

Faculty Urges US Out of Viet War

A special meeting of the MIT Faculty was held last Friday afternoon "for consideration of issues connected with the current student strike."

The meeting was convened on the petition of 12 members of the Faculty. Under Faculty rules, any 10 members may petition for a special meeting.

Several motions were offered and discussed. A principal motion that was passed was offered by Professor Louis D. Smullin, head of the Department of Electrical Engineering. It said:

"A majority of us at this meeting of the MIT Faculty hold that:

"(1) American military operations in Southeast Asia for many years have been highly destructive of the people and land of Indochina, at great and irredeemable costs to the United States. Two years ago, this Faculty petitioned Congress to 'take all steps necessary to bring the war to a quick end.' Now it is even clearer to us that further destruction is a tragic waste, and we urgently repeat the call to our government to get out of this war as fast as possible.

"(2) The continuation of this terrible war assaults the consciences of hundreds of our students, who now feel once again that they cannot continue business as usual. We ask all our colleagues to respect this feeling, to allow maximum flexibility of academic schedules during the current crisis, and not to penalize students academically for acts of conscience."

The motion carried by a vote of 175 for, 98 against and 19 abstaining.

A companion motion, offered by Professor Franklin M. Fisher of the Department of Economics, also passed. It read:

"The Faculty adopts as its policy the statement of the Committee on Educational Policy circulated with the call for this meeting and calls on its members to act in the spirit of that statement."

The motion passed by a standing vote for which no count was necessary.

The motion by Professor Fisher referred to a statement issued earlier in the week by the CEP regarding academic responsibilities and requirements for students during the current period of protest activity and political campaigning. That statement said:

"In the present time of national crisis and questioning, the CEP has been made aware that many members of the Institute community feel a pressing need to

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Tuba City Four



-Photo by Margo Foote

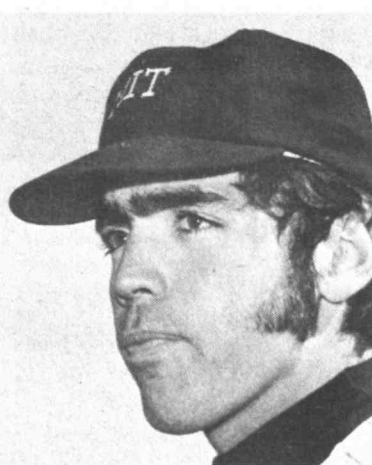
Four members of the MIT Symphony Orchestra are shown with four rare Wagnerian tubas they learned to play in preparation for performances of Bruckner's 7th Symphony on the Orchestra's recent spring tour. Bruckner's symphony is one of very few compositions that use the tubas, which were invented by Wagner for his Ring operas. The instruments, two tenor and two bass, have a narrower bore than the conventional contrabass tuba (one of which is shown at center for comparison) and are equipped with a funnel-shaped mouthpiece similar to those of French horns. This is one of less than a dozen sets of Wagnerian tubas in the country. These instruments date from the first performances of Bruckner in America and belong to the Boston Symphony Orchestra, which rented them to the MIT students. Clockwise from left, the students are: Eric W. Strid, a sophomore from Anchorage, Alaska; Dean E. Kross, a junior from Ellenville, N.Y.; Anthony E. Scandora Jr., a junior from Wheaton, Ill.; and Martin K. Mason, a sophomore from Winooski, Vt.

Dopfel to Face Northeastern

Al Dopfel, pitching whiz for the 1972 MIT baseball team and a prospect for the big leagues, will go after his fifth win against two losses Wednesday afternoon when he faces a hot Northeastern nine at Northeastern.

Northeastern is riding a seven-game winning streak and has hopes for an NCAA tournament berth. In the stands, however, will be a crowd of major league scouts interested in seeing if Dopfel, a management senior from Brockton, Mass., has the potential for the big time.

MIT itself has a four-game winning streak—largely because of Dopfel, who last week put on one of the most spectacular single player efforts in MIT sports history. Both his pitching and his hitting gave MIT single wins over Boston University and Brandeis and two



Al Dopfel, '72.

wins over Coast Guard. Here's how Dopfel's week went:

Monday (April 24) in a 12-2 win over BU, Dopfel played right field, had three hits including a double,

Science Adviser to UK Will Give Compton Lecture

Mason Is Named to Chair

Dr. Samuel J. Mason, professor of electrical engineering and associate director of the Research Laboratory of Electronics, has been appointed Cecil H. Green Professor for a two-year term.

Announcement of the appointment was made by Dr. Alfred A. H. Keil, dean of the School of Engineering, and Professor Louis D. Smullin, head of the Electrical Engineering Department.

Professor Mason succeeds the first holder of the chair, Professor Peter Elias of electrical engineering. Dr. Mason will serve as Cecil H. Green Professor from July 1, 1972, to June 30, 1974.

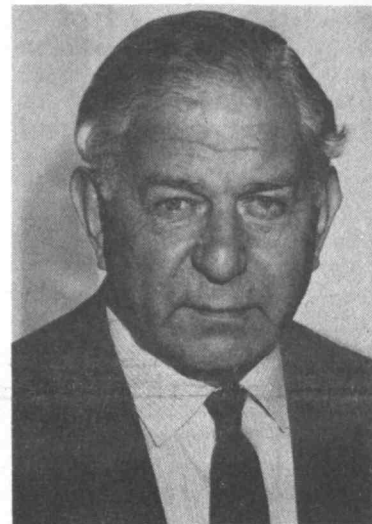
The gift of the chair by Mr. and Mrs. Cecil H. Green was announced in January, 1970. At that time it was stated that the endowment would be used to help individual members of the electrical engineering faculty move into new areas of research; and that, accordingly, the tenure of each holder of the chair would be limited to two or three years. During Professor Mason's tenure as Cecil H. Green Professor, he will devote his research efforts to the problems of pattern recognition and the applications to automation.

A leader in development of experimental reading machine systems for the blind, Professor Mason received the bachelor of science degree from Rutgers in

(Continued on page 2)

Lord Zuckerman, distinguished biologist and recently retired as Chief Scientific Adviser to the British Government, will present a two-part Compton Lecture entitled "Science, Sense and Society" Monday, May 8, and Thursday, May 11.

The Monday portion of the lecture will begin at 8pm in Kresge. Lord Zuckerman, in a talk entitled "External Stresses and Strains," will speak on the world-wide disillusionment with science and



Lord Zuckerman.

technology that appears to be growing along with pollution and other technology-related problems. Lord Zuckerman intends to discuss this growing disillusionment in light of what he says is the fact that science has never operated on its own, but has, throughout its history, been subject to external political pressures.

On Thursday, in a talk starting at 8pm in Room 26-100 and entitled "Internal Stresses and Strains," Lord Zuckerman will discuss some of what he calls the "more extravagant statements" made by "pseudoscientists" who pretend that science can do everything. These may be divided into three groups, according to Lord Zuckerman: those who want to change the scientific method, stating that they know what is best to suppress and what should be followed through; those who believe that they can explain human behavior by studying the simple behavior of animals, deciding by that means, for example, that man will always be aggressive; and those who make things look simple that they cause the major issues to lose their perspective and thereby distract attention from the real problems.

Lord Zuckerman brings a great deal of practical experience to the subjects he will be discussing. From 1950 to 1964 he was chairman of the Committee on Scientific Manpower in the United Kingdom. In 1964 he was designated chief scientific adviser to the U.K. Secretary of State for Defence, and

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drove in two runs and scored twice himself.

Wednesday (April 26) Dopfel registered MIT's first no hitter ever in a 6-0 victory over Brandeis. He struck out 18 batters, a new MIT record, and faced only the minimum 27 hitters. He walked the lead off batter in the fourth inning, but that was erased by a double play. No ball was hit out of the infield. At bat, Dopfel drove in two runs.

Saturday (April 29) in consecutive 5-3 and 13-6 wins over Coast Guard, Dopfel pitched the opener, allowing four hits and striking out 12 while contributing to his own cause with a two-run home run. In the second game, Dopfel played right field and collected another three hits, two of them home runs including a grand slam

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Solomons Company to Perform Dance Recital in Bldg. 7 Lobby



Gus Solomons, '61.

Six dancers, all members of the Solomons Company, will present free noon-hour dance performances in the Building 7 lobby on May 9, 10, 11 and 12.

Sponsored by the Department of Architecture, the performances will begin at noon and last for one hour. They will be directed by dancer and choreographer Gus Solomons, Jr., a member of the MIT Visiting Committee for the Arts and an alumnus in the Class of 1961.

The dances will not be traditional, but rather movement activities. "The dances do not have literal meanings," Mr. Solomons says. "They deal non-objectively with kinesthetic and spatial relationships, organized in various kinds of chance and game-rule structures. The movement is

shaped and shaded by the dancers' own personalities. Each viewer then interprets the resulting images as his own experience dictates."

The dancers will perform on the multi-level platform construction built last spring in the main lobby by architecture students. Mr. Solomons hopes that during the performances members of the community and the public will congregate as usual on the various platforms, enabling the dancers to explore a populated space and to communicate directly with the audience.

Mr. Solomons, who now lives in New York City, began his dancing career in his native Boston. While studying architecture at the Institute, he trained with dancers Jan Veen and Robert Cohan, and

danced in many MIT theatricals. In 1959, he became one of the five original members of The Dancemakers, Boston's first professional dance company.

After graduating from MIT, Mr. Solomons danced in New York and with several touring companies. In 1968 he choreographed and performed in an award-winning dual-screen experimental dance piece for NET-TV. He has taught dance in many universities throughout the country, including Bard, Harvard and Radcliffe, U.C.L.A., and New York University.

In January 1971, he founded the Solomons Company. The company consists of six dancers, four women and two men, a visual designer and a stage manager and has performed frequently in New York and Boston in the past year.

Mason to Hold Chair

(Continued from page 1)

1942 and worked on microwave radar antennas at the MIT Radiation Laboratory during World War II. He joined the RLE staff when the laboratory was formed in 1945, received the M.S. degree in 1947 and the Sc.D. degree in 1952, both from MIT. He joined the electrical engineering faculty as assistant professor in 1949, was promoted to associate professor in 1954 and to professor in 1959. In 1967 he was named associate director of RLE.

He has been leader of the Cognitive Information Processing Group at RLE and has conducted research on sensory aids for the blind and associated problems of character recognition by machines, real-time data processing, and the psychophysics of tactile and auditory displays. His professional career has in-



Professor Mason.

cluded research and teaching in electromagnetic theory and antennas, microwave particle accelerators, electronic circuit theory, and feedback theory.

Professor Mason is a member of Tau Beta Pi, Eta Kappa Nu, Sigma

Metal Conference Meeting in Kresge

Several hundred scientists from the U.S. and abroad are on the MIT campus this week attending the Second International Conference on Titanium being held at Kresge Auditorium.

Sponsors are the Metallurgical Society of AIME, the American Society for Metals and the Institute of Metals (London) in association with the Japan Institute of Metals and the Academy of Sciences of the USSR. Sessions opened Tuesday and will continue through Friday noon.

Xi, a Fellow of the Institute of Electrical and Electronics Engineers, and a member of the Biomedical Engineering Training Committee of the National Institute of General Medical Science. He and Mrs. Mason were faculty residents at both Baker and Senior Houses.

Hayden to Show Sonic Environmental Works

A series of electronic musical events, under the general heading "Soundings," will be presented in Hayden Gallery and courtyard from Wednesday, May 10, through Friday, May 19.

Sponsored by the Committee on the Visual Arts, "Soundings" is being directed by composer Paul Earls, a fellow at the Center for Advanced Visual Studies (CAVS). There will be three different types of events, entitled *Sounding Space*, *Corridor Soundings* and *Live and Electronic Court Soundings*.

Sounding Space refers to a live electronic feedback system which will be installed in Hayden Gallery. The system will make use of the resonant characteristics and changing circumstances of the environment. Performances will be held daily from May 10 to May 18.

Corridor Soundings will be composed of six performances of multi-channel electronic works, derived from existing recordings. During these performances

speakers will be set up in Hayden Gallery and in the corridors surrounding it, enabling the audience to wander through the area while listening to the program. Performances are scheduled for May 13 and 14 at 2:30pm, and May 16 at 8:30pm.

Live and Electronic Court Soundings will consist of performances featuring works by Paul Earls, Lyle Davidson, Joyce Mekeel and John Cage, which combine electronic and live music. These performances will be presented on May 12 and 19 at 7:30 and 9pm in the sculpture courtyard outside the gallery.

Paul Earls was born in Springfield, Missouri, in 1934. He received the B.M. degree from the Eastman School of Music and the M.M. and Ph.D. degrees from the University of Rochester.

Earls, who is on leave from Duke University where he is a member of the music faculty, has been a fellow at the CAVS since 1969 and has been teaching music at MIT this year. As a fellow at the CAVS, he has worked on many of its collaborative projects, including "Dialogue for the Senses," a synesthetic exhibition for unsighted persons which will presently be installed in the Tactile Gallery in the Wadsworth Atheneum in Hartford, Conn.

Earls has composed electronic and conventional concert works, environmental sound works, films, theater music, exploratory multi-sensory systems, and musical encoding techniques. His compositions have been performed throughout the country and in Israel.

Faculty

(Continued from page 1)

commit energy and time to political activities. University responsibilities and personal political commitments may sometimes conflict, and different individuals will balance their priorities in different ways. The Institute has an obligation to remain open and to have its classes and academic processes continue. The CEP recommends, however, that the faculty and administration provide to individual students and to individual faculty members as much flexibility in satisfying their Institute responsibilities within the current term as is consistent with the rights of other individuals.

"More specifically it is the CEP's unanimous recommendation:

"1) that the individual teachers be flexible with regard to arrangements under which individual students may complete their academic work within the present term:

"2) that individual teachers make arrangements to ensure the continuity of their classes."

The statement, signed by all CEP members, established a special committee to advise and assist students and faculty members in applying the policy. Chairman of the special committee is Professor Roy Kaplow.

In another action, the Faculty urged its own special committee set up in the fall of 1970 to study multiple independently-targeted re-entry vehicle missiles (MIRVs) to return a report soon and decided to give over part of a Faculty meeting in October to discuss MIRV and the international arms race.

TECH TALK

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Please address all news and comment to the editorial office, Room 5-111, Ext. 3277.

Interdisciplinary Science to Become Course XXV

A new S.B. program in interdisciplinary science will be offered next year at the Institute as Course XXV.

The new program takes the place of Course XII-B, which was an interdisciplinary course in physical sciences. It has been offered in the Department of Earth and Planetary Sciences for the past three years.

Course XXV has broadened the scope to all of the departments in the School of Science. It is intended for students who want to follow interdisciplinary science programs significantly different

from anything offered in regular departmental degree programs.

Directing the new course will be a faculty advisory council made up of representatives from each department in the School of Science. Dean of the School of Science Robert Alberty will serve as chairman of the council, which will admit students into the course, approve student programs and help students in finding suitable advisors.

Professor Charles C. Counselman of Earth and Planetary Sciences will act as Registration Officer for Course XXV. He has

been associated with the program since it was started as the experimental Course XII-B.

According to Professor Counselman, Course XII-B was originally started on a trial basis by Professor Frank Press, head of Earth and Planetary Sciences, and President Jerome Wiesner, then Dean of the School of Science. Its purpose was to broaden the range of opportunities for undergraduate students in the sciences.

Up to now three classes have graduated in the experimental program and there are three classes of about 12 students each in

the program. They will automatically be in Course XXV as of next year.

In the new program every student will arrange his own curriculum in consultation with his advisor and subject to the approval of the faculty council.

It is expected that students not only will have the option of transferring at any time into a specific science department, but also will be qualified for admission to graduate study in one of the sciences.

Course XXV students will have to fulfill the general Institute

requirements. In addition the interdisciplinary curriculum must include a coherent 84-unit set of science subjects beyond the introductory level which is aimed at a well-defined educational goal. These 84 units correspond to the core program in other departments but in XXV they may be tailored to each student's needs.

Professor Counselman emphasized that the 84-unit science requirement must actually be in science and not in the social sciences or humanities. However, students in XXV will have 96 units of unrestricted elective time.

Language Lab Offers French, Spanish, Amharic, Tagalog, Xhosa to Students

Over 12,000 student hours will have been spent in the MIT Language Lab this year by the end of the term by people studying languages ranging from French and Spanish to Amharic, Tagalog and Xhosa.

The lab is open to every member of the MIT community during the spring and fall terms. During the summer it is used for BASIS, a six-week program to teach English to foreign students.

About two-thirds of the lab time is spent by students, either in class groups or individually in assigned lessons. The remaining third is spent by various members of the MIT community who, for any reason, can study any of the languages available in the lab.

The languages offered include German, French, Russian and Spanish which are offered as courses at MIT. In addition, there are tapes in Italian, Chinese, Japanese, Bengali, Swahili, Hindi, Greek, Korean, Vietnamese, Amharic (Ethiopia), Xhosa (South Africa), Yoruba (West Africa), and Tagalog (Philippines).

Besides the language tapes, there are music "eartraining" tapes and recordings of readings of plays, prose and poetry.

The director of the language lab is Mrs. Margaret Freeman, an instructor of Russian at MIT. She has been at the Institute since 1932, first as a graduate student in mathematics and in various capacities since then:

Mrs. Freeman first directed the

old MIT language lab in Building 20 and then in 1966 designed and opened the new lab in the basement of Building 14.

Assisting her is Mary Ann Owens who does most of the day-to-day running of the lab. In addition, she prepares tapes for the lab system and trains students to use the lab.

Because she is German, Mrs. Owens records the tapes for MIT German courses. She also speaks fluent French and English and understands Russian and Spanish.

There are 30 booths in the lab. In these students can dial for lessons in any of the MIT course languages. For more exotic languages, they can dial the lab assistant who must play them from the control room.

In addition to the lab itself, there are six remote units: one each in McCormick Hall, Burton House, Baker House, and the Hermann Building, and two in the Student Center Library. These units can be used 24 hours a day.

Standard course tapes can be dialed from the remote units at any time. The other tapes can be played by the lab assistant whenever the lab is open. Students in the remote units, as well as in the lab, can dial for assistance during hours the lab is open.

Hours for the language lab are as follows: Monday and Tuesday, 9am to 10pm; Wednesday and Thursday, 9am to midnight; Friday, 9am to 5pm; Saturday, 12 noon to 5pm; and Sunday, 2pm to 10pm.

Dramashop to Perform

"Macrune's Guevara," an English play by John Spurling about the Argentinian *guerrillero* Che Guevara, will be presented by the MIT Dramashop in Little Theatre at 8:30pm on May 4, 5, 10, 11, 12 and 13.

The performance will be directed by Professor Joseph Everingham. Stage settings ranging from an attic bedroom in London to the jungles of Bolivia were designed by William D. Roberts. Linda Martin designed the colorful costumes.

"Macrune's Guevara," unlike other theatrical treatments of the life of the revolutionary, depicts Che Guevara as seen through the eyes of an aged, second-rate Scottish artist who has scrawled illustrations of newspaper stories

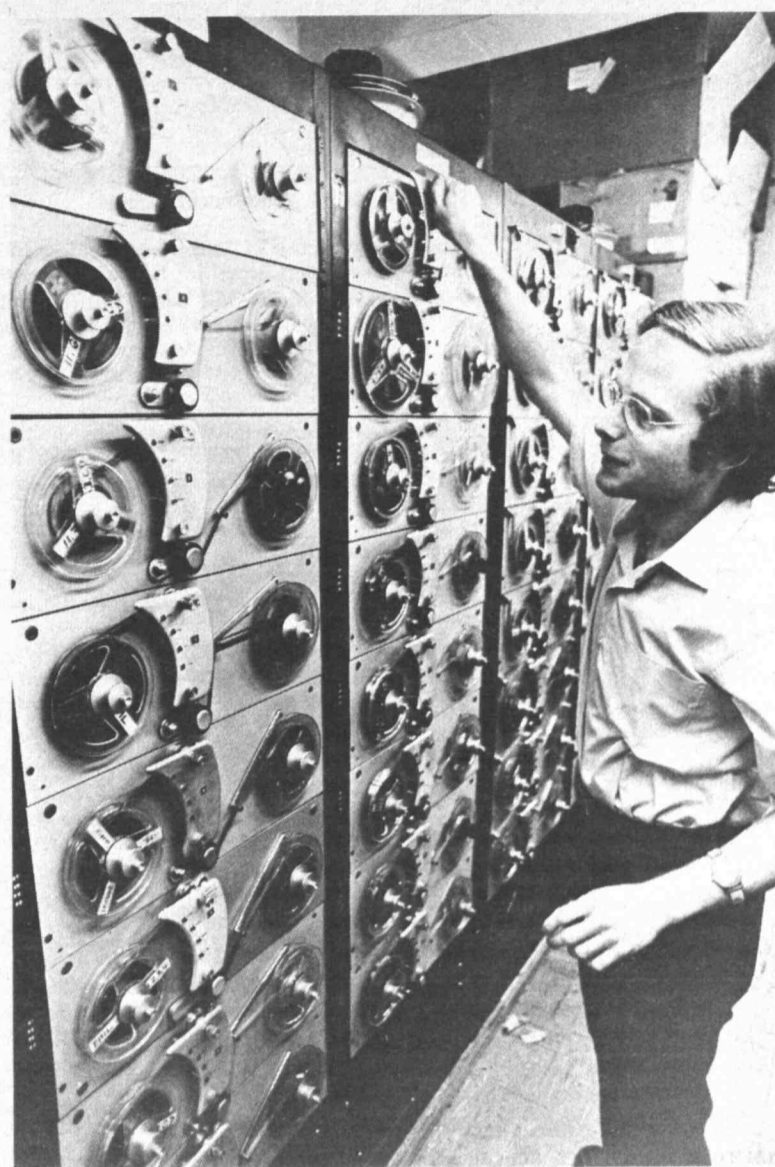
and legends on the walls of his shabby room. Presented in a series of theatrical sketches based on these drawings, "Macrune's Guevara" contains songs, dances and skits in the form of a revue.

Ticket reservations at \$2.25 are available at the Kresge Box Office or at Ext. 4720.

Teams Needed for Softball

The MIT Community Softball League is looking for new teams and players for the summer season starting June 12.

The league plays Mondays through Thursdays at 5:30pm on Briggs Field. Each team plays once or twice a week depending on league size. Playoffs are held in mid-August.



In the language lab.

-Photo by Margo Foote

Cycling Race

An intramural cycling race is scheduled for Sunday, May 7, beginning at 11am. All students and faculty interested in joining the race should sign up in Room W32-123. For more information, call Ext. 2925.

Two Women to Address NY Academy

Two MIT women will speak on May 11 at a New York academy of Science sponsored Conference on Successful Women in the Sciences: An Analysis of Determinants.

Professor Mildred Dresselhaus of the electrical engineering department will speak on "My Life Experiences as an Electrical Engineer." She has been a professor at the Institute for the past five years.

"Family Constraints on Women's Work" will be the topic for Dr. Lotte Bailyn, who is a senior lecturer and research assistant in the management department.

Study Proposes S/VTOL for Public Transit

Short and vertical take-off and landing passenger aircraft operating from local or central city airports are within the reach of present-day technology and "hold great potential in satisfying society's needs for...public travel over distances between five and 500 miles," according to a new air transportation study by the MIT Flight Transportation Laboratory.

One key to such systems is a new kind of fan jet engine that can reduce by 90 percent the ground area affected by STOL and VTOL noise.

The study was carried out last summer during a workshop held at Waterville Valley, N.H., sponsored by the National Aeronautics and Space Administration. Participants included some 150 specialists from throughout the US, Canada and the United Kingdom.

Findings, edited by Robert W. Simpson, professor of aeronautics

and astronautics and director of the Laboratory, were recently issued in report form and serve, in part, as the basis for an article by Henry B. Faulkner, a Laboratory staff member, which appears in the May issue of *Technology Review*, MIT's national magazine.

The report lists a series of advantages for STOL and VTOL transportation so impressive that "air transport is only at the beginning...of a comprehensive stage of network development." Aircraft are far faster than any other form of transportation, the report said. STOL and VTOL aircraft, moreover, require no investment in construction and maintenance of track, highway or guideway and they operate "with minimum damage and disfigurement of the environment."

In sum, the report said, "aviation is potentially the fastest, cleanest and quietest short-haul

transport system which technology has so far evolved."

The study team cited four technical problems which must be solved before short-haul aircraft capable of operating from small airports can be acceptable to airlines, passengers and residents of cities.

Air traffic control, the report said, must be improved to prevent delays and deal with the larger number of operations which short-haul service will generate.

Secondly, automated passenger-handling systems must be developed to serve the larger number of air travellers arriving and departing on short-haul flights.

In addition, the stability and control characteristics of short-take-off aircraft and helicopters must be improved.

And finally, noise levels of aircraft designed to operate into city-center airports must be reduced.

Methods to deal with the first two of these problems, Faulkner said, are well understood.

Stability and control are more difficult, however. As larger wings are used (to shorten required runway lengths) short-take-off planes become harder for pilots to control and more sensitive to air turbulence in cruising flight. Nevertheless, with today's state-of-the-art, automatic ride-smoothing systems can be developed that sense and correct for aircraft motion before it becomes disturbing to passengers.

The key to the study group's optimism is the evidence it found that new technological developments can "greatly reduce" the noise generated by jet engines used to power short-take-off aircraft and helicopters. Noise in jet engines, Faulkner said, is chiefly caused by the speed of the turbine blades which drive air through the

140 Aid Dialing Changes

More than 140 MIT people have signed up to act as counselors to help the Institute shift to the CENTREX phone system next August.

According to Morton Berlan, communications officer in Physical Plant, New England Telephone Company representatives will begin on-campus training sessions for the counselors the first week in June. Aim of the sessions will be to acquaint the counselors with CENTREX services so that they may, in turn, help those in their departments, laboratories, and offices adjust easily to the new system.

The training sessions will last a maximum of a day and take in groups of about 30 counselors. More sessions will be scheduled if needed to accommodate additional counselors who are still signing up.

Mr. Berlan also reports that 90 percent of the cable for the new system is now installed and NET is beginning to test the MIT CENTREX equipment. New operator consoles for MIT operators are now in position; operator training for the new system will begin July 1. NET plans to have the repaving of Vassar Street completed by the end of May.

The big switch is scheduled for mid-night, August 12, a Saturday.

Dames Hold Craft Sale

The Technology Dames will hold their Spring Crafts Sale on Friday in the lobby of Building 10.

The sale, which will be held from 8am to 4pm, will feature needlework, artwork, gift items and foods.

Included in the needlework will be shifts, nightgowns, baby items, neckties, knitted, embroidered and crocheted items, wall hangings and toys.

Original paintings, collages, batik, decoupage, sketches, note cards, paper mache, mobiles, stained glass, pottery, ceramics, and jewelry will be sold, as well as gift items including bulletin boards, paper flowers, flower pots and home-grown plants.

Bread, cakes, cookies, candy, cupcakes and sandwiches will be sold in addition to the arts and crafts.

engine. A new, quiet fan-jet engine-the "Q-fan"-uses larger blades which move more slowly. Installed in a 70- to 100-passenger aircraft of conventional design--which the study group believes possible by 1976 or 1977--the aircraft's engine could reduce by more than 90 percent the area under and around the aircraft's landing site subjected to noise levels as high as those now permitted for the newest US commercial aircraft.

"Acceptable reduced-take-off (RTOL) transports can now be designed for runways as short as 2,500 feet," Faulkner said. He estimated that additional technological development will make possible landings in as little as 1,500 feet before 1980.

The study group called these low-noise-level engine developments "of vital importance," and urged "immediate and full-scale development of flight test engines...to validate the forecast."

THE INSTITUTE CALENDAR

May 3
through
May 12

Events of Special Interest

Abortion Action Week*

Information booth: through Friday, May 5, 10am-2pm, Bldg 10 Lobby. Speaker: Dr. David Chapin, "Abortion and Contraception," Thursday, May 4, 8pm, McCormick Green Living Rm.

Dames Craft Sale*

Paintings, prints, pottery and other homemade crafts. Friday, May 5, 8am-4pm, Bldg 10 Lobby.

Senior House Cage Sale***

Sale of unclaimed property in the Senior House Cages. Persons who have belongings there should collect them. Saturday, May 6, 7pm.

Karl Taylor Compton Lectures will present **Lord Solly Zuckerman**, former scientific advisor to the British government in two lectures under the general title **Science Sense and Society**. The first lecture is "External Stresses and Strains," will be Monday, May 8 at 8pm in Kresge. The second lecture, "Internal Stresses and Strains," will be Thursday, May 11 at 8pm in Rm 26-100. Both are open to the public free of charge. In addition, Lord Zuckerman will meet informally with members of the community on Wednesday, May 10 from 2-4pm in Rm 35-252.

The United Nations and World Peace*

U Thant, former Secretary-General of the United Nations. Lecture Series on World Peace. Tuesday, May 9, 4pm, Kresge. Broadcast live on WTBS (88.1 FM).

Seminars and Lectures

Wednesday, May 3

The Generation and Interpretation of EHMO Results

Prof. G. V. Gibbs, Dept of Geological Sciences, Virginia Polytechnic Institute and State University. Earth and Planetary Sciences Special Seminar. 10am, Rm 54-811.

Optical Guided Waves*

Prof. E. M. Conwell, Abby Rockefeller Mauze Visiting Professor in Electrical Engineering. Mauze Lecture. 12n-1pm, Rm 3-133.

Transportation and International Markets: A Case Example*

Paul Roberts, Harvard University. Civil Engineering Transportation Division Seminar, Rm 1-146, 3-4:30pm.

Role of Hormones and Nutrition in Muscle Growth*

Dr. Donald B. Cheek, Johns Hopkins Hospital. Oral Science Seminar. 3-5pm, Rm E18-301.

High Resolution Radar Topography of Mars**

Prof. Gordon H. Pettengil, earth and planetary sciences. Lincoln Lab Lecture. 3:30pm, Lincoln Lab.

To be announced*

Prof. T. D. Lee, Columbia University. Joint Theoretical Seminar, Rm 6-120, 4pm, tea in Rm 26-110, 3:30pm.

What A Nuclear Engineer Should Know about LMFBR Materials*

P. G. Shewmon, director, Materials Science Division, Argonne National Laboratory. Nuclear Engineering Seminar. 3:30pm, Rm NW12-222. Coffee, 3pm.

An Interpretation of Tetrahedral Bond Length and Angle Variations in Silicates and Germanates

Prof. G. V. Gibbs, Dept of Geological Sciences, Virginia Polytechnic Institute and State University. Earth and Planetary Sciences Colloquium. 4pm, Rm 54-100.

Water Power in the Century of the Steam Engine*

Prof. Louis C. Hunter. History of Technology Seminar. 4pm, Rm 14E-304.

Mathematical Modeling of Estuaries—The State of the Art*

Dr. G. T. Orlob, president, Water Resources Engineers. Civil Engineering Water Resources and Hydrodynamics Seminar. 4-5pm, Rm 48-316. Coffee, 3:30pm, Rm 48-410.

Reliability Optimization of Isostatic Structures

Prof. Emilio Rosenblueth, Institute de Ingeniering, University of Mexico. Civil Engineering Seminar Series on Structural Safety Theory. 4-5pm, Rm 1-353. Coffee, 3:30pm.

Equilibrium with Transaction Cost and Money

Mordecai Kurz. Harvard-MIT Mathematical Economics Seminar. 4-6pm, Rm E52-394.

Thursday, May 4

Convection in Crystal Growth

Dr. John Carruthers, Bell Telephone Laboratories. Metallurgy and Materials Science Special Seminar. 12n-2pm, Chipman Rm, Rm 8-314.

Clean Energy Conversion Process*

Prof. J. B. Howard, chemical engineering. Thermodynamics Seminar, Rm 3-343, 4pm.

Pion-nucleus Scattering*

Dr. J. P. Stroot, CERN. Special Medium-Energy Seminar, Kolker Room, Rm 26-414, 4pm, tea at 3:45pm.

Recent Advances in Integer Programming*

Dr. Ellis Johnson, IBM Research Center. Operations Research Center Seminar. 4pm, Rm 24-307. Refreshments following, Rm 24-219.

Damping of Beams Vibrating in Water*

Dr. William K. Blake, Acoustics and Vibration Dept, Naval Ship Research and Development Center. Interdepartmental Acoustics Seminar. 4pm, Rm 5-134. Coffee, 3:30pm, Rm 1-114.

The Case of the Premature Sub-Electron

Prof. Gerald Holton, Harvard University. Physics Colloquium. 4:30pm, Rm 26-100. Tea, 4pm.

Urban Dynamics**

Prof. J. F. Collins, management. ASME Student Section meeting. 5pm, Rm 10-105. Refreshments, 4pm.

Introductory Lecture on Transcendental Meditation*

Fred Ponemann, teacher of meditation. Student International Meditation Society, Rm 3-133, 7:30pm.

Friday, May 5

Producing School Science Materials through Community Industry*

Dr. Douglas M. Lapp, director, Instructional Materials Processing Center, Fairfax County Public Schools, Virginia. ERC Colloquium. 12n, Rm 6-120.

Stochastic Analysis of Slope Stability*

Prof. Emilio Rosenblueth, University of Mexico. Civil Engineering Center Development Chair Seminar. 2pm, Rm 1-350.

Chemical Engineering Doctoral Seminars*

J. Donahue, "Selectivity of Chemical Reaction Accompanied by Mass Transfer and the Influence of Marangoni Convection," 2pm; **S. Trindade**, "Studies on Magnetic Cleaning of Coals," 3pm. Rm 10-105.

Problems in Materials Processing

Prof. Nam P. Suh, mechanical engineering. Mechanical Engineering Seminar. 3pm, Rm 3-270. Coffee, 4pm, Rm 1-114.

Nixon's Trip to China and the Aftermath*

Stanley Karnow, China correspondent for the Washington Post. Center for International Studies Seminar, Rm E52-161, 3-5pm.

Experiments with CEA Synchrotron Radiation*

Prof. Paul Horowitz, Harvard University and **Dr. Dean Eastman**, IBM. CEA Seminar, CEA Conference Rm, 3:30pm.

Laser-Plasma Interactions and Their Possible Fusion Applications*

Prof. E. V. George, physics. RLE Plasma Dynamics Seminar. 4pm, Rm 26-214.

Monday, May 8

Design and Simulation of Pneumatic Transmission Systems for Transient and Frequency Modulated Signals*

Richard S. Sidell, mechanical engineering. Doctoral thesis presentation, Rm 1-146, 3pm.

Nuclear Engineering Doctoral Seminars*

T. Postol, "Some Comments on the Thermodynamics of Xenon in Light of Progress in Non-Equilibrium Statistical Theory"; **G. Ducat**, "Evaluation of the Parfait Blanket Concept for LMFBR Core Design"; **R. Eng**, "Short Range Nuclear Fuel Optimization." 3-5pm, Rm NW12-222.

A Multivariate Regression Model for Stochastic Hydrology*

Dario Valencia, civil engineering. Civil Engineering Water Resources and Hydrodynamics Seminar. 4-5pm, Rm 48-316. Coffee, 3:30pm, Rm 48-410.

V₃Ga and Other High Field Superconductors Being Developed in Japan

Dr. K. Tachikawa, National Research Institute for Metals, Tokyo. National Magnet Lab Seminar. 4:15pm, 2nd Floor Conference Rm. Tea & coffee, 4pm.

Problems in the Development of a Biologic Interface*

Dr. William Bernhard, Harvard Medical School. Harvard-MIT Bio-Materials Seminar. 4:30pm, Rm B2-207, 25 Shattuck St, Boston.

Justice and Judaism*

Kivie Kaplan, national president of the NAACP. Hillel Lecture, McCormick Country Kitchen, 7:30pm.

Tuesday, May 9

A Discrete Separation Principle with a Stochastic Terminal Constraint*

Dr. David Stallard, Missile Systems Division, Raytheon Company. Aeronautics and Astronautics Seminar. 4pm, Rm 35-225. Coffee, 3:30pm, Rm 33-206.

Decision Analysis Practice: A Survey*

Dr. Arnold B. Pollard, Stanford Research Institute. Operations Research Center Seminar. 4pm, Rm 24-307. Refreshments following, Rm 24-219.

Ion Beam Methods for Material and Device Processing

E. G. Spencer, Bell Telephone Labs. Joint Seminar, Electrical Engineering Dept and Center for Materials Science and Engineering. 4pm, Rm 3-133. Coffee, 3:30pm, Rm 10-105.

Coastal Resource Management: Biological Aspects*

W. R. Patterson, consultant, New England Aquarium. Ocean Engineering Seminar. 4pm, Rm 3-270. Coffee, 3:30pm, Rm 5-314.

How I Ought to Teach Physics**

Prof. E. M. Purcell, Harvard University. Society of Physics Students informal discussion, Student Center Rm 489, 7:30pm.

Wednesday, May 10

Adaptive Dual Control of Stochastic Systems*

Dr. Edison Tse, senior research engineer, Systems Control, Inc. Decision and Control Sciences Group Seminar, Rm 37-212, 1pm.

To be announced*

Prof. Richard deNeufville, civil engineering. Civil Engineering Transportation Division Seminar, Rm 1-146, 3-4:30pm.

Progress in Fluoridation

David B. Ast, D.D.S., New York State Department of Health. Oral Science Seminar. 3-5pm, Rm E18-301.

Size, Productivity and Returns-to-Scale in Traditional Agriculture

Pranab K. Bardhan. Harvard-MIT Econometrics Seminar. 4-6pm, Sever 32, Harvard University.

High Frequency Specific Heat Measurements Resurrected

Dr. At. T. Skjeltorp, Dept of Engineering and Applied Science, Yale University. National Magnet Lab Seminar. 4:15pm, 2nd Floor Conference Rm, National Magnet Lab. Tea & coffee, 4pm.

Thursday, May 11

Answering Questions for Lunar Geologists*

William A. Woods, Artificial Intelligence Group, Bolt, Beranek and Newman. Project Intrex Seminar, 3:30pm, Rm 37-252, coffee 3pm.

Nuclear Democracy and Baryon Number

Prof. Geoffrey F. Chew, University of California, Berkeley. Physics Colloquium, Rm 26-100, 4:30, tea in Rm 26-110, 4pm.

Friday, May 12

Fundamental Behavior of Grinding Wheels*

James Kirk, mechanical engineering. Doctoral thesis presentation. 10:30am, Rm 1-133.

Optical Guided Waves*

Prof. E. M. Conwell, Abby Rockefeller Mauze Visiting Professor in Electrical Engineering. Mauze Lecture Series. 12n, Rm 3-343.

Is There an Optimum Level of Population

Prof. S. Fred Singer, Environmental Science Dept, University of Virginia. Mechanical Engineering Seminar. 3pm, Rm 3-270. Coffee, 4pm, Rm 1-114.

Chemical Engineering Doctoral Seminars*

G. Chiu, "Diffusion of Liquid Hydrocarbons in Molecular Sieves"; **S. Slater**, "Nitric Oxide Formation in the Combustion of Nitrogen Containing Hydrocarbons," 3pm. Rm 10-105.

Low Shear Magnetohydrodynamic Stability

Prof. H. Grad, New York University. RLE Plasma Dynamics Seminar. 4pm, Rm 26-214.

Women's Forum

Bi-Weekly and Administrative Staff

Continued discussion of suggested proposal. Thursday, May 12n-1pm, Rm 10-105.

Faculty and Research Staff

Friday, May 5, 1-2pm, Rm 10-310.

Forum

Mrs. Alice Smith, dean of the Radcliffe Institute, will discuss the Radcliffe Institute's experience in continuing education.

Student Meetings

Student Information Processing Board Meeting

Every Monday, 7:30pm, Rm 39-200.

Thursday Staff Meeting**

Every Thursday, 8pm, 2nd floor, Walker.

Technique Staff Meeting

Every Saturday, 11am, Student Center Rm 457.

ERGO Staff Meeting

Every Sunday, 6pm, Student Center Rm 443.

MIT Club Notes

Alpha Phi Omega**

Meeting. Wednesday, May 3, 7:30pm, Student Center Rm 407.

Scuba Club

Pool session. Wednesday, May 3, 8pm, Alumni Pool.

Flying Club*

Meeting. Thursday, May 4, 7:30pm, Student Center Rm 473.

Scuba Club Film Night*

"Twilight Reef." Wednesday, May 10, 8pm, Rm 20E-017.

MIT Club of Boston***

Director of Athletics **Ross H. Smith** will discuss "Athletes and Athletics at MIT." Thursday, May 11, 12:15-1:30pm, Aquarius Restaurant, 100 Atlantic Ave, Boston. Luncheon, \$3.50.

Classical Guitar Society**

Concert guitarist **Hugh Geoghegan** is available for private instructions for intermediate and advanced students. Call Vo Ta Ha 661-0297.

Baker House SPAZ Jogging Club**

Daily, 10:45pm, Baker 2nd Floor West.

Unicycle Club*

Every Sunday, 3pm, in front of Student Center. Beginners welcome. Call Andy Rubel, X3161.

Hobby Shop**

Open weekdays, 10am-4:30pm, duPont Gym basement. Fee: \$6 for students, \$6/term or \$10/year; community, \$15/year. Call X434.

MIT/DL Duplicate Bridge Club**

Every Sunday, 2:30pm, Walker Blue Rm. Every Tuesday, 6pm, Lobdell.

Riddlywinks Association*
Every Monday, 8-11:15pm, Student Center Rm 491.

Boating Association**
First and third Mondays every month. 7:30pm, Student Center Rm 473.

Badminton Club**
Every Monday, Wednesday, Friday, 5pm; every Saturday, 1pm. duPont Gym Exercise Rm. Beginners welcome.

Badminton Club*
Every Monday, Thursday, 5pm, Student Center Rm 473.

Nautical Association**
Basic Sailing Shore School, repeated every Monday and Thursday throughout the spring, 5:15pm, Sailing Pavilion, non-members welcome.

Fencing Club**
Every Tuesday, 6-9pm, duPont Fencing Rm.

Chess Club**
Every Tuesday, Wednesday, Thursday, 5-6:30pm, Kresge. New members, especially tenors, welcome. Call Cyril Draffin, 247-8691.

Classical Guitar Society**
Classical guitar classes, group or private. Every Tuesday and Thursday, 5-8pm, Rms 1-132, 1-134, 1-136. Anyone interested in lessons, call Vo Ta Han, 661-0297.

Rugby Club
Practice. Every Tuesday and Thursday, 5pm, Briggs Field.

Urban Vehicle Design Competition
Volunteer meetings. Every Wednesday, 3pm, Rm E40-250.

Table Tennis Club***
Practice session, every Wednesday, 7:30-10:30pm, T-Club Lounge, duPont.

Science Fiction Society*
Every Friday, 5pm, Rm 1-236.

Student Homophile League*
Meeting and mixer meets Fridays, 7:30pm, Mission Church, 33 Bowdoin St, Boston. For gay help (anonymous) at MIT, call the student gay tutor, 492-7871 anytime.

CBL Duplicate Bridge*†
Bridge Club. Every Saturday, 1:30pm, Student Center Rm 473. Members, free; non-members, 75 cents.

Chess Club**
Every Saturday and Sunday, 1:30-5:30pm, Student Center Rm 491.

May Social Events

Experimental Coffeeshouse*
Coffee, tea, snacks, music, games, people, pictures, slides, etc. Daily through Sunday, May 14, open 24 hours/day. Student Center 2nd floor Center Lounge. Free.

Society of Sigma Xi**
Informal coffee hour. 4-5pm, Student Center Rm 407. Thursday, May 4, Prof. S. Miller, host.

Muddy Charles Pub**
Join your friends at the Muddy Charles Pub, 110 Walker, daily 1:30am-7:30pm. Call X2158.

Friday Afternoon Club**
Music, conversation and all the cold draft Budweiser you can drink. Featuring folk singer Rich Holloway. Every Friday, 5:30pm, Ashdown basement Games Rm. Admission: men \$1, women 50 cents. Must be over 21.

Movies

The Wild Child
Humanities Film Series. Wednesday, May 3, 6pm and 8:30pm, Rm 10-250. Free.

Magnetohydrodynamics and Rarefied Gas Dynamics
Fluid Mechanics Film Series. Thursday, May 4, and Monday, May 8, 5pm, Rm 3-270.

Lord of the Flies
Humanities Film Series. Thursday, May 4, 6pm and 8:30pm, Rm 10-250. Free.

Take Out and The Women's Film
Humanities Film Series. Friday, May 5, 2pm, Rm 14N-0615. Free.

Johnny Got His Gun**
SC. Friday, May 5, 7pm and 10pm, Rm 26-100. Tickets 50 cents. Must show ID.

Ballou**
Student Center Committee. Friday, May 5 (Saturday morning), 12:30am, Sala de Puerto Rico. Free.

The Devils**
SC. Saturday, May 6, 7pm and 10pm, Rm 26-100. Tickets 50 cents. Must show ID.

Big Hand for the Little Lady*
SC. Sunday, May 7, 8pm, Rm 10-250. Tickets 50 cents.

Black Soup
Humanities Film Series. Monday, May 8, 7pm, Rm 26-100. Free.

Anatomy of A Marriage, Part 1: My Nights with Françoise
Humanities Film Series. Wednesday, May 10, 2pm, Rm 14N-0615. Free.

Strangelove
Humanities Film Series. Wednesday, May 10, 6pm, Rm 26-100. Free.

The Misfits
Humanities Film Series. Thursday, May 11, 6pm, Rm 10-250. Free.

Anatomy of A Marriage, Part 2: My Days with Jean-Marc
Humanities Film Series. Friday, May 12, 2pm, Rm 14N-0615. Free.

Summer of 42**
LSC. Friday, May 12, 7pm and 10pm, Rm 26-100. Tickets 50 cents. Must show ID.

Wait Until Dark**
Student Center Committee. Friday (Saturday morning), May 12, 12:30am, Sala de Puerto Rico. Free.

Music

A Spring Festival of Music*
Concert by the Fine Arts String Quartet, Wednesday, May 3. Bach's St. John Passion performed by the Choral Society and Glee Club with Klaus Liepmann conducting, Saturday, May 6. All start at 7:30pm in Kresge. Free.

Dance

Folk Dance Club*
International folk dancing. Every Sunday, 7:30-11pm, Sala de Puerto Rico (exceptions to be posted).

Modern Dance Technique Class**
Elementary/Intermediate. Every Monday, Wednesday, Friday, 5:15pm. Every Sunday, 1pm. McCormick Gym.

Folk Dance Club*
Balkan folk dancing. Every Tuesday, 7:30-11pm, Student Center Rm 407.

Tech Squares*
Every Tuesday, 8-11pm, Rm 10-105. Call dorm X0888 or 492-5453.

Folk Dance Club*
Israeli folk dancing. Every Thursday, 7:30-10pm, duPont Gym T-Club Lounge.

Friday Afternoon Dance Break*
International folk dancing on the Kresge Oval, every Friday (weather permitting), 12:30-1:30pm.

Exhibitions

Klaus Liepmann Retrospective*
Exhibition of posters and programs illustrating the history of music at MIT, honoring Klaus Liepmann, director of music. Hayden Corridor Gallery, April 28 through May 22.

Autographed Music Scores
Exhibition of autographed musical scores in honor of Klaus Liepmann and the Choral Society. Music Library (Rm 14E-109) through the summer.

Graduate Show*
Photographs taken by students enrolled in Minor White's graduate photography course. Creative Photography Gallery through May. Open daily 12n-7pm.

To Look on Nature*
Exhibition of 19th Century landscape painting of France, England, America, Germany, Holland, Italy and Spain. Hayden Gallery, April 7 through May 8.

Hart Nautical Museum*
Exhibits include "Naval Undersea Research and Development Center," and "The Art of Rigging." Bldg 5, first floor.

Athletics

JV/F Lacrosse*
Milton Academy. Wednesday, May 3, 3pm, Briggs Field.

JV/F Baseball*
Northeastern. Wednesday, May 3, 4pm, Briggs Field.

Lightweight Crew*
Tabor Academy. Wednesday, May 3, 4pm and 4:30pm, Charles River Basin.

JV/F Baseball*
Emerson. Saturday, May 6, 2pm, Briggs Field.

Varsity Lacrosse*
Connecticut. Saturday, May 6, 2pm, Briggs Field.

Women's Sailing*
Jerry Reed Trophy, New England Championships. Saturday and Sunday, May 6-7, Sailing Pavilion.

Varsity Sailing*
Coast Guard Bowl. Saturday, May 6, Sailing Pavilion.

JV/F Baseball*
Tufts. Monday, May 8, 4pm, Briggs Field.

Golf*
Brandeis. Tuesday, May 9, 12:30pm, Crystal Springs Country Club, Haverhill.

JV/F Baseball*
Phillips Exeter. Wednesday, May 10, 3:30pm, Briggs Field.

Freshman Tennis*
Lawrence Academy. Friday, May 12, 3pm, duPont Tennis Courts.

Religious Services and Activities

The Chapel is open for private meditation from 7am to 11pm every day.

Ascension Thursday Masses*
Thursday, May 11, 8am, 12:05pm, 5:05pm, Chapel.

Roman Catholic Mass*
Every Sunday, 9:15am, 12:15pm, 5:15pm, Chapel.

Christian Worship Service*
Every Sunday, 11am, Chapel.

Christian Discussion Group*
Bible study and discussion of Christianity today. Every Sunday, 9:30-11am, McCormick Seminar Rm A. Call Ron Gamble, X6712 or 547-4279.

Hillel Religious Services*
Monday-Friday, 8am, 7-102; Fridays, 7:30pm, Chapel; Saturdays, 9:30am, Chapel.

Divine Light Mission*
Discourses on the direct experience of Truth given by Guru Maharaj Ji. Every Monday, Wednesday, Friday, 7:30pm, Rm 4-145. Call 369-1603 (Concord).

Ananda Marga Yoga Society*
Group meditations. Every Tuesday, 5pm, Rm 14E-303. For information, call X3664.

Christian Science Organization*
Meeting includes testimony of healings. Every Tuesday, 7:15pm, Rm 8-314.

Latter Day Saints Student Association**
Religious seminars. Every Tuesday, 8am, Student Center Rm 473.

Christian Bible Discussion Groups*
Every Wednesday, 12:30pm, Rm 4-343; every Thursday, 12:30pm, Rm 20B-222. Call Prof. Schimmel, X6739, or Ralph Burgess, X2415.

Christians for Dinner*
United Christian Fellowship. Every Thursday, 6-7pm, Walker Dining Hall (under sign of the fish).

Praying, Singing, Sharing Meeting*
United Christian Fellowship. Every Thursday, 7-8pm, East Campus Lounge.

Islamic Society Prayers*
Every Friday, 1pm, Kresge Rehearsal Rm B.

Vedanta Services*
Every Friday, 5:15pm, Chapel; discussion hour, 6pm, Ashdown Dining Hall.

College Life Campus Crusade for Christ*
Brothers and sisters for fellowship and a time of teaching from the Open Book. Every Friday, 7-9pm, Rm 1-132.

Islamic Society Discussion*
Isha prayers followed by discussion of various aspects of the Islamic way of life. Every Friday, 7:30pm, Student Center Rm 473. Coffee and doughnuts served.

Free Draft Counselling*
Hillel, 312 Memorial Drive, X2982. Call or visit 10am-5pm.

Announcements

Wellesley-MIT Exchange
Applications for the Fall 1972 cross-registration program are due Friday, May 5. Applications and information are available in Rm 7-101, X1668.

*Open to the Public
**Open to the MIT Community Only
***Open to Members Only
†Freshmen encouraged to attend

Send notices for May 10 through May 19 to the Calendar Editor, Room 5-111, Ext. 3279, by noon Friday, May 5.

Campus Crime Is Growing at MIT and Other Colleges

MIT, like almost every other university, has a growing problem with campus crime.

"Petty thefts have risen plague-like in almost every college and university across the country," according to Captain James Olivieri of the Campus Patrol.

"But only within the last three years has the Institute come to face serious crimes such as assault and armed robbery, which our surrounding cities have been experiencing for many years. So it is important for campus security that everyone in the community be aware of the crime problem."

In 1968 there were three robberies on campus; in 1969, seven; in 1970, ten; and a jump to 22 in 1971. So far in 1972 the Campus Patrol has investigated 13 cases of assault and robbery in only the first four months.

"It is obvious from the numbers that we can project another increase in the total for the year," Captain Olivieri pointed out.

"We have been fortunate in one respect so far," he continued. "There have been no serious injuries in these robberies. Much of this is because members of the community have heeded our warning not to resist armed robbery attempts. Of the 13 reported so far this year, ten have been armed."

In 1971 weapons uncovered by arresting officers included 12 knives, three guns and one set of brass knuckles. Many attempted assaults were made on members of the Campus Patrol while they were engaged in making arrests. One subject recently arrested by the Patrol for an offense on campus is now also being held on other charges of alleged bank robbery and murder.

Captain Olivieri outlined precautions members of the community should take to help curtail these crimes:

"Do not carry large sums of money around the campus during night-time hours.

"Shun dark or isolated places."

"Be alert to conditions in which a mugging is conceivable; clear evidence of alertness may discourage an assault.

"Notify Campus Patrol of any crime. Quick reporting is of extreme importance in our efforts to apprehend the culprit," Captain Olivieri stressed.

The theft rate is also up on all levels: personal property, Institute property and automobiles.

"Thefts of wallets have gone from 73 in 1968 to 109 in 1971," Captain Olivieri reported. "Secretaries are the most frequent victims. They often leave their purses in a typewriter well or a drawer in their desks. Any experienced thief knows exactly where to look and can remove a wallet within a matter of seconds.

"We recommend that purses be kept in a locked place and most offices have facilities for some kind of security. Carelessness is another important factor. Occasionally a secretary will step out of her office for just a minute or two, leaving it open and unattended. That's plenty of time for a thief to act.

"Recently after a rash of these thefts, we circulated a bulletin alerting the community to the problem, and there has been a marked reduction in the number of complaints since then. However, just the other day, a wallet was taken from a purse sitting right beneath the warning note posted on the wall.

The Campus Patrol recovers about 80 percent of stolen wallets. Often they are tossed into trash cans once the money has been removed. Credit cards and other documents are rarely taken, Captain Olivieri said. But the arrest record for these crimes is

low.

Stolen Institute property is a growing problem too. All kinds of equipment is taken, from typewriters and adding machines to oscilloscopes and personal tools. The value of the stolen property rose from \$18,000 in 1970 to \$24,000 last year.

Typewriters seem to be particularly vulnerable, Captain Olivieri pointed out. In 1970, 16 were taken. There was a drop to 13 in 1971, but already 13 have been stolen this year.

"But now there is hope that we can prevent some of these thefts," Captain Olivieri said. "Recently a new kind of locking bolt, the Bolen maximum security lock has become available. 'It will work for all typewriters and for many other pieces of equipment as well. Physical Plant has stocked them, and will install them for any department upon request.

"Another method of guarding against theft is embossing valuable items, a system that has been used effectively in several cities," Captain Olivieri continued. "Using an embosser, a person inscribes some kind of identification--frequently his Social Security number--right on the article. The article then becomes much less attractive to a thief because it is obviously stolen property when he tries to sell it.

"This program is called 'Operation Identification' and has gained widespread publicity in other areas of the country. Excellent results are possible. We hope to interest the departments in this program also.

"We have bought two embossers and are trying them in a pilot project at Westgate. The residents there have shown considerable interest in the program. If it is successful we will probably expand it, at least to the other residences. "The one bright area in the

Spring at Last



Spring at Last--The first gentle rays of the spring sun were a call to many to stretch out and warm up. The place does not really seem to matter--as long as you could gather in the rays. The banister in front of the main entrance allows a lounge to also keep an eye on things.

—Photo by Margo Foote

picture is a drop in theft in the dormitories. There was \$54,000 worth of material stolen in 1970 and only \$14,000 worth in 1971. That's still too much, of course, but the decrease is encouraging.

"The students themselves deserve great credit for the lowered rate," Captain Olivieri said. "We circulated bulletins requesting them to be very careful about locking their rooms, and to be alert to strangers in their buildings. Much of our success in apprehending thieves lies in the good observations and reporting of the students."

Turning to another subject, Captain Olivieri reported that 99 cars were stolen in 1969, 170 in 1970 and 168 in 1971. "We find about 50 stolen cars a year on Institute property.

"Modern technology has produced many ways to protect against car theft. We have evaluated 19 anti-theft devices for cars and are happy to discuss our findings with any Institute drivers who are interested."

The Campus Patrol was created in 1957 with a force of 17 men. There are now 38 patrolmen, five sergeants, one lieutenant and Captain Olivieri under the command of Chief Norman Sidney. Campus Patrol handles approximately 1,500 recorded complaints each year. Last year members of the force made 80 arrests in the course of providing security and protection for the community.

"But a large part of the Campus Patrol work is not devoted to the pursuit of criminals," Captain Olivieri said. "It has more to do with the equally difficult task of getting along with people, mediating in times of crisis, using authority with wisdom, discretion and without prejudice."

In closing, Captain Olivieri pointed out that "improved security is everyone's business and rests on our constant attention to what might seem minor or trivial details."

Summer Session registration material must be returned to the Registrar's Office, Room E19-335, by Wednesday, May 10.

Obituaries

Duncan Linsley

Duncan Robertson Linsley, 70 life member emeritus of the MIT Corporation, died in Fairfield, Connecticut on Saturday, April 29.

Mr. Linsley was director of the First Boston Corporation of New York.

He received the S.B. degree from MIT in 1922. He served as Alumni Term Member of the Corporation from 1942-47 and was elected to life membership in 1951; he became Life Member Emeritus in 1966.

During his more than 25 years of service as a Corporation Member, Mr. Linsley served on several standing committees, including the Investment, Development and Membership Committees. He also served as chairman and member of a number of visiting committees, including Student Affairs, Medical, Mathematics, Electrical Engineering, Civil Engineering, Food Technology, Management, Biology and Geology. He was Regional Vice Chairman of the New York Region during the Institute's Development Program from 1949-51.

Mr. Linsley is survived by his wife Julia (Quantance) and a daughter, Julia Williams Linsley. He was the father of the late James Duncan Linsley. Funeral services were to be held today, May 3, in Southport, Connecticut. The family asks that donations be made to the MIT Scholarship Fund.

John Wojtkiewicz

John M. Wojtkiewicz, 63, of Somerville, a former watchman at the Institute, died on April 27 following a long illness.

He joined the Institute in 1954 and worked in Physical Plant until February.

Mr. Wojtkiewicz is survived by his wife Jennie (Gullifa) and two daughters, Patricia Marazzo of Cambridge and Adele Pignone of Somerville. He also leaves a sister, Patricia Amato of Connecticut, and four grandchildren. Funeral services were held Monday, May 1.

Article Praises Symphony Orchestra

The following article, written by Eric McLean, appeared in the Montreal Star on April 18.

Science and engineering have made the international reputation of the Massachusetts Institute of Technology, but the university also has the largest humanities department of its kind in the United States. Interest in music runs so high among the students and faculty that they are able to recruit a full symphony orchestra, with a little help from Wellesley (an affiliated college), and it was this group of enthusiastic musicians who offered a performance in the Salle Claude Champagne on Tuesday, April 18. This was presumably part of a tour of northern New England since they played a few nights before at Dartmouth's Hopkins Centre in Hanover, N.H.

Although most of the players are amateurs, it should be made clear that this was no ordinary amateur group. They lean into the music with a will, and their coordination is very well developed.

The regular conductor of the MIT Symphony is David Epstein, but during his leave of absence the musicians now work under the direction of Robert Freeman, a music historian and pianist, and a member of the faculty of music at MIT. In the April 17th performance he proved an alert and very observant conductor, always in control of the situation.

But perhaps the most remarkable thing about this concert was the program. How many amateur orchestras can you name who would undertake the Bruckner Symphony No. 7? The National Youth Orchestra, perhaps, with the musical resources of the entire country to draw upon; and possibly the orchestra of the international Jeunesses Musicales, with an even greater pool of musicians.

It should be noted, too, that the Bruckner represented the concession to the established repertoire: The other two works on the program were Canadian premieres.

The evening began with a fascinating musical oddity--the first movement of a projected symphony by the eighteen-year-old Claude Debussy. The work was sketched out in piano duet form, and the title page mentions, besides the opening Allegro ben marcato, three other movements, Andante, Air de Ballet, and Final. Only the first movement was discovered in Russia some forty years ago. It was a relic of the summers Debussy spent as the hired piano teacher and duet partner of Nadezhad von Meck, Tchaikovsky's "beloved friend."

The transcription for orchestra heard April 17 was the work of Mark DeVeto, a professor of music at the University of New Hampshire, and a very clever job he has done. No attempt was made

to instill this tuneful and basically simple music with fake Debussyisms which, in any event, could not have existed at the time of composition. DeVeto calls for a conventional mid-nineteenth century orchestra of the kind that Delibes or Gounod might have used. If I found it a little heavy on the winds and brass, this probably had to do with a basic imbalance in the MIT Symphony which lacks a firm cello sound and is short on double-basses.

Perhaps the most successful work on their program was the Variations for Cello and Orchestra which Walter Piston composed seven years ago for Mstislav Rostropovich. Not only did the young musicians seem at home in Piston's spikey but essentially lyrical idiom, but the performance was ennobled by some fine playing from the soloist, Louis Legula, a member of the Boston Symphony Orchestra.

The Bruckner appeared to be all there, but I really feel that such a work is beyond the reach of such an orchestra at this time. They seem to understand its structure, and they played it with great intensity, but it does require surer intonation, a better quality of sound (with more strings), and phrasing that is outlined with greater firmness.

Taken altogether, the MIT Symphony remains an admirable venture and one that must offer great rewards to the participants.

National Academy Elects Six from MIT Faculty



Professor Solow.

Six members of the MIT faculty were elected to membership in the National Academy of Sciences last week.

They were among a group of 75 scholars nationwide who were admitted to the NAS during the Academy's annual membership election. The 75 bring the total Academy membership to 950, of



Professor Whitehead.

whom 74 are from MIT. Four MIT Corporation members also are NAS members. The Academy, with headquarters in Washington, D.C., is one of the nation's most prestigious scientific organizations.

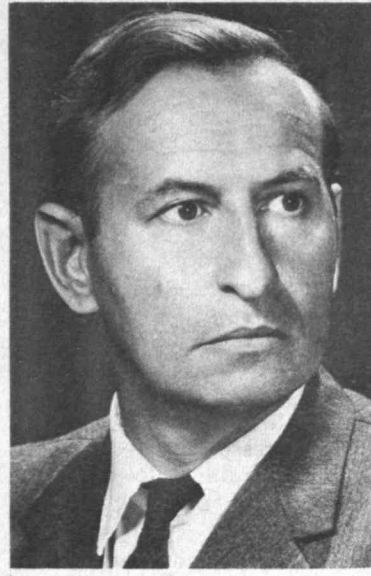
Those elected from MIT include: Noam Avram Chomsky, Ph.D., of Lexington, Ferrari P. Ward



Professor Weinberg.

Professor of Modern Languages and Linguistics in the Department of Foreign Literatures and Linguistics.

Willem van Rensselaer Malkus, Ph.D., of Lexington, professor of applied mathematics in the Department of Mathematics. Professor Malkus is on leave this year.

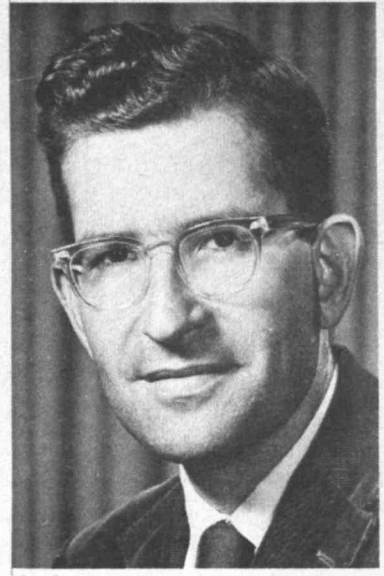


Professor Teuber.

Robert Merton Solow, Ph.D., LL.D., of Concord, professor of economics in the Department of Economics.

Hans-Lukas Teuber, Ph.D., of Arlington, professor of psychology and head of the Department of Psychology.

Steven Weinberg, Ph.D., of Cambridge, professor of physics in



Professor Chomsky.

the Department of Physics.

George William Whitehead, Ph.D., of Arlington, professor of mathematics in the Department of Mathematics.

(Editor's Note: Professor Malkus is on a sabbatical leave and no current photograph was available.)

In Cold Blood

Shelf-life of Blood Prolonged

(The following article is reprinted from the April issue of *Reports on Research*, published by the News Office.)

It was called the Truman Capote experiment, and its aim is to prolong the shelf-life of the stuff of life.

Whole blood, kept in blood banks under refrigeration, remains usable for up to 21 days. This means not only that constant replenishment of hospital blood inventories is required but also that the proper balance of the eight different blood types must be maintained at all times. Recently techniques for freezing the blood's red cells have allowed keeping blood for up to two years, but there has been a question about the lower temperature limits at which blood cells may be frozen reversibly, without, that is, damaging their fragile life-giving power. Now an experiment in the Cryogenic Engineering Laboratory at MIT has taken red cells down to the blood chilling temperature of -272.290°C , less than one degree above absolute zero, and demonstrated that there is no lower limit at which blood can be frozen and survive.

The experiment was conducted by Ernest Cravalho, associate professor of mechanical engineering at MIT, Charles E. Huggins, M.D., lecturer in mechanical engineering at MIT, associate professor of surgery at the Harvard Medical School and clinical director of the blood bank at Massachusetts General Hospital, Kenneth Diller, post-doctoral research fellow, and William Watson, graduate student, both mechanical engineering, MIT. The experiment is part of a large-scale program of research in biomaterials of the recently formed Harvard-MIT Program in Health Sciences and Technology, which involves 33 faculty members of the two universities in 15 separate research projects and which recently received a grant of \$5 million from the National Lung and Heart Institute of the National Institutes of Health.

Freezing blood is no simple matter, for in normal freezing ice forms outside the blood cells increasing the concentration of salts in the extracellular medium, and the cells, reacting to this

change in their environment, begin an osmotic process that increases the concentration of salts inside the cells. When the cells are thawed, and the flow reversed, the suspending medium penetrates the walls of the cell, causing it to swell and burst and, in a process known as hemolysis, release its precious hemoglobin, the oxygen-carrying stuff of life, into the surrounding medium.

Several years ago, Dr. Huggins developed a technique to overcome this difficulty. Collecting blood in an anticoagulant, packing the cells densely together by centrifuging, and adding a solution containing glycerol, glucose, and fructose eliminates all but 2 percent of hemolysis when the cells are thawed. Dr. Huggins was able to obtain for Massachusetts General the first license from the Division of Biologic Standards, National Institutes of Health, for keeping blood up to two years. Huggins reports experimental lifetimes of up to seven years with blood frozen and maintained at -85°C , a freezing temperature chosen for its biological effectiveness and mechanical convenience.

Professor Cravalho teamed up with Dr. Huggins after developing a cryogenic microscope in the MIT Cryogenic Lab which is capable of investigating thermal properties in the world of the extremely small. His long-range research interest is in the possibility of freezing organs for later transplant. "But before freezing entire organs," he says, "it makes sense to see how freezing affects the properties of single cells. Red blood cells happen to be convenient to study, partly because there's already a good deal of data on them and partly because they are easy to obtain."

The researchers report that there appears to be no lower limit to the temperature at which blood may be frozen successfully. "A portion of the samples were held at -85°C to serve as controls," they write. "Additional control samples were held at -196°C and -268.90°C while the remainder were cooled to -272.29°C (0.86 K). After thawing, the cells were transferred aseptically to cellulose dialysis tubing for removal of glycerol by a specially developed three-stage dialysis technique. For samples

frozen to -272.290°C , cumulative hemolysis after glycerolization, freezing, and thawing, was less than 2 percent before, and less than 4 percent after, three-stage dialysis."

The rate at which blood may be frozen is also important. Cravalho, Huggins and their co-researchers, using the Cryogenic Lab's cryomicroscope -- an apparatus unequaled anywhere for its precise temperature control and broad spectrum of cooling rates--observed the formation of intracellular ice in a field of 50 to 100 cells in some 40 separate experiments. They report: "The experimental data define a transition band of cooling rates between -60°C per minute and -170°C per minute. At cooling rates less than -60°C per minute, no intracellular ice was observed. At

cooling rates greater than -170°C per minute, intracellular ice formed in all cells. At cooling rates in the transition range, the incidence of intracellular ice increased as the cooling rate increased."

In a paper just delivered at the 7th Thermophysics Conference of the American Institute of Aeronautics and Astronautics, held in San Antonio, Texas, April 10-12, the research team reported that while "the mechanisms of cellular injury attributable to the presence of intracellular ice have yet to be clearly defined--evidence exists which indicates that damage is a consequence of intracellular freezing."

Considerable problems remain. When and if they are solved, we may have a new meaning for the term "cold-hearted."

U Thant Talk to Be May 9

U Thant, former United Nations secretary general, will deliver the sixth and final lecture in a series on the prospects for world peace on Tuesday, May 9.

The lecture, entitled "The United Nations and World Peace," and originally to have been given April 27, has been rescheduled. It will begin at 4pm in Kresge and is open to the public.

The program, known as the

Lecture

(Continued from page 1)

was appointed additionally to the U.K. cabinet office as Scientific Adviser. From 1966 to 1971 he was Chief Scientific Adviser to the British government, a position similar to that of the Presidential Science Adviser in the United States.

Lord Zuckerman (formerly Sir Solly Zuckerman before being created a baron in 1971) is Professor at Large in the University of East Anglia and a Fellow of University College, London.

The Compton Lectures are named for the late Karl Taylor Compton, who was president of the Institute from 1930 until 1949, and chairman of the Corporation from 1949 until his death in 1954.

Lecture Series for World Peace, has been co-sponsored by the undergraduate Lecture Series Committee and a faculty-student-staff group organized as the Lecture Series Committee for World Peace.

The series began in February when R. Buckminster Fuller gave the first lecture, entitled "Technology and World Peace." Other speakers have been Dr. Karl Deutsch of Harvard, Dr. Kenneth Boulding of the University of Colorado, Dr. Everett Hagan of MIT, and Dr. Herbert York of the University of California.

Marksmanship Course Offered

The MIT Pistol and Rifle Club, has announced the beginning of a course in basic pistol marksmanship.

The course will be offered for five consecutive Thursday evenings from 6:30 to 8:30, beginning May 11, in the pistol range in duPont Gymnasium.

A fee of \$10 covers pistols, ammunition and targets used in the course, which will be limited to the first 20 adult members of the MIT community who apply.

Anyone interested in applying should call Herald S. Sulahian at x3989.

Consortium to Present Stravinsky

"A Stravinsky Celebration," presented by the Eastern Opera Consortium, under the artistic direction of Sarah Caldwell, will be held in Kresge on Sunday, May 7.

Two performances will be held--one at 2:30pm for students, and another at 8pm for the general public.

Works included in the all-Stravinsky program will be "Fanfare for a New Theatre," "L'Histoire du Soldat," "Renard," and the auction scene from "The Rake's Progress," which will be staged by Miss Caldwell.

All of the works will be conducted by Robert Craft, Stravinsky's long-time friend and musical associate. Different groups, composed of members from Boston area college orchestras and choruses, will perform. Fifteen members of the MIT Symphony Orchestra will perform "Renard" and "The Rake's Progress." Members of the Boston University Orchestra and the Tufts Chorus will perform the other works.

A limited number of free tickets for the afternoon performance are available in the Music Office, Room 14N-233B, or in the Technology Community Association Office in the Student Center. Tickets for the evening performance are available to the general public for \$5 and can be obtained through the Boston Opera Company at 267-8050.

Erratum

The headline on the story describing the exhibit being planned for blind people by the Center for Advanced Visual Study was in error. It should have read "CAVS Organizes Synesthetic Exhibit."

Dopfel

(Continued from page 1)

home run in the fifth.

For the season--MIT has won 7, lost 3 and tied 1--Dopfel has pitched 72 innings, struck out 95 batters, issued 39 walks and compiled an earned run average of .87 per game. At the plate, he is batting .333 with four home runs and 19 runs batted in.

CLASSIFIED ADS

For Sale, Etc.

Man's hockey skates, 8, \$10; man's new artificial lthr vest, small. Dorm X0309.

Sansui 8 recvr, Dual 1219, Shure V15-II improved cart, Bose 901 sys, reas offer. Willy Shih, X3161, lv msg.

Vivitar 200mm f/3.5 auto lens, \$45 or best; Heath AJ15 FM stereo tuner, best offer; AR trntbl w/Shure V15 cart, best offer. Lyle, X387 Draper 7.

WISC testing kit, \$5; new assort opaque water colors, 20 cents ea; sm Japanese binoculars, \$7.50; new Rem elec knife, \$7. Milton Lavin, X6680.

Old port sew mach, gd work cond, nds adjustment, \$15. Linda, X7001.

Lady's riding togs: pr tan stretch pants, 30 waist, med length, \$10; pr bl boots, 7M, \$15; pr elastic side jodphys, 7M, \$8. X2280.

Gem organ; Heath guitar amp, TA-16. Celentano, X3161, lv msg.

Batt chrg-eliminator for 12v car batt, 0-80 amp reliable chrg rate, \$25. Kal, X7333.

Roundtrip Bos-Wash, DC, lv 5/5 am, ret 5/8 pm, \$20; lg swing set, \$10; inf seat; boy's 16" bike w/trn wh; student lamp; 2 tbls; Norweg sweater, new. X6085.

Queen size bed, 3 yrs old, frame, box spr & matt. Dietrich, X6747.

Vindale deluxe mobile home w/20' expando LR, 2 BR, w-w, dish & disp, ptly furn, lg porch, 2-car drive, nr Hudson, NH, 35-40 min drive to Linc. X7409 Linc.

Two tires, 8.45x15, exc & gd cond, both for \$25. David, X7652.

Baby equip, exc cond. X4521.

Sleep bags, 2 dacron, 1 down; pack, pack frame. Michael Kearns, X5665.

Tripod, 15", non-adj, \$2; close-up auto-extension tube set for Pentax, \$7. Paul, X6389.

Two Dynaco A-25 spkrs, rated best buy, like new, \$100. Ken, Dorm X8719.

Bowling ball, bag & shoes (9 1/2), \$25; Roberts stereo tape recorder, new \$300, now \$70. Malcolm, X4301.

Singer port sew mach, exc cond, \$55; Regina flr & rug cleaning & polisher, new, \$25; Barber sink and faucets, \$10. Mary, X3423.

Stereo Realist 3D camera, \$35. Kenneth Britting, X3750.

Tech Aero Flying Club membership, \$70; yellow shag rug, 12'x15', \$50. David Dove, X286 Draper 7.

Universal tank type vacuum cleaner w/attach, gd working order, \$20. Ralph, X2518.

Hi-riser bed, \$25; 3 1/2' wide x 72" white brocade drapes, nvr used, \$25. Mike Ciaglo, X5668.

Baby furn, 3-way carr w/new matt, was \$80 now \$15; infant seat, was \$7 now \$4; mesh playpen w/new matt, was \$30 now \$15; walker wgn, was \$10 now \$5; tbl highchair, was \$25 now \$10; crib matt, was \$90 w/bumper guard & busy box, exc cond, \$50; dressing table, was \$25 now \$8; 2 dressers, \$7.50 & \$10. Jerry, X2929.

Ansochrome AR-1d color Rev film 3 1/2 gal processing kit, \$5. Laura, X2195.

LaFayette LR1500TA stereo recvr, 240w amp, yr old, exc cond, new \$320, now \$200 or best. Alan, X5069.

Cast iron chicken fryer skillet w/cover, nvr used, \$5; nat wd 4' cof tbl, \$6. Connie, X5243.

Garrard mod 1000 4-spnd auto chgr, perf cond, \$9. Dan, 321-8150 evgs.

Woman's Swiss hiking boots, 9, like new, Raichle Rough-outs, \$12. X1428.

Coleman 1 gal thermos, nvr used, \$5. Dave, X4849.

Ads are limited to one per person per issue and may not be repeated in successive issues. All ads must be accompanied by full name and extension. Only Institute extensions may be listed. Members of the community who have no extensions may submit ads with outside telephone numbers by coming in person to the Tech Talk office, Room 5-111, and presenting Institute identification. Ads may be telephoned to Ext. 3270 or mailed to Room 5-105. The deadline is noon Friday.

Jet Stream crash helmet, w/adj air vents, was \$45, now \$25; cycle tow bar, was \$32, now \$20; hvy duty lock & chain, was \$21, now \$10; plastic rain suit, large, orig \$6, now \$3, all prices firm. X465 Linc.

Crib, \$10; Peterson auto-fold playpen, \$12; toidy chr, \$2, all exc; misc baby items, maternity clothes, 8 & 10. Call 935-2975.

Baskets, from \$1; basketball goal & net, \$2; coil twin size spring, \$10; girl's ice skates, \$3; '40 Philco radio-phono console, \$15. Call 395-6061.

Hsehold items: dishwasher, bks, lamps, mirrors, rugs, drapes, chrs, bed, etc. May 6 & 7, 10-4, 182 Remington St, Swampscott. Dennis, X7346.

Minolta SLR 101 w/135mm f/218 & 28mm f/315; Nikkormat f/1.4, bl, both br new w/guarantee, 33% off. Jan, X7828.

Minolta SRT 101 w/55mm 1.7, Vivitar 35mm, 135mm, 200mm & other acces. Louis Clark, X2146.

Man's bicycle, 3-spnd, 26", \$30. Dave, X7677.

Akai X-2000S reel cartridge & cassette recorder, needs minor repair, \$325 or best offer; pr hi-fi spkrs, \$35 or best offer. Ed Fuchs, Dorm X0117.

TV, b&w, w/remote control, exc cond, \$50 or best offer. Harry, X6717.

Astronaut 5-band transistor radio; Woolensack monaural tape recorder w/tapes. Larry, X4749.

Concertone tape deck w/control spkrs, 6 hyperbolic heads, 3 motors, solenoid switches, reversomatic, exc cond, was \$500 now \$250. Ziggy, X3782.

Man's 3-spnd bicycle. John Hauser, 267-2336.

Hoover upright vacuum cleaner, \$35; 7.14 tire, \$2; Oster ice crusher, \$3.50; elec broom, \$2; typewriter table, \$3; toys; TV stand, \$2.50; infant & maternity clothes; jolly jumper, \$3; car seat, \$2.50; jump seat, \$2.50, curtain rods, glassware, etc. Steven Weiner, X7645.

VW tire & wheel, nvr used, ww, fits bug or Kharman Ghia, \$15. Sharon, X1863.

Girl's bicycle, 24" wheels, 17" frame, purple Roll-Fast, gd cond, \$25. Marvin, X292 Linc.

Typwr, \$20; chest of drawers, \$15; desk, \$15; bookcase, \$5. Andy, X2920.

TV antenna; Ford 289 eng block, overbored & honed; telescopic lenses: 4mm Orthoscopic and 28mm Kellner. X7142.

24"x30" silkscreen w/backing & hinges, \$14; woman's leather coat, 16, lt brown, must sell, \$12. Audrey, X4878.

Two 18" pwr reel lawnmowers, \$25 & \$30. George Shannon, X5701 Linc.

Metal desk, 30"x45" top (bakalite), center drawer, 3 side drawers, \$15. James, X6232.

Bear rug, \$200 or best. Al, X5873 Linc.

Vehicles

'62 Chevy II, newly rebuilt trans, \$125. Vernon, X6581.

'62 Ford Falcon, 4 dr, clean, must sell, \$155 or best offer. Joe, X3857.

'62 Falcon sedan, gd for commuting, \$90; '66 Country Squire, pwr str & br, hi mil but running perfectly, \$375; Wright tent trailer, sleeps 6, \$325; 16' sloop rigged sailboat, w/sails, \$300; 12 hp outboard motor, forward & reverse, gd cond, \$55. Robert Meeken, X7115 Linc.

'63 Chevy Bel Air wgn, gd cond, \$150 or best. X3118.

'64 Porsche, exc cond, 1 owner, full service record, all orig equip, \$2900. Michael Scott Morton, X3372.

'65 VW sqbk, new clutch, batt & tires, R&H, exc mech cond, \$375. Pat, X6646.

'65 Mustang convert, \$275. X1428.

'65 Galaxie, exc cond, p st, auto, roomy, best offer. Allan, X4935.

'66 Dodge Coronet 440, 8 cyl, 4 dr sedan, exc cond, auto pwr str, R&H, new muff & tail pipes, brakes, tune-up, 53K, \$775. Nishan, X7492 or X6849.

'66 Olds Cutlass, 100K, 3-spnd flr shift, pwr str & br, needs muffler, best offer over \$200. X5112.

'67 Amb stn wgn, air cond, auto, p st, R&H, ww, 55K, \$900 firm. X5916.

'67 Alfa Romeo GTV, new Pirellis, driving lights, mint cond, \$1800. Andy, X7920.

'67 Mustang, 6 cyl, auto, exc mech cond, asking \$950, wl negotiate. Raj, X6894.

'67 Mustang, 6 cyl, auto, exc mech cond, asking \$950, wl negotiate. X3229.

'67 Pontiac Firebird conv, 6 cyl overhead cam eng, auto, pwr str, gd cond, asking \$900. X2689.

'67 Fiat, \$400 or best offer. X6733.

'67 VW fstrbk, exc cond, 6 gd tires, call for specifics. Polly, X2253.

'67 Chevy Camaro RS, V-8, 227, buckets, console, R, auto, red w/bl vinyl rf, \$1200. Fred, X2818.

'67 Datsun 411, gd cond, \$450; Alaskan Malmute puppies, m, \$150; f, \$125. Rosemary Durham, X661 Linc.

'67 VW sedan, new batt, eng in exc cond, needs minor serv for Mass sticker, \$650; snow tires & bike rack opt. Steve Girton, 489-3411.

'68 Fiat 850 sedan, vy gd cond, economical, \$650. Steve, Dorm X0907.

'69 Intl V8, 4-spnd, stn wgn, exc cond, \$1900. Palermo, X3564.

'69 VW bug, R, elec defrost, 7 gd tires incl snows, 28K, v gd cond, red w/bl int, \$1099 or offer. Brad, Dorm X8789.

'69 Renault 10 sedan, lving country, must sell, 32K, 5 xtra tires, exc cond, \$900. Simsek, X1866.

'69-'70 Alfa Romeo, exc cond, red w/black int, conv, am-fm, fuel injected, 5-spnd, CD ignition system, \$2400 or best offer. X2779.

'69 VW, sunroof, auto, exc cond, newly rblt eng, under guarantee, \$1450 firm. X4882.

'69 MGB conv, R&H, wire wheels, new tires & batt, low mi, tonneau, exc cond, must sell immed, make offer. Call 536-5497.

'71 Chevy Camaro, 307 cu in, 200hp, V-8, 16K, 3-spnd auto, buckets, gold w/bl int. Steven, X7333.

'71 Super Beetle VW, am/fm, gd cond, \$1750. Skippy Shea, X4955.

'72 Super Beetle, orange, 7K, exc cond, \$1900 firm. Nancy, X2760.

Camel tent trailer, almost new. Louis, X4121.

'64 Econoline camper, exc body, 3K on tires, springs, shocks, king pin & valve job, incl stove, sink water supply, refrig, etc, sleeps 2 adults, 2 children. Xavier, X5915.

'69 Yamaha 180, exc cond, 7K, \$350. Glenn, 237-4766.

'70 Suzuki 350, red, 8K, gd cond, \$500 or best. Larry, Dorm X9443.

'71 Suzuki 350, exc cond, low mi, asking \$700. John Taylor, X5354 Linc.

Aquacat w/trailer, catamaran sailboat, red & white, racing sail, vy gd cond, \$400. Robert Venusti, X7114 Linc.

Aquacat 12' catamaran, 2 suits of sails, \$400. X6597.

Daysailer, 14' fibergalss, sloop rig, dacron sails, alum trlr, both exc. X7381.

Sunfish sailboat, \$400; windmill class sloop w/trailer, \$400; both complete w/spars & sails. Fred Holmes, X3165.

Thunderbird class cruising/racing sloop, 26', sleeps 4, v competitive, MORC, w/trlr. Tolly, X4637.

Housing

Allston, Camb St, BR for summer sublet in 4 BR apt, nr T, avail June 1, \$70/mo. Martin Alexander, X2627.

Allston, 1 BR apt, sublet for month of June, inc porch, cheap in return for feeding cat & watering plants. X1973.

Arl, 3 BR furn apt, sum sublet, bsmt, gar, 2 porches, pref no children, \$175/mo inc util, negotiable. Gerry, X4192, lv msg.

Arl Hts sum sublet w/pos opt, furn 2

BR duplex w/gar, washer, porch, yd, nr bus, avail 6/1, \$185. Pam, X3313 or Kim, X7950.

Back Bay, Bcn St, 2 BR apt, furn, sublet 6/1 or 7/1 - 8/31, nr Mass Ave, walk to MIT, \$300/mo. Bonney, X3511.

Back Bay, Mass Ave & Marlborough, 2 BR apt, LR off hallway w/sep door, ww carpet, panelling, sublet June 1 w/opt, \$290. Doug, X6733.

Bcn HI, sum sublet to share, 6/1 - K, LR, own BR, air cond, nr T, \$80/mo. Henry, 723-4375.

Bcn Hill sublet, lg sunny studio w/frpl, avail May 15 w/opt, gd landlord, working person pref, \$150/mo. Judy, X6908.

Bcn HI, sum sublet, 2 BR, LR, K, w/opt, furn optional, avail 6/1, \$205/mo. Al or Fred, X5030.

Bri, Comm Ave sublet, lg studio w/alcove for BR, K, lg B, avail now, \$122/mo. Anita, X3626.

Brk, furn studio, on T, sublet 6/1-8/31, \$140/mo. Susan, X5683.

Brk, beaut 9 rm hse, view, ofc or apt possibilities, \$50,000. Traum, X7491.

Brk, Bcn St, sum sublet, 5 min from BU, avail 6/1, lg K, near T, exc loc, furn, quiet, suit for 1 or 2 people, \$157/mo. Kevin, X2073.

Camb, Harvard St, nr MIT, own BR in 3 BR apt, lg K & LR, 2 BR avail now, 3rd BR in mo, \$75/mo. Call 868-4890.

Camb, furn 1 BR apt, all utils, \$185/mo. Pat, X5392 or Mark, X1978.

Camb, Norfolk St, nr Cent Sq, 1 BR apt w/lg K & pantry, avail 6/1, \$155/mo incl ht. Scott, X2311.

Camb, sum sublet w/opt, 1 BR, parking, pets allowed, near trans, avail May 20, \$160/mo. Walt Conway, X5644.

Camb, 2 BR apt, Central Sq, sum sublet, air cond, dish, furn, \$265. Dan, X7787.

Camb, 2 BR apt to sublet, nr Cent Sq, air cond, patio, gd cond, avail 6/1. X4989.

Camb, nr Cent Sq, 10 min walk to MIT, 1 BR in 3 BR apt, sublet 6/1-9/1, furn, \$85/mo. Call 547-7959.

Camb, nr Harv Sq, 1 BR mod apt, sublet 6/1-9/1 w/opt, air cond, dish, balc, view, \$235/mo. Adrian, X2543 or X2868.

Camb, Harv St nr Cent Sq, 1/2 of 2 BR, 2 B apt in new bldg, priv B & ent, air cond, avail 6/1-8/31, \$150, negotiable. Marge, X1826.

Camb-Som line, mod 2 BR apt, air cond, w-w, dish & disp, avail immed. Maureen, X1608.

Camb, sum sublet w/opt, 2 BR apt in new bldg, air cond, w-w, lg K & DR, LR, B, pking avail, bet Harv & Cent Sqs, \$250/mo. Mike, X3109.

Camb, nr Harv Sq, 1 BR apt, study, spac, sunny, avail 6/1, \$160/mo. Debbie, X5656.

Camb, sum sublet nr Cent Sq, 4 BR furn apt, \$200/mo. mod K & B. Call 661-3394 evgs.

E Camb, 1 BR apt, LR, K & B, sum sublet, newly panelled & furn, all utils incl. Call 354-8051.

East Camb, sum sublet, 1 BR furn apt, LR, K, B, 5 min walk to MIT, \$155/mo, avail 6/1. Nourani, X2531.

Inman Sq, furn sublet, BR, LR, K & B, porch, pking, carpeted, storage, avail 6/1-9/1, \$148/mo. Charles, X7435 or 2941.

Som, nr Inman Sq, summer sublet, 4-5 BR, furn, \$320/mo. Call 776-9088.

Som, sum sublet nr Inman Sq, 2 BR furn apt, grnd fl, spac & clean, mod K, nr shop & laundry, \$198/mo. Call 625-1457 evgs.

Harpwell, Me, 3 BR cottage, deep water frontage, \$22,900. Carolyn, X202 Draper 7.

Lake Winnepesaukee chalet, priv pool, beach, etc, \$125-\$155/week. X6415.

Lex, hse, 2 story col, 1/2 acre lot, LR w/frpl, formal DR, eat-in K, panelled 13'x25' fam rm, 4 BR, study, 1 1/2 B, basement playroom, 2 car gar, \$58,500. Briggs, X2502.

Moose Pond, Denmark, Me, new 3 BR chalet, w/loft, season, monthly, or weekly rental. Sue, X3468.

Popponnesett Beach, Cape Cod, 3 BR cottage, 100 yd from priv beach, avail July. Call 232-0205.

Winchester, 5 BR hse, fully equip, avail 6/12-7/14, \$300. X4282.

Concord Cntr, hse for sale, lg Victorian, turn of century rm, completely mod, lg yd, nr schools, high \$50's. Thomas Reed, X491 Linc.

Lincoln, 4 BR hse, summer sublet, lg yd, 30 min to MIT, 6/14-9/6, \$350/mo. Tong, X1986.

Animals

Bassett Hounds, born 3/28, tri-color, 3 m, 3 f, champ sire & dam. Mrs. Rubenstein, X2987.

Free: 3 frisky kittens, 6 wks old. Diane, X5763.

Free: beaut wh Persian m cat, owner moving, anxious to find gd home. X681 Linc.

Lost and Found

Lost: U of Washington spiral notebook, \$5 reward. David Shalloway, X7034.

Found: pocket knife in West Garage. John Kassakian, X5958.

Found: black briefcase containing tech & personal effects. Harold Curtis, X6116.

Wanted

Fem rmmate to share w/fem student, own BR, furn apt, nr Harv Sq. Betsy, 876-7160 after 7pm.

Rmmate for lux 2 BR apt to share w/2 econ grad students, air cond, w-w, dish & disp, balc, fly equip, 15 min to Harv Sq, \$90/mo. Call 491-7198 after 11pm.

Rmmate to share 4 BR apt, Dana St, Camb, avail 5/10. Gloria, X5922.

Norwegian cpl in Sloan School wants hse w/garden for 18 mo starting 7/72, no children. Gerd Randers, X6737.

Hse lot west or north of MIT, within 25 mi, up to \$10,000. Dave, X3959.

Grad student & wife need cheap apt for summer sublet, pref Camb, will feed pets, water plants. Uday, X6603.

Tires, 6.00x12, 2. X7382 Linc.

Used 10-spnd bike. Andy, X6718.

Woman's 3-spnd bicycle, gd cond. Tom, X2793.

Rmmate, for summer, to share furn 2 BR lux apt, air cond, carpets, Somerville, 1/2 mile from Harvard Sq, \$125 + elec. Phil, 547-4631.

Apt for 2 grad students beginning 6/1. Ed, X5309.

Furn hse for visiting prof, wife & baby, 9-12/72, C. Brumfiel, 1205 S. Forest, Ann Arbor, 48104; or for more info, Rena, X4380.

Refrig, 8-12 cu ft, under \$50. Louis, X6030 or X3227, lv msg.

Rmmate for summer w/opt, own semi-furn rm in spacious 4 BR Brkln apt nr Comm Ave, \$78/mo + util. Call 277-0403 evgs.

Port cassette tape recorder, any kind, to use for voice recording. Call 625-5609 evgs.

Persons to share U-Haul van to Montana or anywhere in Northwest, lving about June 1. Mike Strain, X3161.

Lady to care for 2 children, July & Aug, 5 days/wk, Arl. Hedy, X4177.

Fem rmmate, 22-25, to share sunny 9-rm apt w/3 others, Som, nr Union Sq, own lg BR, dish, yd, gar, laundry, avail immed, \$100/mo incl util. Carl, X7075.

Books of all kinds, hard & paperback, to donate to the Walpole Prison Library. Susan, X4001.

'69 or '70 Dodge Dart or Maverick. X7137.

Miscellaneous

Tennis instructor, for all age groups, fl time sum job, Wareham. X3956.

Two MIT secretaries wl housesit for sum, pay utils, refs. Vicky, X4903.

Tennis rackets strung by experienced stringer, all kinds of rackets, one day service. Neighbors, 625-0284, evgs.

Fem writer wants to rent reas priced hse on Martha's Vineyard, 9/5-9/11. Karen Goodall, X3344.

Wl do graphic work for thesis, reliable, fast, mod equip, inexpensive. Tom, X5150.

EE student interested in joining formal/informal eclipse expedition to Canada July 10; low-grate, port stereo phono for sale. John, 354-8170.

Wl do typing, French or Eng on selectric. Halverson, X1750.

Typing, theses, reports, statistical. Jean, X7966.