



Happy Thanksgiving!



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Day-long symposium examines SDI

Morning session considers past and future of anti-ballistic missile systems and SDI

By Katie Schwarz

No attainable ballistic missile defense can remove the threat of nuclear devastation, but an imperfect shield may reduce that threat, said defense scholar Ashton Carter of Harvard University Saturday at the morning session of a day-long symposium on the Strategic Defense Initiative (SDI).

Carter spoke along with Alexander Flax of the Institute for Defense Analysis, Gerold Yonas of the SDI Office and Richard Garwin of IBM.

The speakers discussed the history and future prospects of anti-ballistic missile (ABM) technology in the morning session of the conference, chaired by Provost John M. Deutch '61.

Approximately 500 faculty, scientists and students filled 10-250 for the symposium, which was sponsored by the Office of the Provost and the MIT Defense and Arms Control Studies Program.

Carter distinguished between two perceptions of SDI. "Star Wars I" was the belief in the possibility of an impenetrable defense which would remove the Soviet capability to do lethal damage to the United States.

"Star Wars II" was the expectation that the system would be imperfect but nevertheless worthwhile.

"Star Wars I" has an "ignominiously remote" chance of success, Carter said. This does not rule outballistic missile defense's role in national security, he said. A "Star Wars II" system may diminish the "menu" of possible Soviet methods of attack by making some of them too expensive or uncertain, he explained.

The ability of SDI to overcome offensive countermeasures must be measured against an "evolving" level of technology, not against the "static standard" of pre-ABM treaty technology, Carter cautioned. A conflict of "Strategic Defense Initiative versus Strategic Offense Initiative" could appear as each side escalated defensive measures and offensive countermeasures.

The "layering principle," which asserts that defense can be made as nearly perfect as desired by adding more and more stages, is incorrect, Carter said. The effectiveness of each layer depends on the effectiveness of previous layers. The probabilities for a missile to pass through the differ-

ent layers are not independent and cannot be compounded, he explained. "If layer one collapses, you're screwed in layer two."

Carter was uncomfortable with the "visibility and religious fervor" accompanying SDI. The emphasis SDI has received is "not the usual way we do business" and "doesn't seem responsible," he added.

Yonas emphasized that current SDI research is "driven" by the need to overcome possible countermeasures.

Sensors, data collection and data processing are the most important research efforts because "you can't intercept them if you can't find them," he said. The "distributed" software system — one with many independent parts — that SDI needs is widely applicable, he said.

Research in this area would take place even without SDI, he added.

Other areas of emphasis include excimer lasers, neutral particle beams and adaptive optics.

SDI's goals as "crisis stability" and "arms race stability" as well as a greater emphasis on defense rather than offense in the arms

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Tech photo by Kyle G. Peltonen

Gerold Yonas of the Strategic Defense Initiative office addresses Saturday's SDI symposium.

Educators and industrialists debate need for SDI system

By Jeffrey C. Gealow

Five speakers from educational institutions and the defense industry debated the effectiveness of the Strategic Defense Initiative (SDI) in the Saturday afternoon session of a symposium sponsored by the Office of the Provost and the MIT Defense and Arms Control Studies Program.

Louis Smullin '39, professor of Electrical Engineering and Computer Science, chaired the session that featured Jerome B. Wiesner, former MIT president and White House Science Advisor; Brent Scowcroft, former National Security Advisor; Fred Hoffman of R&D Associates/Panheuristics; Jack Ruina, head of the MIT Defense and Arms Control Studies Program; and Hans Mark PhD '54 of the University of Texas.

Hoffman argued that "SDI should go ahead," claiming that its goal of "territorial defense" is necessary to maintain the effectiveness of the North Atlantic Treaty Organization (NATO).

The willingness of the alliance to use nuclear weapons to defend western Europe is the basis of NATO's deterrence of Soviet aggression, Hoffman explained. The Soviet Union is now "prepared for conflict at every level of violence and, as a result, the NATO strategy of escalation is threadbare."

A Soviet invasion of western Europe could involve limited use of nuclear forces, Hoffman warned. "We are going to require a ballistic missile defense in Europe to protect critical military targets."

SDI does not have to be effective against an all-out nuclear attack to be useful, he said. The system could be used to stop small-scale Soviet precursor attacks.

Ruina argued that SDI is "technically absurd." Reagan's decision to establish SDI was not based on any consultations with the scientific community, he said.

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Tech photo by Steven Wheatman

Dana Takaki '87 expresses her joy at being declared the winner of her round during the preliminary round of the Introduction to Design (2.70) Competition last night in 26-100. The final round is scheduled for 8 pm tonight.

MIT peace discussion hosts Soviets

By Katie Schwarz

Shouts condemning the Soviet Union were the predominant reaction of over 100 people who crowded the Julius Adams Stratton '23 Student Center West Lounge Tuesday night to hear two representatives of the Moscow Institute for US/Canadian Study call for greater efforts by Americans to understand their Soviet counterparts.

Soviets Sergey Zhuravlyov and Nikita Bantsenkin participated in a panel discussion titled "Obsta-

cles to Peace: The Soviet Viewpoint" along with three MIT students.

The two visited MIT as part of a tour of eight college campuses arranged by United Campuses to Prevent Nuclear War (UCAM), according to Professor Aron Bernstein, chairman of the Faculty Disarmament Study Group, who moderated the discussion.

The event's purpose was "to discuss on as personal a level as possible the obstacles to peace," Bernstein said.

Zhuravlyov, age 31 and married, introduced himself as Executive Secretary of the Student Council of the USSR. The Council represents seven million Soviet students, he said.

Bantsenkin said he was a professor of journalism at the University of Moscow and a part-

time researcher at the Institute for US/Canadian Study.

Undergraduate Association President Bryan R. Moser '87 asked the two Soviets how discussions among individuals could result in progress toward peace.

Informal conversations are "important in terms of human contacts between our two countries," Zhuravlyov replied, because they can "promote a better understanding of what the other side is like."

Americans' lack of knowledge of the Soviet Union and "anti-Soviet literature" disturbed Zhuravlyov. Soviet students know more about the United States than American students do about the Soviet Union, Bantsenkin added.

Alan E. Szarawarski '88, co-

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Gary David Romano

Gary David Romano '86 died Sunday morning at Massachusetts General Hospital of multiple injuries suffered in a car accident. He was 21 years old.

Police saw Romano driving at "about 100 mph" in Everett, according to the *Boston Herald*. Everett police pursued him for "erratic operation," said Everett Police Chief Stewart, but lost sight of his car. Metropolitan Police also spotted Romano and then lost him, the *Herald* said.

Romano's car was found overturned on Malden Street in Malden at 2:47 am, according to Malden police. It had struck several parked cars and uprooted a tree. Romano died at the hospital at 7:15 am.

Police do not know why Romano tried to escape them, Stewart said. The hospital would not release the result of a blood alcohol test.

Romano was a member of the Sigma Alpha Epsilon fraternity. He played on almost all of the fraternity's intramural teams, including football, soccer, softball and octathlon, according to SAE brother Bengé Ambrogi.

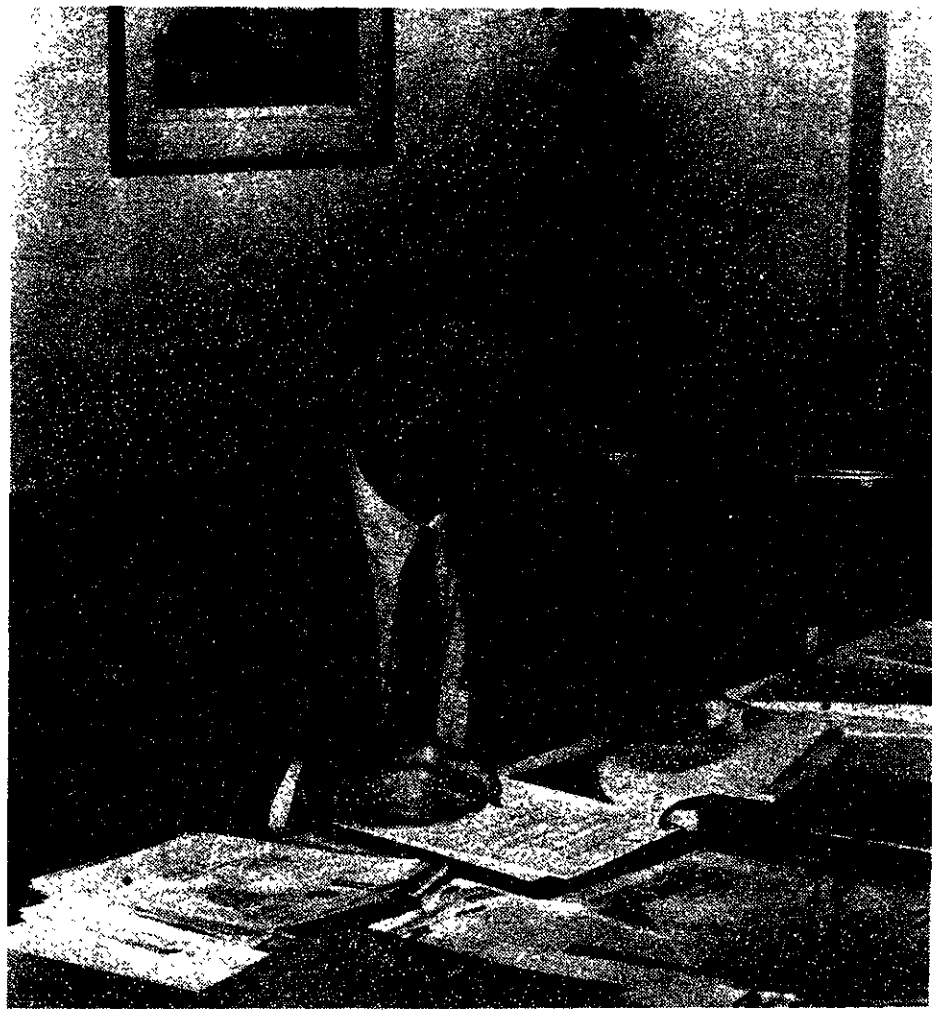
Ambrogi described Romano as an excellent, multitalented athlete as well as a "very friendly, very funny, very happy" person. Romano was also "a leadership figure" who was "a lot looked up to" in the house, Ambrogi said.

Romano, a senior majoring in electrical engineering, was "really interested in all parts of electrical engineering," said his advisor, Jeffrey H. Lang '75. Romano "enjoyed being here at MIT" and was "one of the more friendly and outgoing students I've met as an advisor," Lang added. He had worked for Hughes Aircraft in California last summer.

Romano, the youngest of four children, is survived by his parents, Tony and Rose Romano-of Warren, Ohio, and by his brother Tony and sisters Eileen and Mary. A memorial service was held yesterday in the MIT Chapel, and the funeral will take place tomorrow in his hometown.

inside

Anti-apartheid protests at other colleges: first in a series. Page 11.



Tech photo by Kyle G. Peltonen

Newly-elected Secretary of the Corporation Constantine B. Simonides.

Students to study Coop's relocation

By Edward E. Whang

MIT's undergraduate and graduate student governments have jointly organized an 11-member Coop Committee. The committee will advise the MIT administration on possible uses for the space that will become available in the Julius Adams Stratton '23 Student Center should the tentative relocation of the Tech branch of the Harvard Cooperative Society to Kendall Square become a reality.

Barbara M. Fienman, campus activities advisor, will aid the committee in evaluating proposals for the space.

The formation of the committee precedes any final announcement by the Coop Board of Directors that the Coop will definitely leave the MIT campus. "That the Coop will move out of the Student Center is certain, but not official," said Bryan R. Moser '87, UA president. "I have not heard that any contracts have been signed, but every indication says that the Coop will move."

Sarah R. Thomas '87, UA secretary, speculated on possible plans for the reallocation of vacated space in the event of the move. The second floor of the Student Center could be converted to office space for student activities. But it is more likely that stores will occupy the space because it is zoned for commercial use, she said.

Moser agreed, stating that the space will most probably be filled with student activities offices, small retail shops or food establishments.

The Coop Committee will report to the UA Council after it completes its study. All recommendations will be subject to the Council's approval, Moser said.

The committee will meet once this term for organizational purposes, Fienman said. Time constraints imposed by Fienman's PhD thesis work have prevented the committee from meeting this term. Meetings will be held on a regular basis beginning next term.

The UA originally intended the committee to include three members from the Graduate Student Council (GSC); the GSC instead selected four students in order to increase graduate student representation, according to GSC

President Janine M. Nell G.

The four GSC members on the Coop Committee are: Ariel G. Ferdman G, James J. Hickman G, Jing-Song Huang G and John M. Lucassen G.

Seven participants on the committee are members of undergraduate student government: Stephanie R. Levin '87 and Walter A. Rho '87 are members of the UA Council and Gregory L. Greeley '86 and Robin L. Hunter '89 are UA members-at-large. James S. Gotshalk '87 and Robin L. Hunter '89 represent the Student Center Committee (SCC) on the Coop relocation board. The Association of Student Activities will name one Coop committee member, to be selected at a later date.

Speakers blame government policies for hunger problem

By Mary Condello

Poverty in the United States has reached epidemic proportions, according to panelists at a discussion of hunger and homelessness in the United States entitled "Poverty at Home" held last Tuesday.

The MIT Hunger Action Group sponsored the talk, featuring panelists Melvin H. King, adjunct professor of urban studies; Judy dePombriant of the Harvard School of Public Health; Nan Johnson of the Boston Food Bank; and Susan Marsh of the Coalition for the Homeless.

The federal government's priorities are a major cause of the currently large hunger problem in this country, according to dePombriant, a member of the Physicians' Task Force on Hunger. "There is a priority problem, not a resource problem."

The United States ranks first in the world in military expenditures and 17th in "keeping infants alive," dePombriant said. The Reagan Administration has cut close to \$10 billion from child aid programs since 1980, while the military budget has increased by \$32 billion, she added.

dePombriant described the universality of the problem, saying "Hunger touches the newly poor, the old, the young, immigrants, urban residents, [and] suburban residents. . . ." The present gap between the rich and the poor is the largest in US history, dePombriant said.

Simonides named Secretary of Institute Corporation

By Irene Skricki

The MIT Corporation elected MIT Vice-President Constantine B. Simonides secretary of the Corporation at its annual meeting Oct. 4. He will take up the position of secretary while remaining vice president of the Institute.

Simonides replaces Vincent A. Fulmer '53, who retired June 30. Fulmer has been at MIT for 34 years and has "done excellent work in a lot of capacities," Simonides said.

Four officers — the president, chairman, secretary and treasurer — head 73 active and 25 emeritus trustees of the Corporation, who comprise MIT's board of trustees. Many Corporation members are MIT alumni.

The Corporation meets quarterly to approve appointments, determine a budget and seek new sources of capital for the Institute, according to Simonides. The group also handles all legal issues of MIT and reviews and approves "all significant policy changes at MIT," he added.

The executive committee of the Corporation recommended the appointment of Simonides to the full governing body of the Corporation, which then approved the appointment. Chairman of the Corporation Dr. David S. Saxon '41 said that "in the judgment of the President and me and our principal advisors, he was the best man for the job."

Simonides has been secretary

of the executive committee of the Corporation for the past ten years. The two positions — secretary of the Corporation and secretary of the executive committee — will now be consolidated into one position. "MIT does this consolidation . . . so that in some ways it makes the top administration a little thinner and in some ways it facilitates the work," Simonides said. "And it also gives the opportunity for some younger people here to grow in responsibility in their areas."

Signing of undergraduate diplomas is one of the certifications Simonides will execute as secretary of the Corporation. He will also be responsible for the formal records of the Institute. The secretary also sets the Corporation agenda and provides a liaison between the Corporation and the executive committee.

The secretary arranges relations with the trustees. "The trustees are volunteers," explained Saxon, "so it's necessary that we provide them with the kind of assistance required to make their voluntary activities on behalf of the Institute efficient."

"I want to make sure that we provide services for the trustees and that we maximize their involvement in MIT," Simonides said.

The secretary is additionally responsible for the visiting committees. There are 27 visiting committees at MIT, one for each

of the 23 academic departments and one each for student affairs, athletics, the medical department and sponsored research.

"Each [visiting committee] is constituted of a few members of the Corporation . . . [as well as] six persons nominated by the Alumni Association and six persons nominated by the President," for a total of fifteen people per committee, Simonides said. Each committee visits the Institute biannually to examine its particular department and report its findings to the Corporation.

The visiting committees give the trustees "a sense of the quality and the problems and the needs" of each department, Saxon said. Simonides will be responsible for scheduling meetings and handling the logistics of the visiting committees as secretary.

As vice president, Simonides is a member of President Paul E. Gray's '54 staff. The directors of admissions, career services, the medical department, personnel, the MIT Press and information services report directly to him.

In the capacity of vice president, Simonides would like to recruit "a more diverse group of people at MIT, particularly minorities, particularly blacks." He also wants the "performance evaluation and supervision of people" improved to increase productivity.

Minorities convene for lunch

By Alison C. Morgan

The third annual Unite and Support Luncheon, held Saturday in the Burton House Dining Hall, brought diverse minority groups together to discuss common concerns with each other and the MIT administration.

Members of several minority organizations on campus attended the meeting, including the Black Students Union (BSU), La

Unión Chicana por Aztlán and the Association of Puerto Rican Students (APR).

Joyce Gibson, director of the Office of Minority Education (OME), represented the administration, along with Dean for Student Affairs Shirley M. McBay and Assistant Dean for Student Affairs Janice Cooper.

Gibson, the keynote speaker, emphasized that minorities' "re-

lationship to the Institute as a whole is primary . . . because you are here to get an education." She asked members of the audience what extracurricular activities they were involved in that were not minority-oriented, reiterating that they are "students" before they are "minorities."

Progress has been made with admissions policies since the late 1960s, when "three or four minorities existed per class," she said. She added, however, that "Native Americans, Mexican-Americans, black Americans and Puerto Ricans are still substantially underrepresented at MIT in comparison to national population percentages."

The significant drop in black freshman enrollment this year can be attributed to several outside factors, Gibson explained, including the fact that "only two to three thousand black high school students nationwide take the PSAT [Preliminary Scholastic Aptitude Test] each year." Admissions Office recruitment relies in part on a list of high school seniors and their performance on the PSAT, purchased from the Educational Testing Service.

Black freshman enrollment at MIT declined from 65 students in the Class of 1989 to 40 in this year's entering class [*The Tech*, Oct. 29, 1985].

An open group discussion followed Gibson's speech. During this time, members of various groups voiced their mutual concerns, including recruitment, a general lack of role models, scholarships and financial aid. It was also decided that similar meetings be planned for IAP and the spring term.

Afterwards, officers from different organizations expressed pleasure at the outcome of the luncheon. APR President Marcos Esterman '88 remarked that it was good to see the OME director taking initiative. Norman L. Fortenberry G of the Robert R. Taylor Network said it was a "good start" and that "minority groups showed a readiness to express their views to the MIT administration."

hungry in the Boston area. Over 35 percent of the residents in Boston are near or below the poverty level, she said.

She showed a brief slide presentation that depicted a sample of the hungry and homeless in the city. The slides also highlighted some of the food pantries and shelters in the city.

The problem is more serious than it appears, Johnson said. "Statistics don't count those too afraid, too depressed or too discouraged to get help," Johnson said. Supermarkets and companies waste close to 137 million tons of food each year. That has only compounded the problem, she added.

Marsh discussed causes of homelessness in the area. "The statewide housing market is reaching new highs in price and new lows in supply," she explained. Record numbers of condominium conversions, an especially low vacancy rate and lead paint contamination in many houses have tightened the market, Marsh added.

Homelessness is now an "economic issue, not a personal one," she said. The stereotypical "single man with a substance abuse problem" is not representative of today's homeless, Marsh said.

Most of those who are homeless are families, often headed by a female, she explained. These families often are forced to live in hotels or motels in single rooms for long periods of time.

Needy families often encounter difficulties meeting eligibility requirements for government aid, she said. In more than half of the states, families with both parents at home are not eligible for financial aid. This restriction has caused fathers to leave their homes so their children can eat, dePombriant said.

Those households that qualify for aid receive little help from such programs, she added. Food stamps provide an average of only 50 cents per meal.

Proponents of current cuts in social programs claim that economic growth will benefit the poor and hungry, she said. "Malnourished children can't wait for economic growth," dePombriant countered.

The efforts of private individuals and religious organizations in the fight against hunger will not improve the situation, dePombriant said. "Charity won't solve the problems that reduced government spending has created."

King also blamed the government for the hunger problem. "The advocates for the working class and poor have suffered a setback in the reelection of Ronald Reagan," he said. "The militarism of the country must be turned around."

"We're mistaken if we think the programs we have are doing the job. The solution has to come from the people who are most affected by it," King concluded.

Johnson spoke about the

news roundup

World

Fifty passengers killed in rescue of hijacked airliner — Ten minutes after Egyptair Flight 648 took off for Cairo from Athens Saturday afternoon, hijackers gained control of the plane and forced the pilot to fly to Malta. Egyptian special forces assaulted the plane, and the hijackers retaliated by throwing hand grenades at the passengers. When the dust cleared, all of the four or five hijackers were "most probably" killed, along with 50 passengers, according to a spokesman for the Maltese government.

Reagan Administration supports Egyptian action — The United States yesterday announced its support for the "difficult decision of the governments of Malta and Egypt to end the brutal terrorist hijacking," in a State Department release. The Administration also regretted the heavy casualties resulting from the Egyptian troops' assault. "We are saddened by the tragic loss of innocent life resulting from this act of terrorism," the statement read. The State Department was unable to confirm reports that one of the three Americans on board died in the shooting.

United States accuses the Israeli government of espionage — Israeli government officials denied any knowledge of covert operations against the United States and is investigating whether any such actions occurred. The Foreign Ministry did not rule out the possibility that an Israeli intelligence agent, acting on his own initiative, might have undertaken a spying mission against the United States without informing his superiors. Such missions against the United States violate Israeli government policy. The accusations arose after the conviction of a Maryland resident employed with the Naval Intelligence Service on charges of selling classified code information to Israel.

Tenth anniversary of Franco's death marked — Francisco Franco's daughter led tens of thousands of Spaniards, singing fascist songs in commemoration of the leader's death, on a march through Madrid yesterday. The celebration was a mix of the old and the new, as old Spaniards and working-class teenagers dominated the crowd, estimated at 50,000.

Nation

Majority of American Catholics disagree with the Vatican — A *New York Times*/CBS News poll indicates that the opinions of Catholics are more in line with those of American non-Catholics than with Church leaders. The poll, taken to test attitudes in the United States as the Vatican is holding an extraordinary synod of the world's bishops, indicates that 68 percent of those surveyed favor artificial means of birth control, 55 percent approve of abortion in the event of rape, incest or a threat to the life of the mother, 52 percent favor the ordination of women as priests and 73 percent favor remarriage for divorcees.

Regan apologizes for sexist remark — White House Chief of Staff Donald T. Regan apologized for his comment that most women don't understand arms control or other summit issues. He repeated, however, that women are more interested in "peace and things of nature" than the "nitty-gritty" issues of arms control.

Local

Middle East Studies Association condemns Harvard — The Middle East Studies Association of North America has condemned Harvard University for allowing the Central Intelligence Agency to fund a professor's research. By accepting CIA money, Harvard has violated the Association's resolution that requires the disclosure of funding sources.

Sports

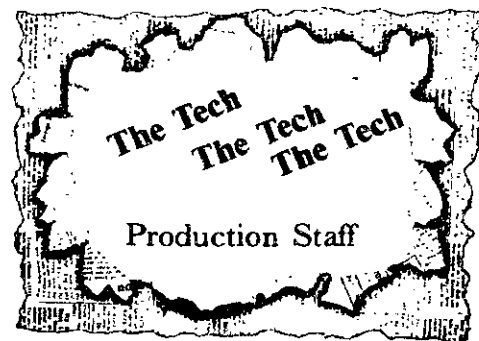
Jets avenge early-season loss to Patriots — The New York Jets, playing without the injured Freeman McNeil, took sole possession of first place in the AFC East division after beating the New England Patriots 16-13 in overtime Sunday at the Meadowlands. A Tony Franklin field goal with 16 seconds left to play in regulation tied the game for the Patriots, but Kurt Sohn's 46-yard punt return set up Pat Leahy's game-winning field goal in overtime. The Jets have the best record in the AFC, at 9-3. The Los Angeles Raiders defeated the Denver Broncos 31-28 in overtime, tying them at 8-4 for first place in the NFC Central division.

Giants and Cowboys share division lead — The New York Giants (8-4) overwhelmed the St. Louis Cardinals (4-8) 34-3, but the Dallas Cowboys (8-4) defeated the Philadelphia Eagles (6-6) 34-17, to keep teams even atop the NFC East. The Chicago Bears (12-0) rolled over the Atlanta Falcons (2-10), 36-0 — the Bears have won their past three games by a total of 104-3, and their defense has not given up a touchdown in the last 13 quarters. The Miami Dolphins (8-4) and the Jets, the Bears' opponents in their next two games, should provide stiffer opposition.

Weather

Stay indoors for Thanksgiving — if you're stuck in New England — Wednesday will be cold and cloudy, but the rains will return just in time for Thanksgiving. Friday might be slightly better.

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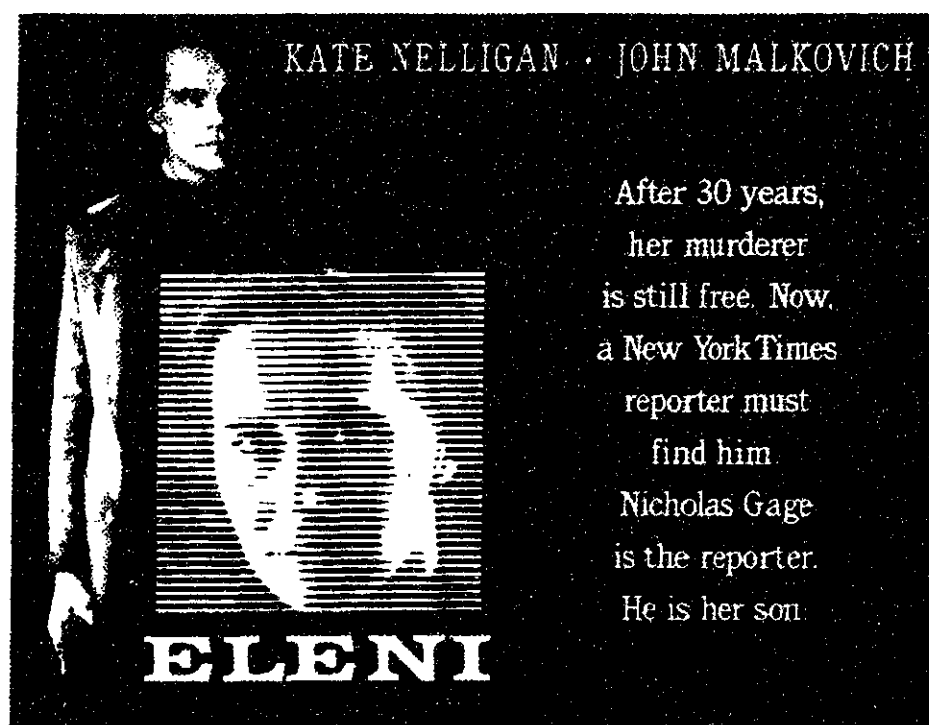
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opinion

Column/Mathews M. Cherian

Ocean provides a new perspective

A few weekends ago, I decided to try treading the white sands of a Maine beach instead of the concrete of Boston. I've spent most of my life in cities and the Midwest. I wasn't prepared for the ocean.

The beach was empty, a short expanse of gritty, white sand ending in jagged rock on both sides. It was like a scene E. B. White might have described. There were no footprints on the beach, except mine. Broken shells and dead seaweed lay strewn across the sand. Occasional red sea urchins, spines still intact, colored the sand.

I walked with ease along the edge of the ocean as the water approached my feet. The waves were tame, imposing a blanket of silence on the beach. The screeching of the seagulls broke the monotony of the gentle lapping of the waves.

I scrambled up the small uprising of rock at the end of the beach. My hands shied away from the cold rock. The cracks and crevices spread everywhere, like the gnarled roots of an old tree. Little lines as fine as those on my palm coursed the rock in an aimless maze.

The rock offered me no comfort as I sat down, but I didn't notice. The soft beating of the waves on the rocks continued to forbid me from breaking its silence. The gentleness of the waves seemed deceiving. Their constant repetition, worse than the ticking of a metronome, held me in a trance.

The rocks stood at the mercy of the water. The softer the waves lapped against the rugged surfaces of the rock, the more de-

ceiving they were. The waves concealed their secret well.

Only the rocks gave away the ocean's secret. The jagged scars biting deep into the rocks laid bare their testimony. The deep gouges, reaching farther into the heart of the rocks than a dagger could, groaned in submission to the ocean.

Nature was a force beyond control.

A sudden gust of the brisk fall wind brushed me. I shivered.

Often man thinks he is in control. He believes he has power over his own destiny: There are no forces he cannot overcome.

I had always had a sense of security in the city, where nature had little play, where all the forces, no matter how big, were controlled. Or so it seemed. Now the city seemed insignificant, powerless.

The wind died down. I squinted at the line of reflected sunlight on the ocean. I looked down into the war-scarred faces of the rock below me.

The rocks were carved. They were shaped, not by man, but by nature. Each thin crack crept through the rocks following its own path. Nature had formed each path.

History, art and music: man's markings. Just as the fine lines on the rocks, these markings can be erased, shifted, changed. Outside forces will change these markings, change their direction, wipe them away.

Often in the city, it is very hard to see past the office-buildings and the skyscrapers. Sitting on the rocks, looking out at the ocean, I could see a long way.



Column/Simson L. Garfinkel

Student Center lacks first aid

Last Saturday, I stabbed myself in the 24-hour coffeehouse while splitting a bagel.

I've probably split hundreds of bagels in my life without incident. Normally, splitting a bagel is a fairly mundane event. Which made Saturday's stabbing even more humiliating.

I pulled the knife out of my left hand. "Why should there be a sharp point on a knife used exclusively to split bagels?" I thought as I began to bleed. And then, "Oh God, I'm so embarrassed."

I had good reason to be embarrassed, standing there in the coffeehouse with a bloody knife in one hand and a bloody bagel in the other. I was meeting a friend in Harvard Square in thirty minutes. What was I going to say to him when he asked about my hand?

"I stabbed myself while slicing a bagel."

"You did what? I haven't done that since I was twelve," I imagined him responding.

So I asked the counterperson at the coffeehouse if he had a

Band-Aid.

"Nope, no Band-Aids here. They probably have something over in Lobdell. Want to wash your hand in the sink?"

The coffeehouse really should have a first-aid kit behind the counter; I couldn't have been the first person to have injured himself with a wayward bagel knife.

Failing the coffeehouse, surely there would be a first-aid kit in Lobdell. I trotted over with my hand wrapped in a paper towel and asked the cook for their kit.

"Sorry, we don't have one here. There's one up in the manager's office, but the office is locked on the weekend."

I couldn't believe it. People could get hurt eating in Lobdell. The very least that food service could do is provide a proper first-aid kit. But no, an injured customer in Lobdell has to climb the stairs to the manager's office to get the first-aid kit, and then only on weekdays.

As a last attempt, I decided to walk over to Campus Police and see if they had a Band-Aid that they could spare.

The officer in the station was very kind. After asking me if I was a MIT student, he replied, "Sorry, kid, I can't give you a Band-Aid. But the ambulance is downstairs. If you want, we'll give you a ride over to the Medical Center."

I stared back at the officer. "All I want is a lousy Band-Aid. I don't need an ambulance, and I don't need to go over to the Medical Center. Look, do you have a piece of masking tape instead? If you can't spare a Band-Aid, I'll make my own."

"Sorry, all I can do is take you over to the Medical Center."

"Why?" I asked.

"Look, I'm trying to help you."

"You're not," I said as I left. Once I got to Harvard Square, I went to the Store 24 and bought a box of Band-Aids. It cost me \$1.98. As I paid the clerk, she noticed my left hand clutching a bloody paper towel and said, "That looks really nasty. How did you cut yourself?"

I didn't have the courage to tell her.

The Tech

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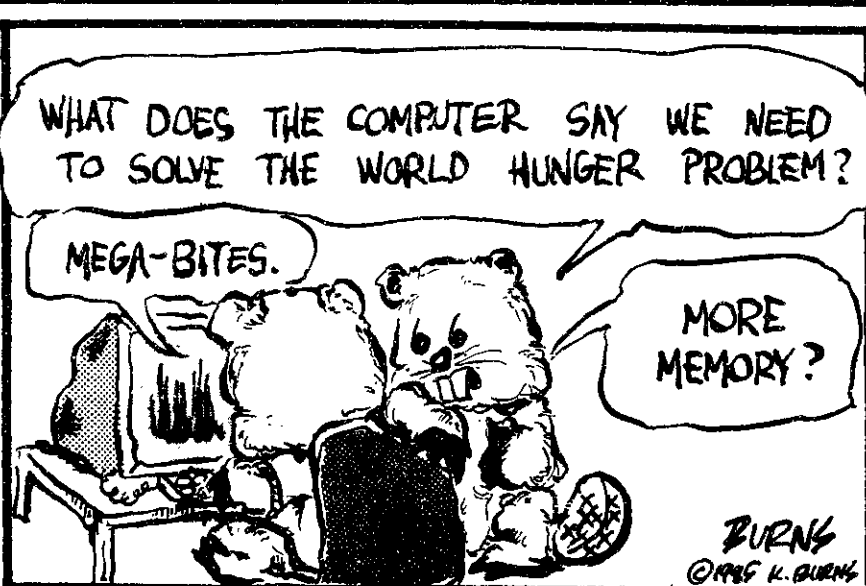
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opinion



PROJECT ANATHEMA MINICOURSES

THIS WEEK:

NOV. 28TH, 9:00 PM - "HOW TO DEAL WITH INCREDIBLY HIGH LOADS."

NOV. 29TH, 4:00 AM - "TERMINAL SNATCHING TECHNIQUES."

DEC. 2ND, 4:00 PM - "HOW TO IMPROVE YOUR 'ROGUE' AND 'HACK' SCORES."

feedback

Graduate students: lobby for housing

To the Editor:

We are writing, on behalf of the residents of Ashdown House, to alert the MIT community to our concerns about the current state of on-campus housing for graduate students.

This year alone, 1450 graduate students were admitted to MIT. Only 18 percent (260) students were lucky enough to be assigned rooms in one of the five graduate residences. Of the remaining 1190, 928 placed their names on waiting lists for on-campus housing. This phenomenal demand is clearly an indication of the need for more graduate housing.

The issue of housing extends beyond just having a roof over one's head. It greatly influences the life of a graduate student which in turn affects his or her performance as a researcher.

Unlike first-year undergraduates who are guaranteed housing however crowded, first-year graduate students are left out in the cold. This is particularly disturbing in light of the number of students who come from far removed corners of the United States and the world; and who arrive in Boston in September, suitcases in hand, and nowhere to live. The situation has always been one of waiting lists and only enough room to house about 50 percent of those students who wish to live on-campus. The problem has been particularly acute this year due to sudden growth of the size of the graduate school, and the drastic rent increases for off-campus housing. This brutal introduction of a graduate student into MIT leaves a long lasting bitter impression. The student feels unwelcome and uncared for. He or she cannot comprehend how an institution such as MIT with its large proportion of graduate students and whose excellence as a research institute is so vitally dependent on its graduate students could be so insensitive to the students' needs.

The quality of life and quality of performance of a graduate student, like any human being, are undoubtedly related. To quote from the report of the Student Affairs Visiting Committee Meeting, Feb. 10-12, 1985:

"Some simple facts seem to be recognized by both the Office of the Dean for Student Affairs (ODSA) and faculty contacted on this matter. These include:

1) The quality of the graduate student body is of the first order of importance with respect to the quality of research performance at MIT and, thus, to the Institute's continued reputation as a premier research center.

2) The quality of life is important to graduate students and the availability of decent, safe, convenient and affordable housing is probably the major single factor in determining that quality.

3) The Institute already loses some top graduate student prospects because it cannot guarantee incoming graduate students Institute housing and this loss factor may grow as the pool of top-flight technically-oriented students seeking advanced degrees declines (At least one member of the Visiting Committee used the quality of graduate student housing for his family and himself as the final determinant among offers from competitive graduate programs).

4) Graduate students with safe and convenient on-campus housing are able to work longer hours and return safely and efficiently for late night research activities (This is of particular concern to students with families and to female students).

5) Graduate students housed on-campus are more likely to develop a sense of camaraderie with their fellow students and a heightened sense of belonging to the Institute community — attitudes which are woefully lacking among many current graduate students.

6) Housing problems are often multiplied for graduate students with families and foreign students who may be poorly equipped to deal with vagaries of the Boston area housing market.

7) The competition between MIT graduate students and the poorer members of Boston area communities for affordable housing hurts both groups and creates community resentment against MIT and the rest of the academic community."

In light of the above, we, the "lucky ones," feel that the opportunity to live on-campus should be available to all members of the graduate school.

Short of controlling the number of students admitted, this is only possible by building more residences. A major fraction of the present rent increase of on-

campus housing is being used to raise funds for construction of future graduate housing. In view of this, President Gray's statement that graduate housing will not be a priority in the upcoming capital campaign is contradictory and simply unacceptable. The graduate student body should not be swept under the carpet and left to its own devices for survival. Much more attention and care must be directed towards this vital segment of the MIT community.

Living in a graduate house contributes enormously towards the elevation of the quality of life of its inhabitants. Its importance cannot be overemphasized, nor should it be underestimated. Living in Ashdown, for example, is not merely having a place to sleep in between visits to the lab. It is much more than that. It is a place to learn about, and to be educated in areas where working in a lab can in no way be a substitute. Living in Ashdown is living in an international community of American and foreign students, it is learning about diverse cultures, social habits, politics and views of the world. It is about being part of a community, learning how it operates and in turn influencing its operation. No amount of working on one's research topic can teach one about life as will active participation in a dynamic and multifaceted society such as Ashdown.

Now and absolutely now is the time for graduate students to make their voices heard. While it is important that we, the graduate students, speak up in unison about the deplorable lack of housing, it is also worth recognizing that our voices alone are not enough to convince President Gray, the administration, and the MIT Corporation, that *more housing* must be built. We also call on department heads, faculty members and other members of the staff who care about graduate students to lobby for new graduate housing. It will only be through this large scale corporation that the graduate student body will benefit.

The Ashdown House Executive Committee:

Kathy Barnak G
Alison Burgess G
Jan Campbell G
Dan Heinzen G
Atul Salhotra G

Guest Column/Mark McDowell

Do not lose sleep over Course XIX

Ogden Nash once wrote "Some women talk too much and some women pray too much, but all women think that they weigh too much." This observation on human nature has a perfect analog at MIT: "Some people study too much and some people goof off too much, but all people think that they sleep too much."

While this may not be the poetic gem that Mr. Nash had in mind, I think these words ring true for any self-respecting MIT student. There seems to be a prevailing attitude (especially at this late date in the term) that sleep is a non-essential element of life.

It is not uncommon to be walking down the infinite corridor and overhear a conversation that goes something like this:

Jim: I stayed up until 4 am working on a problem set, and I didn't even finish it.

Julie: You call that late? I was up until 6 am writing a paper and studying for three exams.

Bill: Yeah, but I pulled eight all-nighters this week, and...

Jim: That's nothing. I woke up three hours before I went to bed and worked on my problem set for five man-years.

And so the conversations go on, in a manner that any Monty Python fan would shudder at. What does it all mean? Is the lack of sleep (or the claim of it) a status symbol that we should flaunt? Have you ever stayed up all night and then not told anyone about it?

The immediate response is that we have huge work-loads to tend to, and 24 hours is just barely enough time to finish everything. Or maybe we think that we should have a huge work load (after all, this is MIT and everyone else seems to be studying), so we just stay up all night, working and taking lengthy study breaks. Maybe I'm just totally wrong. But consider the following option:

Course 19: Rest Engineering.

19.01 — *Microrest*: Students will study resting techniques on a small scale. Emphasis will be placed on naps and day-dreaming. Introductory topics include the Dirac Doze function and tail recursive cat naps.

19.02 — *Macrorest*: Here students explore more detailed sleeping techniques, including entire nights of sleep, dream theory and sleeping through more than one lecture in a row.

19.06 — *Linear Sleep*: Advanced class in mattress manipulation. Topics include unconsciousness and hibernation.

One final word about Course 19. Problem sets will be due regularly and will include extended hours of sleeping. Lab courses are particularly demanding and will require up to 12 hours of non-stop sleep on the weekends. And, yes, there is a UROP available. Course 19 professors need an undergrad to help redefine the word "restroom."

feedback

Unruly audience was true obstacle to peace

To the Editor:

On midsummit eve, a respectable crowd gathered in the Student Center were treated to "the Soviet viewpoint" of obstacles to peace. But the display was not provided by the visiting Soviet delegation, which had come to discuss, however dogmatically, understanding and "bridges to peace."

The show was stolen by a vocal minority of audience members who saw no opportunity for dialogue, but simply a chance to do some red-bashing. It displayed contempt for authority in the highest US tradition by speaking (and often shouting) out of turn, straying from the topic, and ignoring the pleas of the far-from-toothless moderator, Dr. Aron

Bernstein of the Disarmament Study Group (DSG).

Perhaps these loud-mouths actually supposed that they were sending a message to the Soviet government. Perhaps they wished to convert the rest of the audience. All they succeeded in was creating a hostile mood and so destroying an opportunity for discussion.

Americans visiting the Soviet Union, while restricted by the government, are at least made to feel welcome by the vast majority of her people. The intolerant US citizens who came to Tuesday's meeting appeared as obstacles to peace from anyone's point of view.

Julian West G

Editorials, marked as such and printed in a distinctive format, are 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, news editors, and opinion editors.

Columns and editorial cartoons are written by individuals and represent the opinion of the author, not necessarily that of the newspaper.

Letters to the Editor are welcome. They should be addressed to **The Tech**, PO Box 29, MIT Branch, Cambridge MA 02139, or by interdepartmental mail to Room W20-483. Letters should be typed and bear the authors' signatures, addresses, and phone numbers. Unsigned letters will not be accepted. **The Tech** reserves the right to edit or condense letters. We regret we cannot publish all of the letters we receive.

Mary lacks grace

Hail Mary, directed by Jean-Luc Godard, starring Myriem Roussel and Thierry Lascoste, shown with The Book of Mary, directed by Anne-Marie Mieville, at Orson Welles.

Jean-Luc Godard's *Hail Mary* opened last Friday at Orson Welles amid demonstrations pro and con. A film of that normally draws only minor crowds now here a fresh example of a principle well-established for centuries: that a chorus of critics singing in unison could not produce the promotional impact of the Vaican's wrath benefited as a work of art *Hail Mary* is downright disappointing.

The story of *Hail Mary* is quickly told: it re-enacts the first chapters of the Gospel in a suburb of Geneva. Mary is the daughter of a gasoline station owner, and plays basketball in a local team. The nun Gabriel, who does not waste words in getting his messages across. Then there is Joseph, a taxi driver, who obviously has hard time understanding his girlfriend, especially since it involves her recognition of her gradual acceptance of the birth of Jesus and his

ing to see the very fact that even saints have genitals as something of a revelation. Rather than too much, Godard bestows too little flesh and blood on his Mary. He fails to impart more than an abstract sense to her initial bewilderment and ultimate compliance. He strives to represent her with so much reverence that he almost ends up not representing her at all. Sometimes, the device of transposition becomes a bit too pedantic. For example, when little Jesus joins some friends for soccer, he asks their names, then tells them he will call them Peter and James. If you may be partially consoled by the circumstance that instances like this are much more rare than they could have been. Yet it is hard to escape the feeling that they are somehow intrinsic to Godard's approach.

Stylistically, *Hail Mary* fits into the pattern that in recent years has become Godard's trademark. He employs a fragmented and associative narrative with drastic cuts and a plethora of side-references. As in *Passion* or *First Name: Carmen*, *Mary* this style looks mannered and soon becomes tiresome to watch. In particular, Godard fails to convince that his multitude of images adds up to a clear and consistent vocabulary. Planes taking off or waves on the beach have so many symbolic connotations that their mere inclusion looks gratuitous, or cosmetic at best.

Not all is bad, fortunately. Whatever the general conception of his film, Godard remains a director who knows his camera, and *Hail Mary* contains many an enthralling shot, inspired scene, or interesting composition. But this cannot make up for the general impression of the film: that it is essentially flawed, and undeserving the attention it has received.

The showing of *Hail Mary* is preceded by *The Book of Mary*, a half-hour long reflection on the reaction of her parents. The imminent divorce of Godard's associate Anne-Marie Mieville and impeccable acting make this appetizer far more palatable than the main course.

Michiel Bos

Civic civil

The Civic Symphony Orchestra of Boston, conducted by Max Hobart, Jordan Hall, November 24. Event in The Tech Performances.

For 60 years the Civic Symphony Orchestra of Boston has provided a training ground for musicians beginning professional careers. Although many of its talented performers move on to more famous orchestras, it is more than just a stepping stone. Under conductor Max Hobart, it is an impressively accomplished orchestra in its own right.

Last Sunday the orchestra teamed with cellist Ronald Thomas Paine's *Overture* to Shakespeare's *As You Like It*, composed in 1875. Paine was the first Provespian American composer to have his piece performed at Harvard, and the first of his talented group of American composers that arose in Boston between 1875 and 1925.

This piece, like the overture to Mendels-

son's *Midsummer Night's Dream*, was not composed with a stage production in mind, but simply to capture in music some of the joyous spirits of Shakespeare's comedy. The music shows the influence of Beethoven and Schubert, although the themes are strong enough to be pleasant in their own right. It was pleasant to hear the orchestra perform this piece, especially since it involves her recognition of her gradual acceptance of the birth of Jesus and his

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Pro Arte Molto Buono

The Pro Arte Chamber Orchestra of Boston, conducted by David Hoose, Sanders Theatre, November 24.

The Pro Arte Chamber Orchestra of Boston brought a very enjoyable performance to the many members of the MIT community who headed up river to hear this weekend's performance of Beethoven's Symphony No. 5 and Shostakovich's Symphony No. 14.

The opening of Beethoven's Fifth Symphony, which has been used to sell everything from war to automobiles, contains the most famous sequence of notes in music history. But Pro Arte rushed them: they lacked the pomp I had hoped for. The relatively small size of this chamber or-

chestra was mostly to blame, not the skill of the musicians or conductor. The rhythmic energy of the exposition and development was unrelenting, even if not breath-

less. The opening exchange of the cellos and violins in the second movement, between the cellos and violins, was a bit sing-songy. But in the second movement, the orchestra woke up. A sudden, shocking staccato stroke by the double basses introduced *Malagueña*. The percussion forces, with xylophones, drums, and clappers presented an almost

Anati

The Nation Thief, and from Robert Perrigo, directed by Jeffrey Steinhilber, at 40 Boston College (Dec. 13-14, 8:03 p.m.). One ham took over the story.

Stosakovich's Symphony No. 13 consists of 11 movements, which are scored for a variety of instruments. The first two sections are works by the Spanish poet Federico Garcia Lorca. Bartok's *Concerto for Orchestra* is a masterpiece of orchestration. The percussion forces, with xylophones, drums, and clappers presented an almost

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Joe Shipman

Tech ph

thieves

Great songs for mad king

The Fires of London, directed by Peter Maxwell Davies, Jordan Hall, November 23, Event in The Tech Performing Arts Series; Sinfonova, directed by Aram Gharaibekian, Jordan Hall, November 22, Event in The Tech Performing Arts Series.

Davies — are bleak and lonely, a place for the mind to turn inwards and focus on it- self. Such a setting nurtures the fantastic images of Maxwell Davies' unusual crea- tions, two of which were presented in Boston on Saturday night.

The Fires of London colorful presenta- tion of Davies' *Le Jongleur de Notre Dame*, which tells the tale of a juggler who takes holy vows but is derided by his fellow monks for his lack of spiritual skills. He is caught juggling before the statue of the Virgin, but the Virgin speaks, saying that the juggler's gift is acceptable to her.

Four of Davies' "voices" are in fact in- struments, each one brilliantly played. Brother David — "sung" by David Camp- bell — coerces Brother John (the juggler) into cleaning the floor with his bully-beef clarinet. Insistent, sweeping sounds of- fended the errant brother into action. Mad- eleine Mitchell — the virgin — rewards the juggler's act with an evocative violin tune. Jonny James was the juggler and pro- vided great entertainment, juggling any- thing else he could lay his hands on. Andrew Gallacher provided a wonderful mock-pious devotion, juggling the or- gan, and similarly pirouetting any- thing else he could lay his hands on.

Maxwell Davies' score is rich in creativ- ity, each of his "voices" providing myriad- faced images for the listener to reflect on and interpret as he will. A children's cho- rus rounds out the story, and helped cata- lyze the excitement on Saturday night.

After the intermission, the Fires per- formed *Eight Songs for a Mad King*, an elegy to the mental decay of George III. Andrew Gallacher's rendition of the role was simply numbing: The horrific vocal difficulties of the piece were brought off with aplomb and set in perspective by ter- rific acting, too.

Instrumental parts were played with ex- traordinary virtuosity. Musicians — sitting behind cages on stage — depict the falling apart of the king's world, translating any- anguish not communicable in words into powerful flesh-transcending musical im- ages.

Sinfonova's second concert of the sea- son continued in the stellar tradition of the first. The evening started with Corelli's *Concerto Grosso in F major*, Op. 6, No. 2, done smoothly and with consideration but driven by a spritely energetic spirit. Martin's *Etudes for String Orchestra* drew remarkable skill from Sinfonova's talented musicians. The music is difficult, to say the least, but the performance we heard brought out its inventiveness. The second study, "For Pizzicato" contained some amazing pizzicato effects, all done stylishly, colorfully and fluently.

The concert ended with the Boston pre- miere of Mahler's *String Quartet in D mi- nor*, "Der Tod und das Mädchen" (Death and the Maiden). I had previously heard this version of Schubert's work in New York, and had been disappointed. This quartet shows Schubert at his most con- centrated and personal; it seems to be mu- sic made for the intimacy of a four-person chamber ensemble by the larger orchestral forces. Sinfonova did considerably more than the New Yorkers to bring light to this piece; the Mahler arrangement deserves to be heard, it would be Sinfonova's. But I remain unconvinced that this piece could ever bring out the intensities of the origi- nal quartet.

John a Richmond

Serkin striking

Rudolf Serkin, Symphony Hall, November 24, Event in The Tech Performing Arts Series.

For Rudolf Serkin, being 82 has no neg- ative effect. His virtuosity, energy, and en- thusiasm were evident throughout the performance, when he bounded on stage to the Steinway grand, (whose sound, by the way, was wonderful). Serkin seemed to draw more and more strength from the enthusiasm of the audience.

The only flaw in the concert came in the first pieces, Mozart's *Fantasia in C Minor* and *Sonata in C Minor*. The program notes warned: "Indeed the *Fantasia* is ex- tremely free and passionate, with unex- pected key shifts and dramatic gestures." Serkin interpreted the Mozart very roman- tically — in a fashion which was tradition- al in his young years but is nowadays out of vogue. His elaborately stressed arpeg- gios and emotional changes of tone and volume, although very well presented, were not what I was expecting. All through the piece I longed for a cleaner, more classical *Mozartian* style. As Serkin played it, this music did not seem to be from Mozart's pen.

I think the audience shared my doubts, for the Mozart was the only piece where Serkin did not receive a standing ovation.

The other two pieces, Beethoven's *Sona- ta No. 21 in C*, Op. 53, "Waldstein," and Schubert's *Sonata in A major*, D 959, showed Serkin in his usual grand form. He is known for playing the romantics, and with these two pieces he captured the at- tention and appreciation of the audience. The Beethoven, resounding through the expanse of a packed Symphony Hall, was stunning. One could almost feel the ex- pansion of horses galloping over tiny coun- try roads: Serkin's evocative coloration was of symphonic proportions.

However, we were not listening to an or- chestra, but to a solo piano. It is a credit to Serkin's abilities that he can generate such emotion by himself.

The Schubert was very good, also. Un- fortunately, some of the most beautiful, quiet passages were ruined when the "Bos- ton audience" ornamented the *Andantino* movement with their own Symphony of coughs. Overall, though, Serkin managed to break through all the usual surface noise present in Symphony Hall, and earn a standing ovation at the end of the con- cert. This was a Tech Performing Arts se- ries concert, and members of the MIT community could have gotten tickets for \$6. If you didn't, you should have.

Andrew Gerber

GET OUT ON THE TOWN WITH THE TECH PERFORMING ARTS SERIES.

The Tech Performing Arts Series, a service for the entire MIT community, is in conjunction with the Technology Community Association, MIT's student newspaper in conjunction with the Technology Community Association, MIT's student community service organization.

Tickets are on sale courtesy of the Technology Association. Drop by Room W20.450 in the Student Center, or call 253-4885 to check on availability.

PRO ARTE CHAMBER ORCHESTRA

The Pro Arte Chamber Orchestra will perform Stravinsky's *Symphony of Psalms* and works by Hindemith in Sanders Theatre, December 4, 8pm. MIT price: \$5.

December 1, 8pm. MIT price: \$5.

Donizetti's *Anna Bolena* will be given in a concert version at the Wang Center for the Performing Arts. Richard Bonyage will conduct. Normal price: \$60.50. MIT price: \$8.

The Tech Performing Arts Series presents... ANNA BOLENA Starting Joan Sutherland

Choral notes

The MIT Choral Society, conducted by John Oliver, performed Beethoven's *Missa Solemnis*, November 22, Sacred Heart Church.

The MIT Choral Society with soloists Margaret Cusack, Valerie Walters, Marcus Haddock, and Keith Kibler, gave a splen- did performance under the direction of John Oliver. The 180 strong chorus — al- though slightly hesitant on a couple of oc- casions — sang well, with excellent control of dynamics, and gave the sense of power and grandeur the piece deserves.

The soloists were likewise excellent. Valerie Walters was particularly effec- tive in expressing the emotions of the piece.

The opening of the *Sanctus* — the first movement in which the soloists are heard before the chorus — was beautiful. Concertmaster Maynard Goldman was on top form, giving a strikingly touch- ing performance of the *Dolce Cantabile* violin song.

Poh Ser Hsu

John a Richmond

Graphics by Bill Coderre



opinion

feedback

Strategic Defense Initiative is flawed in many ways

To the Editor:

While I usually read the feedback section of *The Tech* with a measure of indifference, on this occasion I feel compelled to respond to the letter of John Pitrelli and Kevin Theobald ["SDI ensures our retaliation," Nov. 22], itself a response to Alan Szarawarski's guest column ["SDI is impractical and fatally flawed," Oct. 18]. For while they correctly point out some logical flaws of Szarawarski, they themselves make some serious errors in reasoning.

They state "the intention (of SDI) is that a high attrition rate on a Soviet strike would ensure that most of our retaliatory force would survive, so the Soviets would realize that attacking the US would be suicidal. . ." Do Pitrelli and Theobald not know that of the roughly 10,000 strategic warheads in the US arsenal, about 1/2 are on submarines, 1/2 of which are at sea and on alert status (DEFCON 3) even when all other forces are at their lowest state of readiness (DEFCON 1), not to mention that 1/3 of the bomber force (about 100 B-52's) is always at peak readiness, capable of being launched within 15 minutes? Furthermore, a Soviet attack on US communications facilities would not prevent the subs from launching their missiles, since they do in fact have the capability to launch without the President's orders, albeit with some delay. I don't know what

Pitrelli and Theobald think, but attacking with the full knowledge that my opponent will have at least 3000 warheads remaining sounds a lot like suicide to me.

In considering the costs of SDI versus the cost of the Soviets expanding their missile force by a factor of four, which they state as \$1.5 trillion (from what source I wonder), Pitrelli and Theobald state "though we do not know exactly what an SDI system would cost, reasonable estimates are far lower [than \$1.5 trillion]." In fact, a 1982 Defense Department report said that a system of space-based lasers, not including all the other systems which a complete SDI system might have, would cost up to \$500 billion (see "Strategic Defense and Anti-Satellite Weapons," Hearing before the Senate Committee on Foreign Relations, 4/25/84, p. 67). And when was the last time a major military system was completed anywhere close to its original budget? The costs of SDI are likely to increase dramatically as the vicious race between countermeasure and counter-countermeasure gets into full swing.

The whole subject of countermeasures is a tricky area. For instance, during the boost phase, one could rotate one's ICBM's, so that any laser light would be distributed over a large area. Or each ICBM could continuously secrete a laser absorbing liquid from its nosecone. Perhaps Pitrelli and Theobald (and their

sources) could devise arguments against these measures, but I could always come up with more. The SDI system would have to have counter-countermeasures for every Soviet countermeasure already deployed in space, whereas the Soviets could decide at their leisure and on the ground which ones to use and which new countermeasures to research.

The worst error which Pitrelli and Theobald make concerns the survivability of the SDI battle stations. They state "satellites are much more defensible than missiles because orbiting satellites are weightless and so can be armored as heavily as necessary." They are weightless once they are in space, but their launching costs depend roughly linearly on their mass. In a report entitled "Ballistic Missile Defense Technologies" the Office of Technology Assessment, US Congress, state that "required shielding weights could reach up to many tons for each defensive satellite station." At \$3000/lb for hundreds of satellites, that's tens of billions of dollars. You might say that that's negligible to the \$500 billion figure I just threw out, but it's an indication of how these countermeasure costs can escalate so quickly. Furthermore, shielding is rather ineffective against particle beam weapons, which destroy by penetrating a material, not by burning through a surface, and shielding is completely ineffective against an attack by

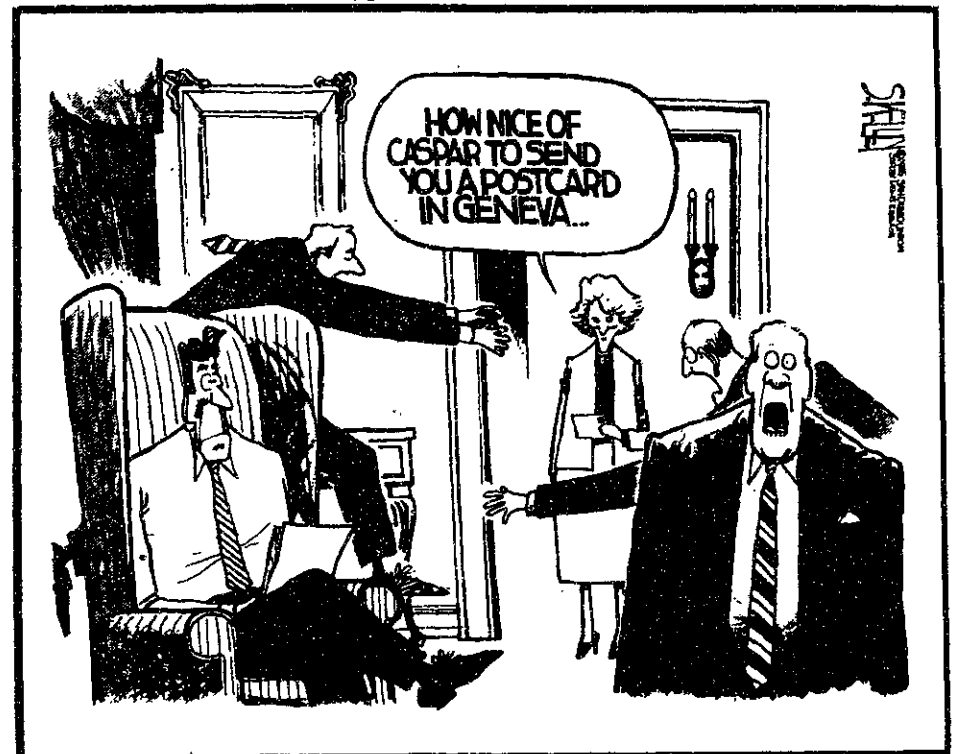
small, high velocity pellets. With both the target satellite and the incoming pellets travelling at a few kilometers per second, any impact is likely to seriously damage the target. Shielding is also ineffective against space mines which would lurk nearby each defensive battle station, blowing itself up along with the target satellite on orders from the ground. It is also difficult to shield laser mirrors or optical sensors, since they must have access to the outside environment.

The potential for preemptive attacks against space-based ballistic missile defense systems is perhaps the worst aspect of SDI. Imagine that both the US and Soviet Union had SDI-type sys-

tems in space. Would there not be great incentives in times of crisis to strike the opponent's SDI system, destroying his defenses while safeguarding your own? This is an important point not addressed by Pitrelli and Theobald.

I could go on for pages, but I don't want to displace any of the cartoons, which is what most of us read *The Tech* for anyway, right? To Pitrelli and Theobald, my parting words are to check out both sides of the issue. Try the OTA report I quoted earlier or "The Fallacy of Star Wars" by the Union of Concerned Scientists for starters.

Eric J. Raiten '86



UA NEWS AND SHIRT REPORT



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The Undergraduate Association Nominations Committee is now accepting nominations for "Who's Who among students in American Universities and Colleges." Any juniors, seniors or graduate students who don't know who they are, or possess outstanding qualities in scholarship, leadership, service, sports, citizenship, are urged to submit cover letters and resumes to the UA NomCom, ASAP, W20-403, by 12/6/85. If there are any inquiries, please direct them to Lulu at 494-1567, or leave a message at the UA Office, x3-2696. If you don't have any questions or comments, please call Dave at dl-9692. His hours will be posted in Lobby 10 all next week.

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SDI alternatives debated at forum

(Continued from page 1)

race, according to Yonas. SDI can achieve these goals, he said, because the changes in offense that the Soviets would need to make to overcome an SDI defense might be too difficult or expensive.

Predictions of SDI's impossibility are premature, Yonas said. His office aims to "carry out a research program . . . as a basis for a decision in the early 1990s."

There are so many possible countermeasures to SDI that the program is not worthwhile, Garwin claimed. A variety of countermeasures that offensive missiles could use to "destroy, bypass or overwhelm" the defense are feasible.

For example, he said, Intercontinental Ballistic Missiles could jitter their flame in the boost phase so they could not be tracked as easily, be protected from the damaging heat of lasers by screens or cooling, or hide from defensive sensors with screens or decoys.

In a question-and-answer period following the discussion, Yonas criticized Garwin's arguments as unrealistic. "We're finding that a lot of these back-of-the-envelope cartoon countermeasures are very hard to engineer," he said.

SDI impedes arms control, Garwin also said. Any defense will be imperfect, so we must "recognize that we're going to be relying on deterrence through retaliation for a long time."

Only a thousand nuclear weapons on each side, much fewer than the current stockpiles, are really needed for deterrence, Garwin continued. But SDI blocks efforts to reduce them to this level, he said.

Despite SDI's flaws, Garwin endorsed research at the rate of \$1.5 billion per year to keep up with the Soviets and to "find out whether the President's dream [of perfect defense] is feasible."

Research on intercepting and destroying ballistic missiles has been going on since the Army's Nike Zeus and Nike X programs of the early 1960s, Flax said.

The United States feared that the Soviet Union might be working on similar systems as this technology developed, Flax said. Research proceeded under the Sentinel and Safeguard programs until the signing of the 1972 ABM treaty, he continued.

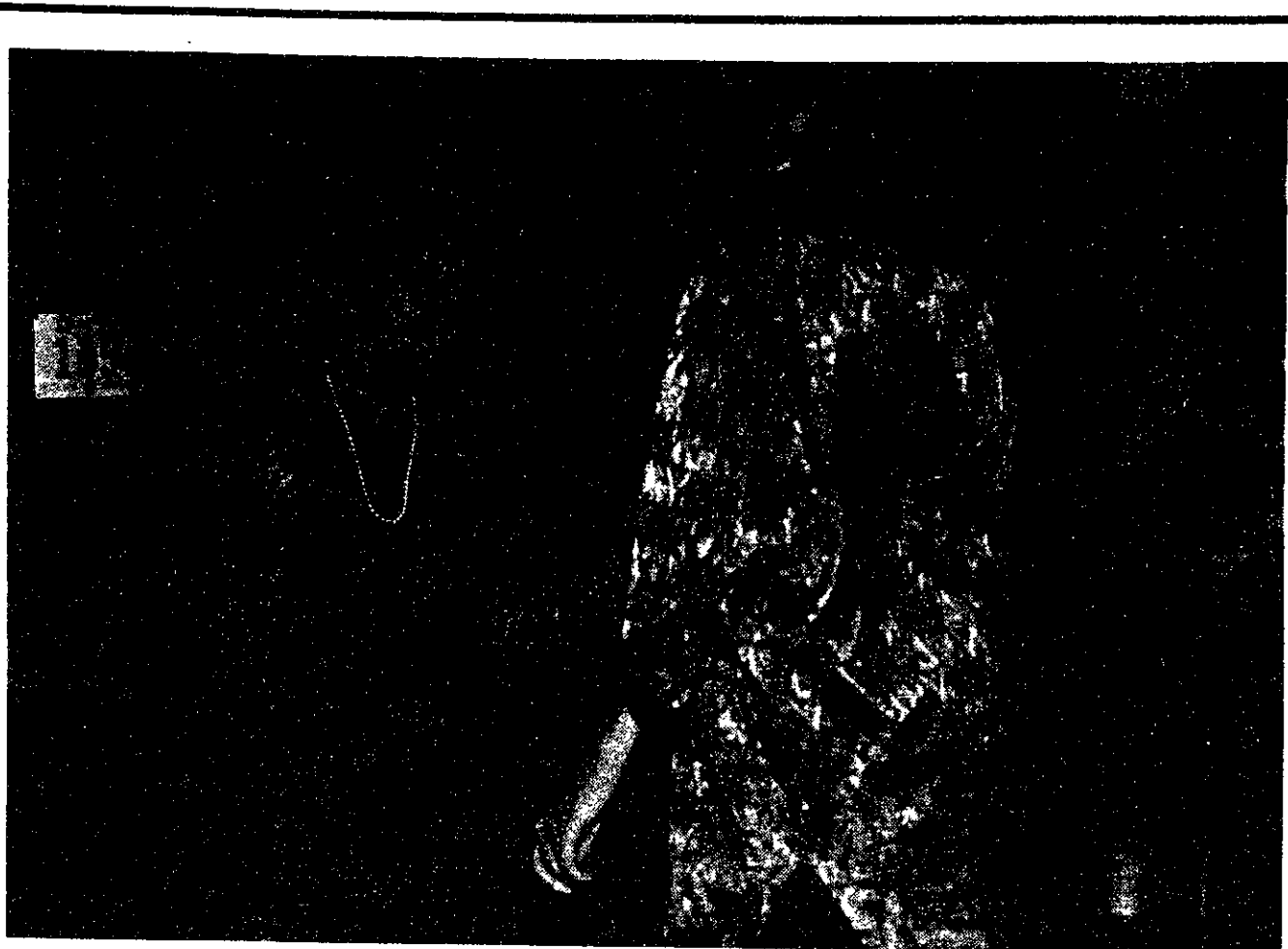
"Research and development went forward in both the Soviet Union and the United States," although Safeguard was phased out and implementation was curtailed by the treaty, Flax said. There has been less research on coun-

termeasures because the treaty reduces the emphasis on offense, he noted.

"The issues of the current debate [over SDI] don't differ in many particulars" from debates over earlier ABM systems, Flax concluded, citing the question of whether new technology would improve the "cost exchange ratio" — the relative costs of offense and defense.

Another important question, Flax added, is whether any ballistic missile defense could overcome the "offense-dominated" nature of the current doctrine of mutually assured destruction (MAD). MAD is based upon the belief that nuclear war is forestalled by each side's knowledge that the other can retaliate decisively to a first strike.

Some say "Star Wars" would deter attacks by making them less certain of success, but others claim it would only encourage attempts to defeat it with even greater offensive strength, he explained.



Tech photo by Stephen P. Berczuk
Over 103 registered dancers collected more than \$6000 for the Muscular Dystrophy Association during the Dance Marathon held in Walker Memorial Saturday. Laureano Cangahula '87 and Megan Smith '86 were the two top money-collectors. Nu Delta and The Thaliens co-sponsored the event.

Some questioners disrupt peace forum

(Continued from page 1)

chairman of the student Disarmament Study Group, asked the Soviets "how [the United States and the Soviet Union] see each other and why we see each other the way we do."

Bantsenkin described the "hard anti-Soviet" attitude of some Americans. He mentioned the American military action in Grenada two years ago.

At this point, several audience members jumped to their feet, shouting that the Grenada invasion was welcomed by the island's people, and condemning the Soviet invasion of Afghanistan. Bernstein warned the crowd that anyone who shouted out would be asked to leave.

The discussion continued with Paul Josephson G, a student of the history of science who spent eight months in the Soviet Union. The Soviets do study America more than Americans study the USSR, he said, adding that "better exchanges" are needed to counter the lack of understanding.

The Student Council is not the only Soviet student organization, Zhuravlyov said. There are over 20 groups advocating peace at Moscow University. Their slogans include "disarmament from both sides" and "no to SDI from both sides," he added.

The peace movement originated the idea of "nuclear-free zones" in central Europe, he continued. This later became official Soviet policy. Zhuravlyov expressed the wish that the "rest of the agenda" would also become policy.

Questions from the audience followed the discussion. Many questioners implied that the Soviet speakers were hypocritical. If the Soviet Union wanted more communication, one asked, why

were Soviet students refused permission to read the *New York Times*? Zhuravlyov said the *Times* was available in the Soviet Union, but some audience members disagreed.

Lenin never said that socialism and capitalism could not exist peacefully together, Zhuravlyov claimed, asserting "there is no such concept." One audience member found the quote in a book at the library. The book was a biography and the quote was not written by Lenin, Zhuravlyov countered.

The Soviet action in Afghanistan was in accord with the United Nations charter, Zhuravlyov claimed. Angry shouts from the crowd began to drown him out, and one audience member was asked to leave at that point. The United States had also taken imperialistic actions in Iran, Guatemala, Chile and Grenada, Zhuravlyov continued.

The Soviet Union does not jam broadcasts of "Voice of America," Zhuravlyov claimed. He then retracted this statement, adding that jamming began only "after detente." The "Voice of America" broadcasts unfriendly anti-Soviet propaganda, he explained. A member of the audience who said he was born in the Soviet Union disagreed.

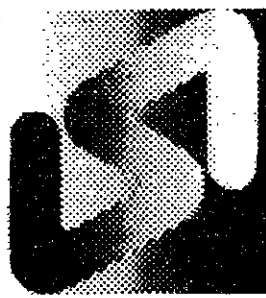
Another audience member

asked the Soviets whether they held any opinions not endorsed by the Communist Party. Zhuravlyov said his point of view "may be different on some views," but declined to give examples because "this question [was] asked in such a hostile way."

The panel discussion was "predicated on the idea that if

people understand each other, they will influence their governments" toward peace, the next questioner said. But the Soviet government is unresponsive to its constituents and suppresses dissent. Later, questioners again accused the visitors of representing their government, not the Soviet populace.

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Columbia divests, but Dartmouth refuses

By Earl C. Yen

First in a series examining anti-apartheid protests at colleges across the United States. Today's article focuses on the issue of divestment at Columbia and Dartmouth.

Columbia: first Ivy to divest

Columbia University became the first Ivy League institution to sell its holdings in American companies that operate in the racially-divided nation of South Africa when its board of trustees voted on Oct. 7 to divest.

The divestment of \$39 million, comprising four percent of Columbia's \$900 million portfolio, will be carried out over a two-year period, according to the Oct. 8 *New York Times*.

Columbia President Michael I. Sovern stated, "Divestment is a complex issue on which decent and reasonable people disagree. Divestment strengthens our condemnation of apartheid. It is the right course for us at this time and so we are taking it."

"In deciding to divest in an orderly way over a period of time, we are expressing our abhorrence of apartheid and the South African Government's obdurate adherence to it," said Samuel I. Higgonbottom, chairman of the Columbia board of trustees.

The trustees did not intend this vote to be interpreted as passing judgment on other American institutions and corporations, Higgonbottom said. "We are in the fortunate position of having only a small fraction of our endowment in companies doing busi-

ness in South Africa, and so we can divest without imposing a heavy burden of transaction costs on our faculty, students and staff."

The trustees were aware that many American companies operating in South Africa have made "significant efforts on the behalf of blacks in the country," he noted.

The decision to divest was made six months after Columbia students and faculty attracted national attention by staging a 30-day sit-in at a major office and classroom building [*The Tech*, April 9, 1985].

A special panel of trustees advised the board on Aug. 28 that it pass the divestment resolution. The panel claimed that the divestment was a result of "recent developments in South Africa" and not the demonstration in the spring.

Anne Kornhauser, editor-in-chief of *The Columbia Daily Spectator*, the student newspaper, disagreed with this explanation.

"The overwhelming sentiment of the community here was that it [divestment] was the result of both the turmoil there [in South Africa] and the protests here [on campus]," Kornhauser said. "The protests forced the administration to think much more seriously about the issue."

The administration wanted to avoid facing a long-term protest over the issue, she claimed. "The decision was much easier to make for Columbia because its investments in South Africa were a

very small percent of its portfolio," Kornhauser explained. "The divestment is not a major restructuring of its portfolio."

Dartmouth: Activists defy dean

A group of Dartmouth College students built three symbolic shacks on the college green to protest the school's holding of stocks of companies operating in South Africa, said Karen Garnett, president of *The Dartmouth*, the student newspaper.

The shacks, or "shanties," symbolize the economic suffering that South African blacks experience, according to Rajiv Menon, member of the student-organized Dartmouth Community for Divestment (DCD). The DCD demands immediate and complete divestment and the establishment of a committee on ethical investment that would directly control Dartmouth's investment policy, Menon said.

The DCD has defied Dean Edward Shanahan, who ordered the students to take down the shanties Nov. 19, two days after the students constructed the first.

"At some point, the structures will have to come down," Shanahan said in *The Boston Globe*. "That will be done by either the college or the students. I hope the students will do it themselves."

Joshua Stein, member of the DCD, did not believe the school would tear down the shacks. "I can't imagine the administration will take down the shantytown," Stein said in *The Boston Globe*. "The shantytown is just too powerful of an instrument."

The DCD built the shanties to coincide with the Dartmouth Board of Trustees meeting that weekend, Menon told *The Tech*. The trustees, who usually hold a press conference after each meeting, did not disclose the proceedings of their meeting to the public, Garnett said.

"No action was taken by the Board with respect to your demands," stated a letter Shanahan addressed to the DCD Nov. 17. "I am personally writing to tell you that you will receive no specific response from the trustees," continued the letter.

The Dartmouth faculty passed a resolution by a 108-0 vote in May to recommend to the board that it divest its South African-related stock.

Approximately 50 faculty members and 150 students participated in a demonstration Nov. 20 in front of the administration building, Garnett added. "I've been involved in this [divestment movement] for three years, and the faculty involvement is just incredible," Menon said.

Leo Spitzer, Dartmouth history professor and former chair of the Advisory Committee on Investor Responsibility, faulted the trust-

ees for not responding to calls for investment from various segments of the community.

"Time and again, the trustees have been unwilling to confront the fundamental ethical issue at the basis of their South Africa investment policy," Spitzer explained in the Nov. 18 *Dartmouth*.

Robert Henderson, chairman of the trustees' Committee on Investments, argued that the trustees have a responsibility not to jeopardize Dartmouth's endowments, according to *The Dartmouth*.

Menon did not believe the board would seriously consider divestment, in spite of the campus-wide protests.

"To be quite honest, I really don't think they'll do anything," Menon admitted. "They haven't even responded to the faculty vote or our protests. But we're trying to push them on all fronts."

Dartmouth has \$63.4 million invested in US companies in South Africa, which is 15 percent of the school's total endowment, said Dartmouth spokesman Alex Huppe said in the Nov. 19 *Boston Globe*.

SDI could "peter out"

(Continued from page 1)

Rather, "national policy is being based on an extremely remote hope."

Some protection against nuclear attack is not better than none, he said. This idea, he said, is "based on the assumption that if we build a defense, the Soviets will do nothing. A safer assumption is that if we build a defense they will build a bigger offense."

"If the US deploys a strategic defense, it would be easy for the Soviets to over-compensate and it would lead to an arms race," Ruina said. The chance of full-scale deployment of SDI is extremely remote, he claimed. SDI will likely "peter out."

Mark argued that advances in microelectronics, sensors, lasers and space operations have made a strategic defense system more feasible.

Silo defense and the use of airborne lasers to reduce the threat of submarine-launched missiles could be deployed in the foreseeable future, he said.

Scowcroft argued that "the fundamental question is what does SDI do for our strategic concepts." Both the Soviet Union and the United States would need greater offensive and conventional capabilities, he said. "SDI would kill notions of extended deterrence."

"We may be making the world safe for Soviet conventional aggression" by rendering nuclear forces ineffective, he said. SDI development should be coupled with an accelerated offensive program, "so that we maintain our ability to threaten the Soviets."

The United States "may not have a choice whether to continue SDI," he added. The President "would have an insurmountable problem" if the United States discontinued SDI unilaterally. A similar situation would arise if SDI were abandoned in an unverifiable treaty that the Soviets disregarded by deploying a strategic defense system of unknown effectiveness, Scowcroft said.

"It is unlikely we can ever make [an SDI] system," Weisner claimed. Estimates of ten percent leakage are unfounded, he said. "Any decisions are either totally irrelevant or premature until we understand what we can put together."

SDI deployment, in addition, would make negotiations with the Soviet Union impossible, Weisner said, and worsen the strategic situation.

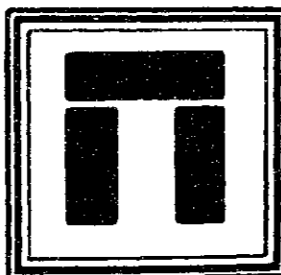
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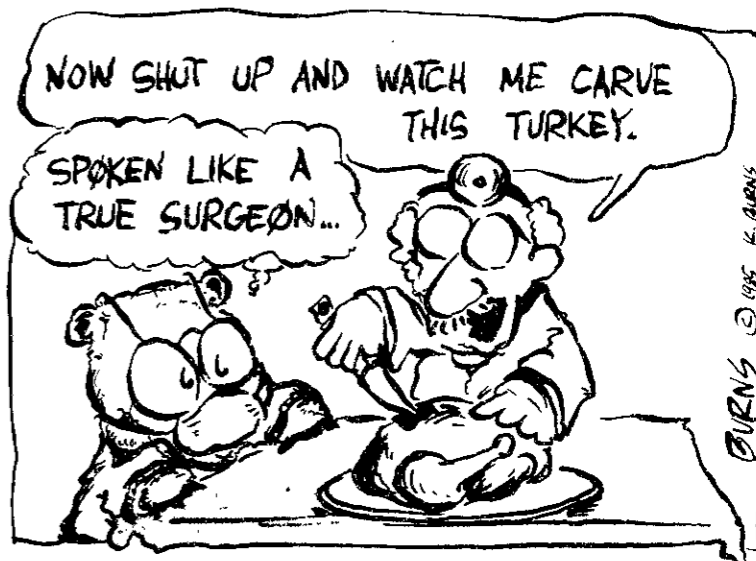
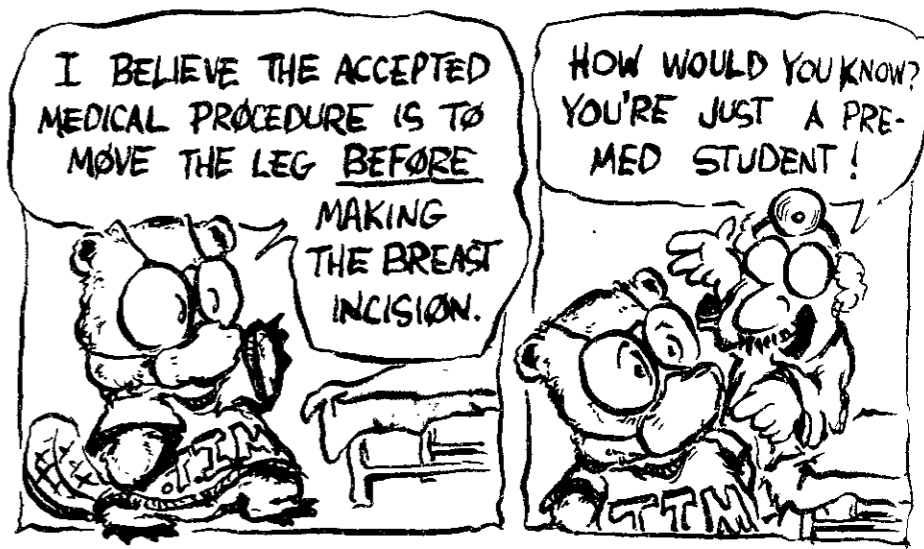
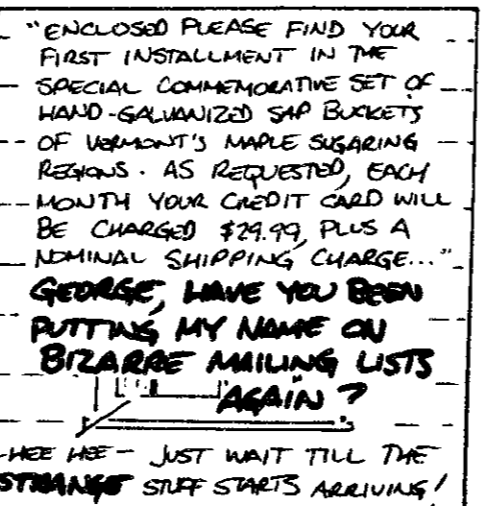
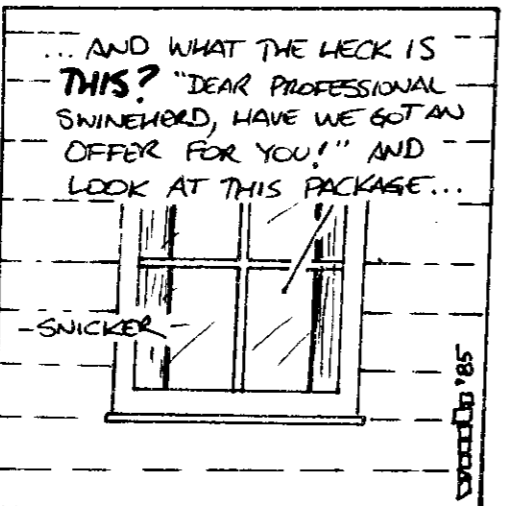
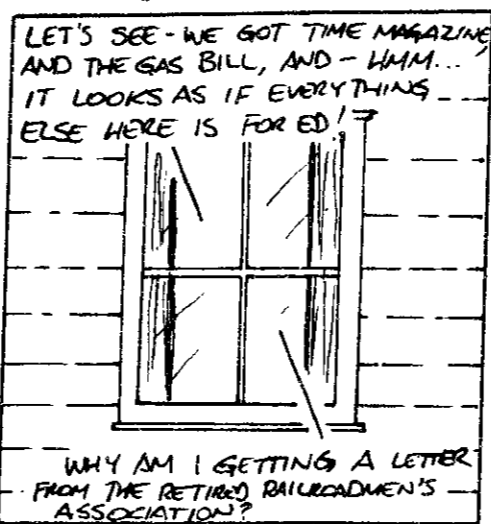
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