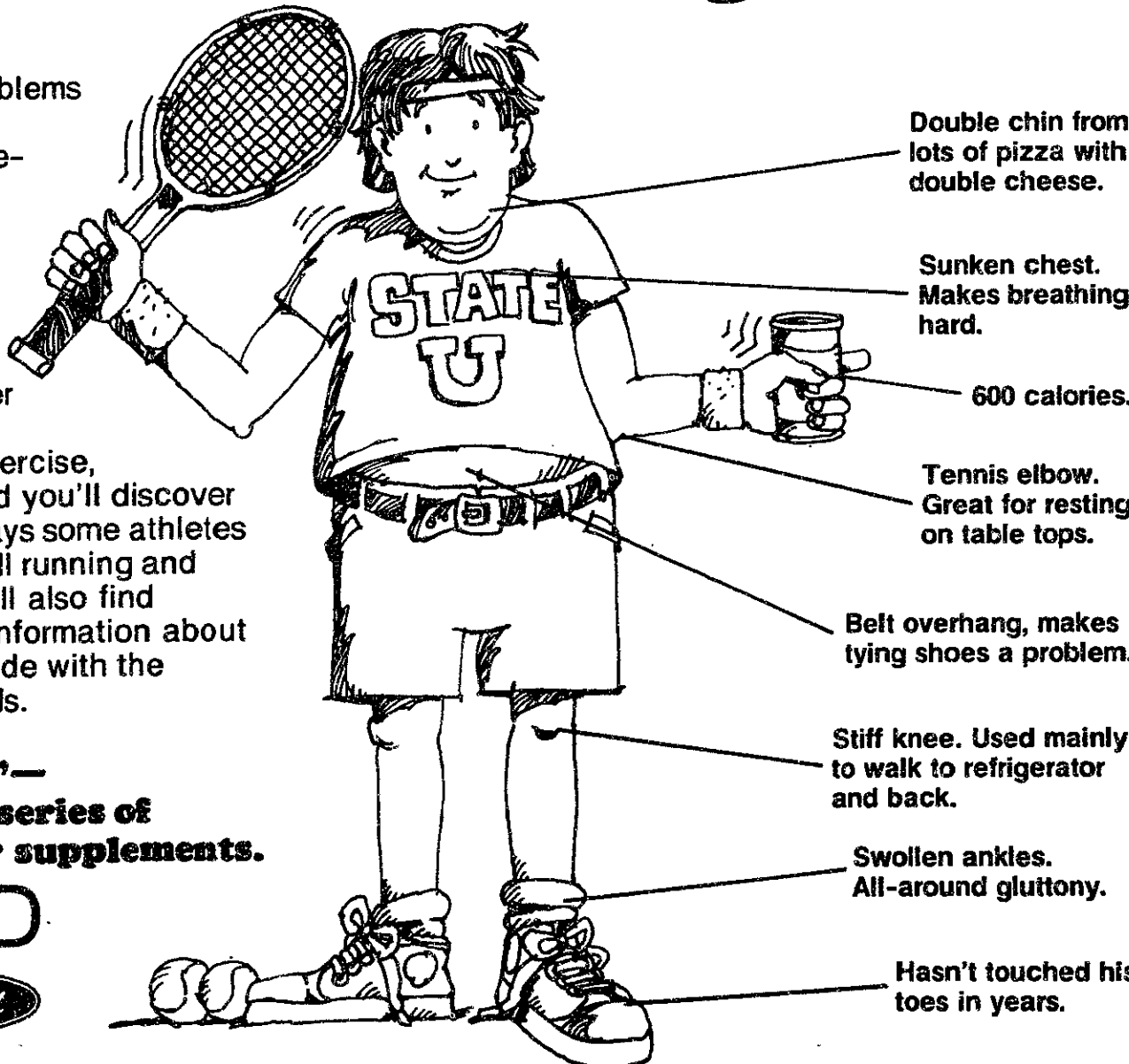
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Two try out for Olympics

By Bob Host

Two people associated with the MIT hockey team tried out with the United States Olympic hockey team last week, and although neither advanced to this summer's tryouts, both received encouraging comments from the Olympic coaches.

Al Strong '80, the captain and leading scorer on this year's team,

and Tom Stagliano '73, former goalie and present assistant coach, joined approximately 300 other players from the Northeast in tryouts at the Danvers Town Line Arena. Both progressed through the Thursday session and preliminary cuts, but were not invited back for the Friday session, when the field was cut to 100. Stagliano believes that about twenty players from the Northeast will be invited to further tryouts at Colorado Springs this summer, including four Division I All-Americans who were exempt from the preliminary tryouts.

Strong showed promise, according to Stagliano, but was hampered by a lack of raw speed, defensive polish, and pre-tryout scouting. Both players were surprised by the similarity between Division I talent and that in Division II and III. Although some Division II players were invited back for the next round and one Division III player was kept for re-evaluation, Stagliano feels that the majority of players from the Northeast going to Colorado Springs tryouts will be from Division I and Junior A hockey which consists mostly of 17- and 18-year olds.

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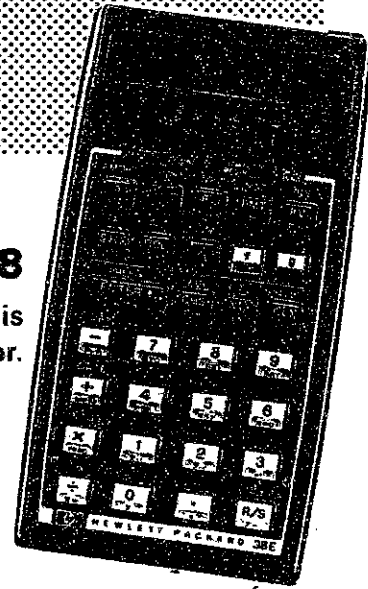
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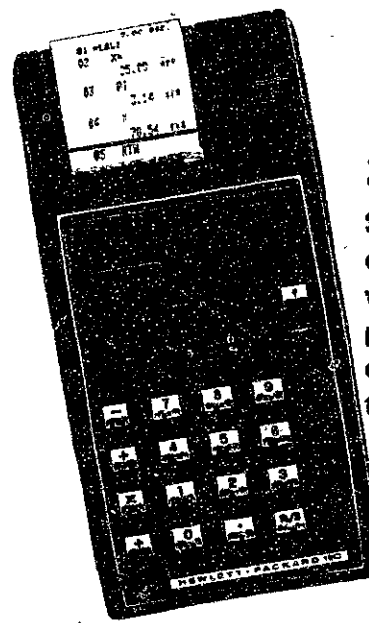
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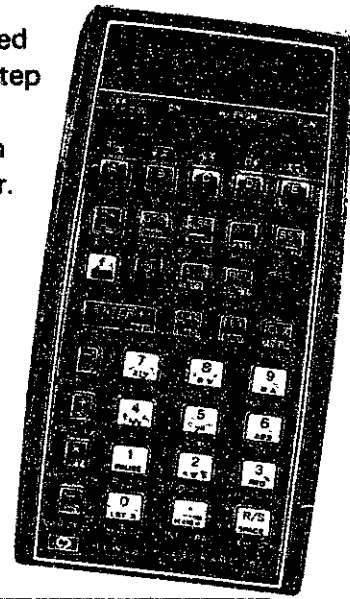
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