

Community Fellows Program

MIT, with support from the Rockefeller Foundation, will begin this fall a Community Fellows Program under which ten to 15 selected local leaders from minority communities throughout the US each year will be able to spend a full academic year at the Institute.

The program, patterned somewhat after other MIT mid-career programs for managers, engineers and selected leaders from developing countries, will prepare elected and other local community leaders in dealing with technical, social and economic problems that confront their communities.

Announcement of the program was made by Dr. Jerome B. Wiesner, provost and president-elect.

"This program has excited the interest of a great many persons at MIT and at the same time has provided the Institute with a way to respond further to the initiatives expressed by leaders in the minority community in Boston," Dr. Wiesner said, "We look on this project as an important step in assisting in meeting the need for leadership in our urban centers with the variety of capacities from within the university."

"The program has great potential, we feel, and will provide the Institute with a major method of opening up resources to those citizens for whom university training has not heretofore usually been available. This is the kind of program it is important for us to undertake at this time and one which will supplement the other efforts MIT is making in developing closer working relationships with inner city leaders."

The Rockefeller Foundation has shown considerable interest in this project and has made a four-year \$400,000 grant to MIT to assist in funding the program.

The program will be part of the Department of Urban Studies and Planning, but will involve faculty, staff and students throughout the Institute. Individual programs will be tailored to the interests of each Fellow.

The program was developed by Professor Lloyd Rodwin, Head of the Department of Urban Studies and Planning, in response to the initiative of Melvin H. King, who for the past four years has been executive director of the New Urban League of Boston and who on July 1 will leave that post to become associate director of the new program. Program director is Frank S. Jones, Ford Professor of Urban Affairs in the Department of Civil Engineering and a member of

the staff at the Urban Systems Laboratory.

Community Fellows will be drawn from the staffs of elected black officials, from neighborhood housing corporations in ghetto areas, from community development corporations, from community action and model cities programs, from civil rights organizations with community development components and from other similar organizations.

Fellows will spend their year working with faculty and staff on such problems as housing, health care delivery, job programs, educational systems, waste management technology, nutrition and other kinds of public service Systems. The Fellow Program will include workshops on social and economic development and will involve faculty, staff and students from throughout the Institute.

Applications for September admission are due by June 1. They should be addressed to the Director, MIT Community Fellows Program, Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge, Mass. 02139.

Searle to Become LeBel Professor

Dr. Paul E. Gray, Dean of the School of Engineering, has announced the appointment of Professor Campbell L. Searle as Clarence Joseph LeBel Professor of Electrical Engineering for a two year term, beginning 1 July 1971. He succeeds Professor Amar G. Bose, the first holder of the Chair, who was awarded it for the period 1969-1971.

Professor Searle plans to continue his research in the general area of time-varying linear systems, with particular emphasis on processing and production of music signals. Present-day computer capability of signal analysis and synthesis, combined with present-day understanding of auditory physiology and psychoacoustics, provide important new insights into the whole process of music perception and instrument recognition. It is hoped that by exploiting these techniques, significant contributions will be made to research in acoustics and auditory recognition. Further, these same techniques have potential importance for construction of a new generation of hearing aids which would compensate for hearing losses other than just loss of sensitivity.

Clarence J. LeBel, the donor of the chair, received the S.B. and S.M. degrees in 1927 from MIT as a graduate of the Department of Electrical Engineering's cooperative course. Following graduation he was employed successively for short periods by several companies until 1937 when he joined Audio Devices, Inc. In 1948 he was named Vice President of Audio Devices, Inc. and in 1949 President and Chief Engineer for Electroacoustic and Electronic Measuring Instruments of Audio Instrument Company, Inc. Mr. LeBel was a founder of the Audio



Professor Searle

Engineering Society and served as that Society's President in 1958.

Professor Searle received his B.S. degree in 1947 from Queen's University in Ontario, and his S.M. degree from MIT in 1951. From 1951 to 1956 he was a staff member in the Research Laboratory of Electronics. He began his career in the electrical engineering faculty in 1956 as an instructor and was promoted to professor in 1968. He is one of the principal authors of the SEEC series on transistor circuits and measurements, and co-author of *Electronic Principles*. He has an extensive background in the design of electronic systems and he did some of the pioneer work in the design of control systems for cesium atomic frequency standards.



The new Al Cecere serves a bourbon old fashioned to a patron at the Faculty Club.

--Photo by Margo Foote

New Look for Al

An account at Harvard Trust Company in the name of "Al's Hairpiece Fund" was closed recently.

Al Cecere, bartender at the Faculty Club, took the money and bought himself a toupee. The "fund" had been set up by some of Al's regular patrons.

In the week since he has had the hairpiece, Al has taken some good-natured ribbing. "How's the first week gone?" the Faculty Club regulars have been asking.

"I hear they're looking for a leading man for Sophia Loren's next film," he muses.

Slim and dapper with his new hair, Al now refuses to be seen without his accoutrement. "Once it goes on, friend, it stays on," he says.

More for Uncle Sam

The days of penny postcards and four-cent stamps are gone forever. Now a letter mailed with a six-cent stamp will be marked "Postage due-2 cents."

Increased postage rates went into effect on Sunday (May 16). All classes of mail except Parcel Post are affected by the increase.

First-class letters now cost 8 cents per ounce and air mail letters are 11 cents. Postcard rates have increased to 6 cents for regular delivery and 9 cents for air mail. Special Delivery costs have gone up too. Instead of 45 cents, a 60-cent charge is now added to the regular first-class or air mail rate.

More detailed information on the new postage rates is available at the MIT Branch Post Office in the basement of the Student Center, Ext. 7012.

Housing Program to Begin

President Howard Johnson and representatives of the Department of Housing and Urban Development and the Cambridge Housing Authority last Friday released complete information on the largest HUD-approved "turnkey" public housing development in the nation.

The \$17.7 million project, which will establish nearly 700 housing units for elderly citizens in Cambridge, is also the largest public housing development and first turnkey project ever sponsored by an educational institution.

Cambridge Mayor Alfred Vellucci expressed special thanks to MIT, calling the project "a step in the direction of cementing the relationship between colleges and the city."

MIT will fulfill three major functions in the establishment of the development. University leaders took the initiative in proposing the development project to the CHA. MIT has also contributed much of the planning effort and will support the continued development of the project.

Turnkey public housing means that the CHA contracts with MIT to buy the new units when they are

completed, when MIT will "turn over the key" to the CHA. Eventually MIT will recover the costs of sponsoring and supporting the development, and will sustain neither a profit nor a loss on the deal.

Under the agreement, MIT will build 199 units on Clarendon Avenue in North Cambridge, 304 on Gore, Cambridge and Lambert Streets in East Cambridge, and 181 on Hamilton Street in the central Cambridgeport section of the city.

Mr. Johnson said "This MIT sponsored program provides an example of how a university, particularly one in an urban setting, can move in creative ways to assist in solving pressing urban problems." He expressed a hope that MIT and other universities would do more in the future to help Cambridge's housing problem.

"Universities clearly have a responsibility to be concerned with the quality of life and the environment in which they are situated—not just for those in the community associated with the university but for the full and entire community," he added.

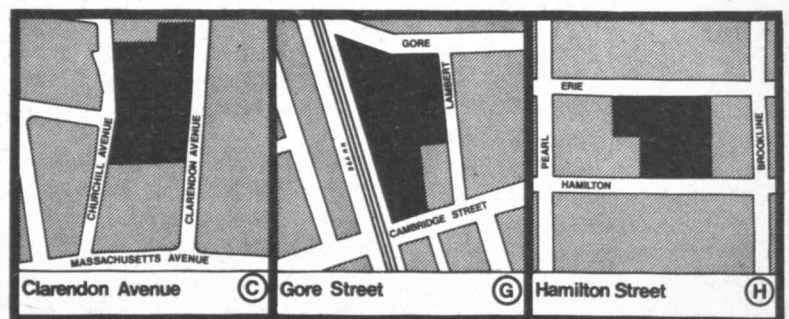
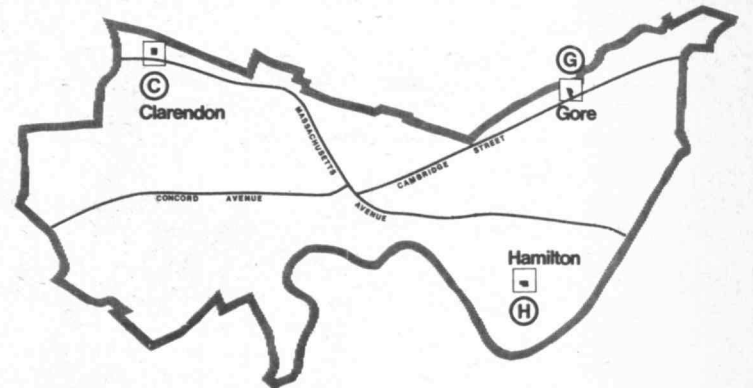
Construction on all three sites will begin "in a month or two," according to Mr. Johnson. The Gore Street site is occupied now by an abandoned factory. MIT has helped residents at the other two sites relocate.

Antony Herrey, Director of the MIT Real Estate Office, said that care had been taken to see that each of the three new developments complements the neighborhood around it. Commercial space will be provided on two of the sites to serve not only the tenants but the entire neighborhood.

Cambridge elderly groups helped plan the facilities to be built into the projects. As a result extensive common facilities have been planned to serve the needs of elderly citizens. The buildings will hold lounges, game rooms, television rooms, crafts rooms, clinic spaces, laundries and gathering places.

Maps show sites in Cambridge where the Massachusetts Institute of Technology will build housing for the elderly under the HUD turnkey program.

--MIT Photo.



Included in this week's issue is a supplement beginning on page 3 giving the full text of the final report of the Ad Hoc Committee on the Privacy of Information at MIT.

The Institute Calendar is on page 11.

Executive Committee Accepts Proxy Report

Dr. George Thorn reported for the Executive Committee's subcommittee on proxy issues and his report was accepted and its general conclusions unanimously approved. Following is a summary of his report:

An officer of the Institute has been designated for centralizing the handling of information, queries, and proposals bearing on corporate proxy issues related to public policy and social responsibility. Mr. Walter Milne, Assistant to the Chairman of the Corporation, has agreed to accept this responsibility and will maintain an office for this activity in Room 10-205 at the Institute.

In consultation with the subcommittee, the administration of the Institute has arranged for a special study project on questions of corporate "democracy," public policy and social responsibility. Dr. Edward H. Bowman, Professor of Management in the Sloan School, will direct this project, starting this summer, and will recruit others to assist him.

The subcommittee presented to the Executive Committee the following initial recommendations, pending the results of the Bowman study and further consideration in depth by the subcommittee itself:

"1. The Executive Committee has a responsibility to decide on proxy resolutions involving public policy and social responsibility. The Institute normally should not abstain from voting on controversial issues. In addition to the voting of stock, the Executive Committee may express views on behalf of the Institute by direct communication with the management of corporations.

"2. The subcommittee favors the appointment by corporate boards of directors of director committees on public policy, whenever circumstances and the size of the board warrant such action. Such director committees should have full responsibility for reviewing matters of public policy and for making appropriate recommendations to the board as a whole.

"3. The subcommittee favors the election of individuals with diverse backgrounds to corporate boards, but it does not believe that representatives, *per se*, of specific constituencies—such as consumers, minorities, labor, and other special interest groups—is in the interest of effective corporate activity. Directors should act in behalf of all shareholders and for the corporation as a whole. At the same time, there is merit in the concept that boards would benefit from a diversity in the background of directors.

"4. The subcommittee is sympathetic to the concept that additional means should be explored for proposing nominees for boards of directors, but it is not convinced of the soundness of any of the current resolutions it has reviewed. Shareholder participation in the nominating process is an important question that deserves further study.

"5. The subcommittee believes corporations should find new ways

of presenting to shareholders more comprehensive information and data on corporate programs relating to public policy and social responsibility. Any requirements for such reporting, however, should bear upon all major corporations equally and should not be special requirements on single corporations. These are rightfully matters of broad public policy. In particular, current proposals that define rigidly the content of a corporation's annual report seem unreasonable. This is an important area that deserves further study and analysis.

"6. The subcommittee is deeply concerned by the questions surrounding the presence of American companies in the Republic of South Africa and in other countries and areas where racial discrimination is a part of national policy. It finds these policies abhorrent. It is not convinced, however, that the present situation is well enough understood to warrant support of specific proposals for the withdrawal of American companies from these areas at this time. The Executive Committee should be acutely mindful of the moral problems involved, but it must have the benefit of a deeper analysis of the best ways of dealing with these problems, which could include the continued presence of the American company in the area concerned. The subcommittee plans to seek a better understanding of how appropriate policies and actions can be determined. This will be an important area of study.

"This initial statement of guidelines is intended as a progress report by the subcommittee. The subcommittee is convinced that proxy issues relating to social responsibility on the part of corporations must be dealt with thoughtfully and responsibly. These are not easy questions and they cannot be handled in a cursory way. It is particularly important that the Institute continue to refine its procedure for the review of proxy questions that are in addition to those related to normal investment policy. The subcommittee will continue its discussion of these matters, and it looks forward to studying materials on these issues from other sources including the study to be undertaken this summer by Professor Bowman."

Environment Council Formed

An interdisciplinary environmental council has recently been established at the Institute, composed of 23 members of the faculty and four students. Professor Walter A. Rosenblith, Associate Provost, is chairman of the group. The following is the Council's charter.

Role of the Interdisciplinary Environmental Council

The Institute has formed an Interdisciplinary Environmental

Council, appointed by the President, whose purpose is to take an overview of all educational and research activities that relate to environmental concerns. The establishment of the Council reflects the recognition that successful education and research in this area require the involvement of many disciplines and many departments. The Council will be available to any group at the Institute for advice and assistance concerning research and educational programs dealing with problems of the environment.

The Council will have continuing responsibility for assisting in the formulation of policy on issues that relate to interdisciplinary environmental teaching and research at the Institute. A primary concern of the Council will be to review the development of interdisciplinary educational opportunities both at the undergraduate and graduate level. When appropriate, the Council will take the initiative for the establishment of new educational programs, subjects, seminars or A mission-oriented research projects. The Council may recommend the allocation of Institute resources to support activities within its purview. The Council will coordinate its efforts with the appropriate standing committees of the faculty and other interested groups at the Institute.

The Council will work closely with the newly created MIT Environmental Laboratory. The Council will assist the Laboratory in developing educational and research opportunities for faculty and students and will cooperate with the Laboratory in developing a mission oriented research program.

The membership of the Council will be drawn primarily from the Institute faculty and student body. The Deans of schools may elect to be members *ex officio* and the Provost or Associate Provost will act as chairman.

Professor Walter Rosenblith, Associate Provost, is chairman.

New Kennedy Scholars

Two Kennedy Scholarship winners will be attending MIT for the 1971-72 academic year.

These scholarships are awarded annually to British students who have been accepted for graduate study at MIT or Harvard. The two scholars coming to MIT are Jennifer A. Logan and Colin J. Warren.

Graduated from the University of Edinburgh, Miss Logan will do graduate work in the Department of Chemistry. Mr. Warren, graduated from Imperial College in London, will study in the Department of Electrical Engineering.

The Kennedy Scholarships were established in 1966 by the Kennedy Memorial Fund which is part of the National Memorial Appeal launched by the Lord Mayor of London following the death of President John F. Kennedy.



Patsy Piccione surrounded by his charges.

--Photo by Bob Lyon

Patsy's Armada

At MIT, Patsy Piccione is at the cutting edge of lawnmower technology.

He needs to be, because 20 tons of fertilizer a year make the green grass grow all around—and the Institute fields a mighty mower brigade to cut it.

Patsy and Kenneth Bradway are the supermechanics (in the opinion of their boss) who take care of all of MIT's motorized equipment, including 40 you-push-it rotary mowers and several big reel-type gang mowers.

When it doesn't rain these days, the campus is once again abuzz with mowers, signaling that Patsy and Ken have finished their annual springtime overhaul.

Because lawnmower experts ought to have some good advice, for self-appointed groundskeepers, *Tech Talk* looked up Connie Murphy, of Melrose, the dispatcher in charge of Physical Plant's motorized grounds equipment, then went to visit Patsy in the storage-maintenance garage on Vassar Street.

The word from Patsy is "maintenance." In fact, if a homeowner takes care of his mower (probably just following instructions in the owner's manual), "it should last a lifetime," says Patsy. In addition to the manufacturer's directions, here are some tips from Patsy:

Always keep the blade sharp. (A dull blade puts more stress on the motor.)

Be sure the oil reservoir is filled to the very top of the filler hole. (MIT gardeners are instructed to make this check each and every time they take out a lawnmower.)

Keep the underside of the blade shroud clean. (An encrustation of grass clippings makes the mower less efficient.)

At the end of the season, remove the sheet metal cover atop the mower and clean out accumulated debris that may reduce the motor's cooling capacity. (You could take your mower to a local filling station and use compressed air, says Patsy.)

Before putting the mower away for winter, drain out all residual gasoline. In addition, remove and clean the sparkplug and pour some oil into the cylinder.

Patsy and Ken do all these things and more, but even so MIT's mowers last only about three years

because of accelerated wear and tear from running up to 30 or 40 hours a week. And even MIT is caught in the throwaway world in which it is less expensive to buy a new mower than to rebuild a motor.

Patsy, who lives in Somerville, and Ken, from Westwood, also do all the maintenance on 40 other pieces of equipment, including lawn edgers, sprayers, several trucks, a mammoth snow melter, and five 20-year-old homemade tractors built by the late Roger Dennison, one of their predecessors in the garage, from junk cars that then cluttered up the present site of Westgate.

Patsy, who has been at MIT for 16 years, spent 10 years as a chef at Walker before moving to his present job. Indefatigable at learning as well as at work, he has 10 weeks left of a two-year course at Massachusetts Trades School where he's brushing up on new automotive technology such as emission control devices.

Patsy fixes cars as a hobby, and also continues to cook. He denies that he has any culinary specialties, but Connie Murphy cast a knowing eye and says seriously, "He makes a great lasagna."

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Editor
Joanne Miller

Staff Writers
Robert M. Byers
Peter M. Close
Steve Grant
Linda Omohundro
Ty Rabe
William T. Struble

Business Manager
Paul E. Johnson

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FINAL REPORT OF THE AD HOC COMMITTEE ON THE PRIVACY OF INFORMATION AT MIT

I. Introduction

The Ad Hoc Committee on Privacy of Information at MIT was formed by the President in May 1968 to "examine the policies and procedures of the Institute concerning the collection, security, disclosure and use of information, including that obtained for administrative purposes or in the course of behavioral research". In effect, the Committee was set up in response to the growing general concern for the protection of individual privacy in an increasingly technological society--in particular, a society in which there is growing capability to aggregate data, to interconnect data files and to copy records inexpensively.

The Committee's approach was strongly influenced by Professor Alan F. Westin's view of privacy, summarized in the following quotations:

In my view the modern claim to privacy derives first from man's animal origins and is shared, in quite real terms, by men and women living in primitive societies. Furthermore, the approach to privacy taken by Americans today developed from a tradition of limiting the surveillance powers of authorities over the private activities of individuals and groups that goes back to the Greeks in Western political history.

Privacy is the claim of individuals, groups or institutions to determine for themselves when, how and to what extent information about them is communicated to others. . . The individual's desire for privacy is never absolute, since participation in society is an equally powerful desire. Thus each individual is continually engaged in a personal adjustment process. . . in the face of pressures from the curiosity of others and from the processes of surveillance that every society sets in order to enforce its social norms.

In practical terms, the problem of the protection of privacy is in large part one of balancing the need of members of a community to be informed--the right to know--against the right of individuals to be secure in their persons. It is thus a problem of adjusting demands for openness in the face of equally urgent demands for individual privacy. The Committee's charter directed our attention to the problem of guarding the person against invasions of his rights, with due regard for the community's need for freedom of information flow.

Committee membership was drawn from a wide spectrum of the MIT community, including faculty, administration and students, for the issue of privacy, reaching as it does into all facets of Institute operations, touches every member

of the community. This review is not exhaustive, nor is it based upon special expertise on the part of the Committee members except with respect to the use of computers. However, it does represent the deep concern of this typical MIT group. In our deliberations, we were aided by Professor Charles Fried of Harvard and Professor Alan F. Westin of Columbia, as well as several members of the MIT faculty and administration other than those on the Committee.

The Committee submitted an Interim Report, dated June 10, 1969, covering its first year of operation, under the chairmanship of Professor Eugene B. Skolnikoff. This report was widely distributed within MIT and a hearing on it was held on January 16, 1970. The Committee wishes to acknowledge the invaluable assistance of Miss Joyce Harman who acted as recording secretary since the Fall of 1969, and was a major asset in the preparation and editing of this report.

II. Summary of Observations, Conclusions and Recommendations

A. Observations

The Committee makes the following general observations:

1) *Significance at MIT*: Privacy is of particular significance at MIT because of the many special interpersonal relations of trust that are essential to the functions of a university; because of the importance of freedom of thought in the university; and because of the university's role as custodian of research data.

2) *Personal Matter*: Privacy is a personal matter which depends on cultural background, experience and other factors; and what one individual feels is a private matter may not be so regarded by another. Thus the right to make personal decisions in this matter is fundamental.

3) *Violations*: Although few violations of individual privacy have been brought to the attention of the Committee, abundant possibilities for such violations are evident.

4) *Awareness*: Central Administrative offices working with obviously sensitive information seem well aware of their responsibility; we find less awareness at the academic department and individual faculty member level.

5) *Responsibility*: The primary responsibility for safeguarding individual privacy at MIT must by necessity devolve upon existing offices. At the same time, every member of the community has a moral duty to respect and protect the privacy of others.

6) *Price of Privacy*: A heightened awareness seems to be needed on the part of all offices and individuals for the many facets of the privacy problem, including the fact that privacy has a price not only in direct expense but in the sacrifice at times of operational efficiency and personal convenience.

7) *Interface*: The boundary between MIT and the outside world is not sharply defined, and the role of individuals of the MIT community may sometimes be ambiguous with respect to their acting as members of the Institute or as members of the larger society. Thus in this gray area we must depend heavily on the individual's sense of responsibility and good judgment.

8) *Prevention*: Preventive measures are of special importance in the protection of privacy because the damage done by violations usually cannot be repaired.

9) *Open Atmosphere*: Great care should be taken to ensure that procedures designed to protect privacy interfere as little as possible with the free-and-open atmosphere and with the ready availability and exchange of ideas and information within the MIT community. In addition, protection of privacy must not be incorrectly cited as a reason to avoid administrative inconvenience, as an excuse, or to hide error.

B. Conclusions

On the basis of these observations, the Committee has reached several broad conclusions, all of which pertain to persons acting within the Institute or using its facilities or resources, or in roles representing MIT, or dealing with information concerning MIT or its members.

1) *MIT Responsibility*: The Institute has a major responsibility to protect the privacy of every member of the MIT community.

2) *Community Responsibility*: Each member of the community has a moral responsibility to respect and protect the privacy of others members, as well as the privacy of legal or abstract entities such as student societies, other special groups, and administrative offices.

3) *Right to Know*: Consonant with the privacy rights of others, individuals have the *prima facie* right to know what information is kept about them.

4) *Use and Retention*: Within this context, personal information should be used and retained only for the purposes and for the period of time explicitly agreed upon.

C. Recommendations

To implement the foregoing conclusions, the Committee makes the following recommendations, all of which are elaborated more fully in Part V of this report.

1. Explicit Guidelines

The Institute should establish and follow more explicit guidelines relating to the collection, processing and use of information pertaining to identifiable individuals. We recommend the following set of guidelines:

a) *Justification*: The natural tendency to collect and retain as much information about individuals as possible should be discouraged. All information-gathering activities should be justifiable on the basis of a searching review of the need to know.

b) *Use*: In the process of information collection the intended use of the information must be specified. No information should be used for purposes other than those stated when the information was originally collected without the explicit permission of the person to whom the information pertains.

c) *Implicit Coercion*: In the process of information collection each individual should be candidly informed of the consequences, if any, of his not providing the information requested.

d) *Retention*: The intended period of retention of personal information should be determined at the time of its collection. Procedures must be established to ensure that information is transferred to the Institute Archives or destroyed on schedule at the end of its stated retention period. (Suggested policies and procedures relating to transfer and storage of material in the Institute Archives are presented in Part V and Appendix I of this report.)

e) *Other Aspects*: Specific rules and procedures should be promulgated for other aspects of information utilization, e.g., procedures relating to duplicate records, separation of sensitive information, informal records, etc. (These are discussed in Part V of this report.)

f) *Collection for Others*: When information is collected by MIT or through MIT offices on behalf of external agencies, the Institute should determine if the guidelines above are followed, and, if not, it should do all in its power to induce such agencies to comply with them.

g) *Release to Others*: Specific guidelines, in addition to those already listed in *Policies and Procedures* (e.g., Sec. 3.15, "Inquiries Concerning Students"), must be established for the release of information in response to queries from outside the Institute, such as, for example, those from prospective employers or government agencies. Except for evaluation of professional competence and proficiency no information about individuals should be released except at their request, and then only through specifically designated offices. No information should be released about opinions and views expressed by individuals or about membership in Institute societies and other special groups.

In the case of government security checks, where an individual acts primarily as a citizen rather than as a member of the MIT community, binding Institute guidelines cannot be established. However, the Committee feels that responsible behavior as a citizen should not demand violation of special-trust relationships such as are typical of a university community.

All these guidelines, especially those relating to g), must be extensively and frequently publicized to ensure awareness of them throughout MIT. Vulnerability of information records to legal action

poses additional problems and emphasizes the need for guidelines. The legal aspects are discussed in Appendix II.

2. Rights of the Individual

The Institute should formally recognize the *prima facie* right of the individual to examine information about himself. In particular, he should be able to know, consonant with the privacy rights of others, what such information is retained, to correct any inaccuracies, and to comment on possible misinterpretations of facts. The Institute should implement appropriate mechanisms to enable the individual to exercise this right without infringing on the rights of others. (Some specific suggestions are made in Part V.)

3. Security of Information

Each individual office at MIT should be responsible for specific procedures to insure the physical and operational security of information under its cognizance.

4. Use of Computers

Offices employing computer-based information systems should be familiar with the privacy protection characteristics of the computer systems used and, when in doubt, should seek the advice of the Director of Information Processing Services on technical and operational problems affecting system security. The ability to protect the privacy of information should be a major consideration in the acquisition and operation of institute computer facilities.

5. Standing Committee or Privacy

The Committee recognized that there does not exist a body of cases relating to privacy from which reliable policies and procedures can evolve. For this reason, and because privacy problems are likely to become more serious in the future, a small standing committee on privacy should be established to gather information and develop experience about privacy matters. It should consist of a faculty member, a non-faculty employee and a student. Complaints and conflicts relating to privacy should be reported to this committee, but the committee should be free from any operational, judicial or enforcement responsibility. The committee should be available to administrative offices and individuals for informal advice and, on its own initiative or upon request, should report to the President or to the Faculty on matters concerning the protection of individual privacy and the exercise of privacy rights.

6. Supervisory Responsibility

A specific member of the administration should be given responsibility for overseeing institute operations with respect to the protection of individual privacy, and for enforcing pertinent rules and regulations.

7. Third-Party Mechanism

A "third-party" mechanism would, the Committee believes, be very helpful in dealing with complaints relating to privacy and with conflicts of privacy that cannot be otherwise resolved. This function

is closely related to, and possibly inseparable from, that of an ombudsman. Thus the Committee suggests that, if an MIT ombudsman is established, dealing with complaints and conflicts concerning privacy should be included in his charter. If an ombudsman is not established, the privacy committee recommended under 5. above might play this role informally, as discussed in Part V.

8. Behavioral Science Research

The Protection of privacy in behavioral science research raises most of the questions to which the above recommendations are directed. It also raises special problems that are inseparable from those inherent to the use of human subjects in any types of research. The Committee recommends that the assignment of responsibility for the protection of individual privacy in behavioral science research, now assigned to the Committee on the Use of Humans as Experimental Subjects, be reaffirmed officially. It further recommends that members of the MIT community be reminded periodically of their obligations when they conduct such research, and of their rights when they act as experimental subjects of such research.

III. Discussion of Observations

MIT is increasingly involved in the collection, recording and dissemination of information about individuals for educational, administrative or research purposes. Since information is in many ways the lifeblood of a university, there is nothing inherently surprising or alarming about this observation. However, several forces are at work that justify careful examination of the purposes for which information about individuals is collected, and of the procedures and safeguards established for handling information after collection.

In particular, the trend toward centralization of personal data files in the society at large makes the interface between the information systems at MIT and those of outside institutions a more sensitive boundary that it has been heretofore. No longer can the intrinsic efficiency of unavoidably dispersed and unmatched data files be relied upon to protect an individual from the dangers that may accompany access to his essentially complete (and possibly inaccurate) personal history. Privacy of information may not seem to be a major problem for those who feel that they "have nothing to hide." However, since information collected about individuals usually includes hearsay comments, and may well be erroneous, its careless dissemination can raise problems for anyone. Moreover, even if the large majority is unaffected, a few special cases fully justify concern. Each institution in the society clearly has a responsibility to its members to be fully aware of the possible consequences both of collecting and maintaining information in its own files and of releasing information outside its domain.

A. Special Importance of Privacy at MIT

Within a university there are special reasons for concern about

the privacy of information. One is the character of the relationship between a student and his professor. When that relationship is as it should be, there is mutual respect, honesty, intellectual questioning, and trust which establishes a professional and personal bond that should be necessarily immune from detailed reporting unless both parties consent.

Another special characteristic of the university is its function as the natural home of objective, disinterested analysis. At times, this must involve discussions, deliberations and theorizing on subjects that may be considered distasteful or subversive by the society at large. Such intellectual debate and analysis can only be carried out in an atmosphere free of fear of later retribution or of penalty for opinions or views expressed. Thus, the university must be particularly concerned that the views of its members, expressed in talk or debate, are reported and recorded only as the individuals themselves see fit.

A related function of the university is to encourage and promote the unfettered intellectual development of its students. This, too, requires that few limits be placed on students' questioning of the ideas voiced by their elders. Sometimes students and others become committed to ideas that are not accepted by society at large. They may have to be prepared to suffer the consequences of their public acts and writings, but the university must be absolutely clear in its responsibilities to protect the private exercise of independent thought. This implies, in part, that the university itself discourage the recording or dissemination of many kinds of information about individuals within the community.

Lastly, the university as a center of research finds itself in a wholly new situation with regard to the scale and character of social science research data. The availability of new technology for data-handling has led to enormous increases in behavioral data about individuals, collected to meet research objectives. The conditions under which these data are collected, sorted, used, tied to national data banks, and generally made available to others are central concerns for any university.

B. Privacy is a Personal Matter

The specific forms in which privacy is demanded or observed are found to vary substantially from culture to culture, and to depend significantly on the environment in which a person lives and on his past experiences. While there may be general agreement in a given culture as to what constitutes private information, significant differences in attitude may still exist. Thus, the right to privacy cannot be associated with specific information. Rather, it is the right to decide for oneself what is to remain private, and therefore is akin to personal autonomy. This point is of salient importance at MIT because of the great variety of cultural backgrounds in the community. In particular, the temptation must be resisted to evaluate the validity of other

people's claims to privacy on the basis of one's own values and feelings.

C. Factual Information

Members of the Committee visited a large number of central administrative offices and reviewed their operation with respect to the protection of individual privacy. Several key members of the MIT Administration shared their views and experiences with the Committee. In addition, quite a few special situations and events relating to privacy were informally brought to the attention of the Committee. Willful violations of individual privacy seem to have been rare, but there have been a number of accidental and unconscious violations. Furthermore, abundant opportunities for serious violations were observed.

D. Present Awareness

The Committee was pleased by the awareness of privacy issues it observed in the central administrative offices responsible for sensitive information. Much less awareness was noted in departmental offices and in faculty and student practices. The Committee was also pleased to see that just its existence has already resulted in certain improvements.

E. Responsibility for Safeguarding Privacy

The details of how the privacy of personal information should be protected depend on many factors such as the character of the information, how and from whom it is collected, where it is stored, how and by whom it is used. The Committee feels that, while general guidelines can be set for the whole institute, the task of devising and enforcing rules, and of implementing specific procedures, must be delegated to the office or person directly responsible for the information that must be protected. The Committee believes also that the protection of individual privacy must be everybody's responsibility, and that this responsibility includes the moral obligation of each person to respect other people's privacy. No set of rules and procedures will be effective unless this moral obligation is understood and followed by all members of the community.

F. The Cost of Privacy

A number of instances were brought to the attention of the Committee in which individual privacy was violated—accidentally in an otherwise laudable effort to eliminate red tape, or unconsciously in the process of pursuing otherwise desirable objectives. These instances further substantiated the fact that there are many aspects to the protection of individual privacy of which the MIT community is largely unaware, as well as aspects that are still poorly understood even by experts. These same instances made it clear that privacy has a price. Privacy considerations sometimes interfere with personal convenience (as when information cannot be given on the telephone), or complicate office procedures (as when files must be locked when not in actual use), or hamper, delay or

prevent the collection or distribution of useful information. Also, reinforced physical security of information requires more expensive filing cabinets and suitable storage space; and the overhead costs of protection in a computer system may be substantial. A heightened awareness of these problems is needed, and also greater willingness to accept the various costs engendered by the protection of individual privacy.

G. Interface with the Outside World

The right to privacy with respect to personal information has not yet been formally recognized in the society at large of which the MIT community is part, or even tentatively defined as an ethical principle. Thus any attempt within MIT to establish guidelines and standards with respect to privacy runs into difficult problems at the interface with the larger society. The role of individuals may sometimes be ambiguous with respect to their acting as members of the institute or as members of the larger society. More importantly, demands for information from outside the institute may be in serious conflict with internal privacy standards. The Committee has found it impossible to recommend specific guidelines in this gray area, except for the suggestion that, whenever possible, internal standards be explained and forcefully pressed upon external agencies.

H. Importance of Preventive Measures

The disclosure of information is an inherently irreversible process. Thus the damage done by privacy violations cannot be directly repaired, and its consequences cannot be readily foreseen. For this reason preventive measures are of special importance, and deserve diligent attention. This point must be stressed because the need for preventive measures is too often overlooked or dismissed in the absence of serious violations, particularly when the cost of such measures is appreciable.

I. Privacy and Free-and-Open Atmosphere

Although the Committee has noticed no instances in which individuals or offices have used the need to protect privacy as reason or excuse to avoid inconvenience or to hide error, the chance for such actions always exists. As the institute increases its awareness for the issue of privacy, care must be taken to avoid interference between the protection of private information and the basic need of the community to conduct its affairs in as free and open a fashion as possible.

IV. Discussion of Conclusions

The Committee was instructed by its charter to make recommendations in an area of human affairs in which debate in the larger society had hardly begun, and in which no significant precedents existed in other institutions. The Committee surveyed the situation at MIT, conferred with experts such as Professor Alan Westin, and discussed at length the role of privacy at MIT and the

problems and conflicts connected with the protection of individual privacy. It became clear from these deliberations that, while the protection of individual privacy was not yet a serious problem at MIT, it quite possibly could become so in the near future. Therefore, it was essential to lay at once the necessary philosophical and moral foundations and to begin the development of procedures intended to ensure the effective protection of individual privacy.

A major reason for expecting privacy to become a serious problem is the growing exploitation of computers in the collection, storage and use of information about identifiable individuals. The pressure of numbers and of organizational complexity makes this trend unavoidable; in addition, any real benefits will result from the proper utilization of computers. On the other hand, the potential threat to the individual is also very real.

The use of computers can have subtle effects beyond the obvious ones associated with potential access to a person's entire life history. For one, the protection afforded an individual by disparate files, not easily seen or even known about, may be lost if these can easily be tied to central dossiers. For another, the handling of information can no longer be assumed to be "sloppy", so that conflicts or incidents better forgotten cannot be dismissed because the "information seems to be missing from the files". Also, the ease with which data can be recovered may prevent a person from avoiding knowing what he would rather not know.

In addition, with computer-based systems, the possibility of errors in the information or of misleading (or controversial) interpretations of events becomes of crucial significance, for these are much more likely now to be perpetuated permanently and to be readily available in centralized data banks. Among other dangers inherent in the creation of detailed dossiers is the possibility that the oversimplified descriptions of a dossier might become the public image of an individual; it might also, in the long run, affect his self-image.

The four major conclusions of the Committee identify certain basic rights and responsibilities pertaining to privacy. They are clear statements of attitudes and intent, but purposely leave considerable room for interpretation in various instances. The balancing of privacy rights against other pressing considerations, and the resolution of conflict between privacy rights of different people, present very difficult problems for which solutions will have to emerge from experience with many specific cases.

A. Responsibilities

Because of the relatively weak position of individuals, compared with that of information collectors and users, the institute has a special responsibility to protect the privacy of all its members. This includes not only making sure that privacy considerations are given proper weight in MIT operations but also protecting members of the community from requests from

outside the Institute that would violate their privacy.

The Committee recognizes, on the other hand, that, short of instituting rigid rules and procedures that would be inconsistent with the open and informal atmosphere of MIT, the protection of individual privacy will have to depend largely on the active cooperation and ethical standards of everyone in the community. It is essential, therefore, that all members of the MIT community accept the moral obligation of respecting as well as protecting the privacy of other members.

The Committee wishes to stress in this report that the legitimate claim to privacy of physical persons is shared also by private organizations and legal bodies (as distinct from the people who belong to them), such as a student society or the MIT Corporation, and offices (as distinct from the individuals that occupy them), such as the MIT Presidency. It is with respect to these organizations, legal bodies and offices that the conflict between right-to-know and right-to-privacy becomes sharpest. The Committee gave careful thought to and debated at length this question without being able to arrive at a satisfactory conclusion. Its general views are illustrated by the following comments.

Any person holding a position of authority in the institute administration or in a student society has a moral, if not legal, obligation to respond candidly to searching questions from the constituency directly affected by his authority, concerning policies, decisions and actions for which he is responsible, and about any other pertinent aspect of his official performance. On the other hand, his private thoughts, working hypotheses, intellectual experiments, consultations with other people and, in general, his activities preparatory to assuming official positions—whether recorded or not—are protected by a legitimate claim to privacy on the part of his office, a claim that his constituency has a moral obligation to respect and protect.

The Committee is unable to characterize in general what information ought to be generally available within MIT. It feels, however, that the practice of an academic institution should be to make information readily available to the community unless there is a specific reason for withholding it, as contrasted with the practice of making information available only when there is a specific reason for doing so. In particular, it would be helpful if information intended to be generally available were clearly identified as such, *a priori* whenever possible.

B. Rights

The relatively weak position of an individual with respect to the use of personal information that has been collected and stored necessitates also the *prima facie* recognition of certain rights accruing to him: the right to know, consonant with the privacy rights of others, what information is kept about him and the purposes for which it will be used; the right to correct possible errors and to append comments intended to

prevent misinterpretations; and the right to have a time limit set to the retention or use of potentially damaging information (analogous to a statute of limitations).

The meaning of these rights is straightforward, but their implementation raises very complex questions. The most difficult problem is presented by conflicts of the privacy rights of different individuals, e.g., the rights of the person who provides information versus the rights of the person to whom the information pertains; the rights of different persons in the same information (for instance, information in a medical record may relate to both the physician and the patient). Some suggestions are made below about mechanisms for resolving these conflicts.

Obvious practical problems arise also in controlling the use of information and its elimination from active files. Some broad recommendations are made below with respect to these problems, but specific solutions will have to be worked out by the offices responsible for each type of information.

The Committee wishes to stress in this connection that there will be costs that will have to be paid in dollars and in administrative inconvenience, for which provisions will have to be made.

V. Discussion of Recommendations

The recommendations presented in this report suggest some initial steps deemed essential to the protection of individual privacy and to the exercise of privacy rights at MIT. The following sections discuss the various factors that were considered in arriving at these recommendations, elaborate on those whose intent may not be clear, and offer some suggestions for their implementation.

The guidelines suggested in the first recommendation amount to a code of information ethics for individuals and offices within MIT. They purposely avoid setting up rigid rules and procedures because their implementation will have to vary from situation to situation. Yet it is essential that they be taken seriously and followed diligently throughout MIT. The primary responsibility for their implementation must rest largely on the heads of offices and on a relatively small number of other persons. However, in an open and informal community like MIT, the information privacy of each member will depend ultimately on the collective ethics of the individuals who comprise it.

A. Factors Relating to Collecting Information

1. Justification for Collection

Any educational institution, particularly one committed to a philosophy of experimentation and research, is likely to have a general tendency to collect as much information as possible about its activities. MIT is no exception. Moreover, given its tradition of experimentation in educational techniques, MIT finds itself in need of substantial, detailed data about its members, not only for administrative and educational purposes but for

evaluation of its educational experiments.

The administrative side of the institute is imbued with much the same traditions as the research and teaching staffs. Consequently, a natural tendency has evolved here too, leading to the collection of considerable information, particularly about students. These data are nominally for operational purposes, but also are of possible use for analytical, evaluative and research endeavors.

The institute offers extensive advisory and counseling services. A student, once admitted, is given considerable aid designed to help him profit from his tenure here, or to enable him to remain if he is in trouble. One result of these services has been a general proliferation of the records kept about individuals in central administrative and departmental offices and in the files of registration officers, advisors and other faculty members.

We can have no quarrel with the objectives of all this record-keeping. However, we must raise questions about the actual need for some of the information collected, the circumstances under which it is gathered, the duplication of records, the security of the information once recorded, the access to the information by persons outside MIT, and the ultimate disposition of the information.

A first injunction we make is that greater attention be paid to the simple question of *why* certain information is being collected; the burden of justification should be upon the office or person requesting or collecting the information. Specific rules governing the criteria for information collection cannot be established. In essence these boil down to developing the healthy habit of collecting as little detailed information relating to individuals as is necessary to adequately perform one's functions.

A second injunction is that the recipient of personal information regard himself as a trustee of the individual about whom he receives information. There is an implied contract with that individual regarding the use, dissemination and disposition of such information, and this understanding should be made as explicit as possible at the time the information is first collected and whenever it is transferred to others.

A third injunction is to recognize that pictures, as well as text, may constitute sensitive information. This is particularly true because they may be seen out of context. For instance, a photographic record of the presence of an individual at a controversial event does not describe the reason for his presence, and therefore may be highly misleading and possibly damaging. This suggests that indiscriminate picture-taking be avoided, and that pictures of controversial events be treated as sensitive information.

2. Implicit Coercion

One of the infrequently recognized aspects of information collection is that the request for information often includes an unrecognized element of coercion. Solicitation of information on appli-

cation forms for admission or financial aid, for example, has an implicit built-in sanction against non-compliance. Similarly, requests for information from individuals at MIT for administrative, educational or research purposes often carries the same kind of implicit threat. At times, a form of group behavior leads individuals to respond to requests for information that might in other circumstances be withheld—for example, when information is requested in a classroom situation.

Some of this is unavoidable. However, we believe those involved in the solicitation of information have the responsibility to be fully aware of this hidden pressure, and to respond appropriately. In our view, appropriate response means not only providing a clear statement about the use, dissemination and ultimate disposition of the information solicited, but also requires providing a candid evaluation of the possible consequences of giving or of withholding such information.

B. Sensitivity of Information

The sensitivity of information about an individual is not a simple attribute of the information. It is affected by the individual's attitude toward the information, the context of its origin and use, with what other information about the individual it is associated, and the possible future significance of the information in a largely unpredictable environment. Thus it is difficult to separate information according to the degree of sensitivity, and then to apply specific rules to different categories of information.

Nevertheless, an attempt at categorization according to sensitivity, is at least a step in the right direction. This leads us to make the following additional suggestions about sensitive information.

- 1) It should not be recorded if no further use is contemplated, or if it can be remembered for as long as it may be needed. Most often, a simple, non-sensitive note is enough to bring back to one's mind the necessary information.
- 2) It should be recorded separately from less-sensitive information, as in the case of medical information.
- 3) Data used for different purposes should be kept "functionally" separated, even if they are physically stored together (e.g., recorded on different sheets of paper even if in the same folder), to minimize accidental disclosure.
- 4) Duplicate records, particularly informal ones, should be avoided if at all possible because of the problems of maintaining control and of amending them all when amendment is necessary. When duplicates are unavoidable, strict rules for their handling and destruction are mandatory.
- 5) Copying of secondary records should be strictly forbidden.

C. Informal Records

Inevitably, informal records are made by faculty members and others in pursuit of their official responsibilities. For example, faculty advisors often keep detailed records of the problems of particular students as a means of doing a better advisory job. The

freshman advisors, in particular, are encouraged to keep notes on cards provided for that purpose which are then made available to other advisors the student may have in later years. At times, memos about student difficulties are written to the Dean's Office or Medical Department, with copies kept in local files. Obviously this is both a necessary and usually innocuous (in terms of privacy of information) practice. However, such informal records could be damaging to an individual's future career were they passed to the wrong hands or allowed to go outside the Institute.

We believe all persons involved should be made more acutely aware of the potential problems of informal record-keeping. They should, in particular, be encouraged to minimize the casual recording of sensitive information, and to destroy all such information as soon as practicable after it has served its purpose. The Freshman Advisory Council should take steps to make freshman advisors aware of these issues.

D. Pre-determined Life Span of Records

All information has a useful life span. However, it is the exception rather than the rule to find an office at MIT that has established procedures for automatic disposition of out-of-date records. The Office of the Dean for Student Affairs follows the commendable practice of destroying all but nominal information about students two years after graduation. However, much of the information destroyed in this manner may be found in other institute files which are not destroyed on any regular basis. While this situation cannot be completely corrected, the institute should enunciate a specific policy regarding retention of information, for the guidance of its several offices.

In this regard, at least three major problem areas bear discussion:

1. Review of Files

The review of voluminous files on a qualitative basis is expensive. This is particularly true in those offices where elaborate files may be built up over a period of time without specific structure—such as in departmental headquarters. The job of review should be easier in many administrative operations where considerable consistency characterizes the collection of information—for example, in the Admissions Office folders. As an on-going task, the expense of such review may be absorbed by most offices, but the problem of reviewing the backlog of information and of establishing appropriate procedures may well require additional funds.

2. Long-Term Needs

It is difficult to judge in advance what information is legitimately required for the Institute's own purposes of evaluating performance, and of determining the effect of changes and experiments. Much of this need could be satisfied with information kept in aggregate form and not tied to specific individuals. The burden of justification for maintaining individual records should lie with those who wish to retain the information, rather than with those who wish to destroy it.

3. MIT Archives

The very existence of the MIT Archives posed a unique problem to the Committee on Privacy, since the role of the Archivist in retaining information for future access appears at first blush to be diametrically opposed to the concern for privacy, which normally results in the destruction of information. While there can be differences of opinion among honest men as to the importance of complete documentation in the historical context, it seems clear to this Committee that the Archives have significant value to MIT which could easily be overlooked in the rush to ensure privacy at a time when privacy seems particularly threatened.

Any organization of the prominence of MIT has some sort of obligation to document its own history, both to meet its operational needs and to serve future historians in their analysis of the thrust of social events in which that organization played a part. With the emergence of the technological age, it hardly needs saying that MIT's role has been non-trivial in a host of areas. Thus its Archives may well prove to have significant historical value.

The resolution of many privacy issues results in imposing controls on the input side of information storage systems, which thereby restricts information retention and consequently the possibility of eventual retrieval. In the case of archival information, however, it is clear that artificial restrictions on input defeat the purpose; it is necessary therefore, to emphasize controls on the output side. The Committee recognizes this as an exception requiring perceptive control by the Archivist, as well as unusual discipline by the staff of his office in following policy and procedures.

Consequently, the following three recommendations relate to the question of simultaneously supporting the archival process and providing reasonable assurance for the privacy of the information involved:

- 1) The Institute, recognizing that the normal contents of the Archives may include sensitive information about individuals, should reaffirm the appropriateness of the Archives function.
- 2) Institute personnel and offices should be encouraged to submit to the Archives all information no longer germane to their operational needs. The decision on what material to retain in the Archives should be made by the Archivist and his staff, recognizing that they stand willing to establish special restrictions on access to particular information upon request by the individuals or office to whom it pertains.
- 3) The Archivist should formally adopt and publish a set of policies governing access to the Archives. A proposed set is given in Appendix I.

This Committee realizes that there are liabilities associated with these recommendations. In addition to the perception and discipline required of the Archives staff, there remains the matter of legal subpoena of information which the Archivist has no option but to provide (see App. 11). In large part, we believe that the

information is protected by the present lack of formal cataloguing and indexing procedures. (Most such information is not included in the MIT Library Union Catalogue, and the indices and card catalogues maintained by the Archivist himself are not open to public inspection.)

Since subpoena powers are not "fishing licenses" and usually must reference a specific document, it is unlikely that the Archivist will receive appropriately specific subpoena requests. This conclusion is supported by the fact that the Archivist has never yet had a subpoena served on him. Should future experience deviate from this pattern, the recommendations of the Committee should be re-evaluated.

E. The Rights of the Individual

Because of the inherent disadvantage of an individual with respect to the records that exist about him -- their accuracy, and their potential use by others outside his control -- we believe an individual should be deemed to have certain *prima facie* rights about information pertaining to himself. These rights include:

- 1) The right to decide for himself whether or not to provide information requested and to be candidly informed of the consequences, if any, of his decision.
- 2) The right to know the specific purposes for which information held about him will be used, to whom it will be disclosed, and its ultimate disposition.
- 3) The right to check information held about himself, to correct errors, and to append comments.

The first two rights have been discussed by implication in the preceding sections. The third one raises difficult questions that deserve further discussion.

The right of an individual to check information pertaining to himself cannot mean the right to see all records, since that could, in effect, violate the privacy rights of others. It does mean, however, that inspection of records about oneself should be a straightforward matter when privacy rights of others are not involved. It also means that diligent effort should be devoted to devising and implementing mechanisms that will permit the exercise of this right as far as possible without violating the rights of others.

Letters of reference and other recorded evaluations of one individual by another (e.g., comments about a student by an advisor) are common examples of information about which conflicts of privacy arise. There are, however, less obvious examples in which the consequences of disregarding such conflicts may be quite harmful to the very individuals whose rights MIT is attempting to protect.

A good example was brought to the attention of the Committee by the Director of the MIT Medical Department. A recent Massachusetts law grants to a patient or his attorney the right to inspect and obtain a copy of his non-psychiatric medical records. As a result of this law some physicians avoid recording medical observations that the patient might regard as derogatory, such as apparent

alcoholism or drug use. The potential future harm to a patient that could eventuate from the lack of such medical information is a direct consequence of disregarding an important conflict of privacy rights. The fact of the matter is that both physician and patient have privacy rights with respect to a medical record, and these rights may, at times, be in conflict. On one hand, the physician must be free to express medical judgments that could be unpleasant to the patient. On the other hand, the patient has a right to an accurate and adequate medical record. Additionally, the medical record is a chronicle of the physician-patient relationship, for it provides information about both.

The records pertinent to all professional relations, including the one between a student and his advisor, have characteristics that, like those of medical records, imply potential conflicts of privacy rights. It may be impossible to fully resolve all such conflicts, but it might be feasible to avoid some by properly structuring records according to who has primary privacy rights on each item. For instance, an advisor may find it necessary to write notes to himself about personal observations, hearsay evidence, or working hypotheses concerning a student, which he may want to recall at some later time. Notes like these amount to an extension of his own memory and as such, are totally private to him. To remain so, they should be left separate from information that other people may have to use. It is just the possibility that such notes might be misinterpreted or misused by someone else that gives rise to a legitimate desire to inspect them on the part of the individual involved.

Where conflicts of privacy cannot be avoided, the persons responsible for the records in question should make a diligent effort to explain their contents to anyone concerned about the presence of possibly incorrect, misleading or otherwise-damaging information about himself--without, of course, violating the privacy of others. Much can be accomplished informally if those holding the records have sympathy and understanding toward the legitimate privacy concerns of individuals.

Sharp conflicts of privacy that cannot be resolved informally are bound to arise sooner or later, and the institute should establish, ahead of time, appropriate ways of handling them. Some mechanism involving a disinterested third party, trusted by all persons involved, seems essential. Furthermore, any conflict of privacy that cannot be settled informally is likely to have roots in a deeper grievance which would have to be taken into account. If an MIT Ombudsman should be established, he would provide a highly suitable third-party mechanism for resolving conflicts of privacy. However, the Committee does not feel that it can recommend the establishment of an ombudsman without considering the other functions that he would perform. A less-formal third-party mechanism is suggested in Sec. H, following.

F. Interface with the Larger Society

The information interface with the larger society presents a variety of difficult problems because the social debate on privacy has just begun, and attitudes toward privacy still vary considerably from organization to organization and from person to person. Furthermore, it is not always clear when a member of the MIT community acts as such or as a member of the larger society. Thus, while general guidelines can be established, their implementation will have to depend almost entirely on the sense of responsibility and ethics of each individual at MIT. Two different problem areas are discussed below. In addition, the liability of institute records to subpoena is discussed in Appendix II, together with some suggestions about legislation that the Institute may wish to promote.

1. Information collected by External Agencies.

Institute personnel and facilities are sometimes used to collect information about individuals at MIT on behalf of external agencies, as in the case of manpower surveys. There can be no quarrel with the objectives of such data collections or with the appropriateness of the Institute's cooperation. However, the Committee believes that the Institute and its representatives have an obligation to persuade such external agencies to adopt guidelines with respect to the collection and use of information similar to those followed within the Institute. In particular, when information is solicited from MIT people, they should be told whether or not they are required to provide such information and of the possible consequences, if any, of not providing it.

When the Institute utilizes information collected by outside agencies, it also has a clear responsibility to try to influence these agencies with respect to the collection and use of personal information. An example is the information questionnaire used in the awarding of financial aid to undergraduates. In this particular case, the Committee was very surprised by the extremely detailed financial and business questions that the parents of applicants must answer (see App. III), without any indication of limits to the use of the information provided or of its ultimate disposition. It is far from clear that business information in as much detail as requested is necessary to evaluate the need for financial aid. In any case, the Institute should provide a clear statement as to the uses of the information, its protection within MIT and its ultimate disposition.

2. Requests from outside the Institute.

Precise rules or guidelines for release of information about individuals at MIT to organizations or persons outside the Institute are peculiarly difficult to formulate. Obviously, as an educational and research institution, one of the Institute's major responsibilities is to help students in their post-MIT placement, and similarly to assist faculty or other personnel who

seek positions elsewhere. Thus persons at MIT are frequently called upon to provide information that in some cases involves personal as well as academic evaluations.

We know of no way to lay out a specific list of "Instructions" that can serve as a guide in all situations for responding to outside requests. Basically, the primary reliance must rest on the common sense and good judgment of those concerned, plus more conscious efforts to alert the community as a whole to the issues involved. However, it is possible to delineate the kinds of information that can be supplied for each class of individuals: current and past undergraduate students, current and past graduate students, faculty members and other personnel. We believe that specific procedures relating to the release of information for each such category should be printed, distributed and publicized among the individuals and offices most likely to receive such requests.

These procedures should be prepared by the offices most directly involved. We believe that the following recommendations should serve as guidelines in establishing these procedures:

- a) No personal information should be given outside MIT without the consent of the individual concerned. This consent may be explicit or implicit, though we believe that wherever possible, the consent should be explicit. Thus for example, if a person has furnished information on an Institute placement questionnaire that stated that the information would be released to potential employers, then he has given consent to appropriate release of that information. Conversely, or course, when questionnaires carry no specific statement about release to others, information should not be released with specific permission.
- b) Often, an individual gives his implied consent to the release of information about himself, for example, when he applies for a position and suggests persons at MIT who may give recommendations. In such cases, he must assume that inquiries will be made about him. Even then, however, the information provided should be restricted to that based on professional relationships alone. Here, of course, only informed and good judgment can provide a guide as to what can be properly said.
- c) At times, administrative officers at MIT (such as administrative assistants in a department, or in a Dean's office), are asked about an individual's activities, as opposed to his professional performance. In these cases, we believe it is of great importance that a uniform procedure be followed: to respond only with minimal factual information--for example, whether a faculty member had been employed or not, and similar general data. All other information should be simply refused on the grounds that it is not authorized for release. Unless such a general policy is made known and consistently followed, the withholding of information in some cases, but not in others, may be interpreted as signifying the existence of "derogatory" material.

d) The response to government investigators checking for security clearances need not pose inherently different issues than those raised by any other requests for information from outside the Institute. Again, the basic reliance must be on the judgment of the person who is asked for an assessment of another individual. However, here we would emphasize strongly the importance of the policy that administrative personnel provide only minimal factual information about an individual's presence at the Institute, and refer all other questions to those who have known the individual in a professional capacity. When possible, the referral should preferably be made to the department chairman (or his designated representative) who may be expected to be more familiar with the issues involved in release of information than, as a rule, other faculty members. The department chairman, or other staff member, who is questioned about an individual's security reliability, must, of course, weigh more heavily than he would in the case of, say, industrial inquiries, an individual's activities outside his direct professional performance. Even here, however, it is essential that the privacy of the faculty/student relationship, and the special responsibilities of the university for unfettered intellectual development and debate, not be forgotten. Casual reporting of, in particular, a student's activities and ideas during the most critical period of his intellectual experimentation could mar his career for life. Even when a person is asked, or feels compelled, to act in his role of citizen of the larger society, he can express his candid opinion about the suitability of some individual for work requiring security clearance without divulging the information on which his opinion is based.

G. Physical Security of Information

Although our review of procedures relating to information records in the multitude of offices at MIT was not exhaustive, we did gain the impression that commonly it is assumed that personnel are conscious of the sensitivity of information under their control, rather than there being any explicit instructions in this regard. Certain offices, particularly those in which the volume of sensitive information is substantial, do have specific procedures. However, in some offices we found that files are unlocked or poorly locked, or given inadequate supervision during the day.

We suspect that the typical office does not fully appreciate the amount and degree of sensitive information that it maintains. The responsibility for recognizing this situation falls directly on the head of each office, who should ensure that all members of the office staff are aware of the need for concern over information security. Security measures in each office should normally include the assignment of explicit responsibility to a single person for the physical security of files and enforcement of procedures.

The Committee also took note of the growth of on-line management-

information systems in various parts of the Institute. The developers of such systems appear to be conscious of the anonymous, unauthorized access to them. However, adequate protection of such files depends on many factors, not all of which are under the control of those responsible for the files (e.g., characteristics of the computer system employed, and operational procedures of the computer installation). Furthermore, the actual security of a computer system may be difficult to evaluate to any reasonable degree of accuracy. The casual user, for example, may think the system has better safeguards than in reality it has. For these reasons, individuals and offices employing or developing computer-based information systems should be responsible for seeking the technical advice of the Director of the Information Processing Center (or his designate) with respect to the protection of sensitive information.

A special subcommittee has investigated the security of the computer systems currently operated by the Information Processing Center. Its report is included as Appendix IV.

The Committee recognizes that the protection of privacy in a computer system requires that certain features especially addressed to that problem be included in the system design from the beginning. Such features may involve significant costs in terms of money, operating efficiency, convenience, etc. It is precisely because of the natural reluctance to accept such additional costs that it is essential that proper consideration be given to the protection of privacy in the design and acquisition of new computer systems.

The Committee's review included a sampling of student organizations, particularly the student disciplinary committee. Here again, we found an inadequate sensitivity to the type of information that is being retained. The concerns and recommendations of this report are not meant to be exclusive of student organizations. Instead these recommendations and concerns may be more difficult to implement in this area because of the changing nature of the population involved.

H. Responsibility for the Protection of Privacy

It has been stated several times that the responsibility for the protection of privacy of information at MIT must, by necessity, rest with those entrusted with the collection, storage and use of personal information. On the other hand, this decentralized assignment of responsibility cannot be effective without explicit policies, supervision and effort. In particular, the Committee believes that three distinct functions need to be performed, as discussed below.

1) *Supervision*: As stated repeatedly above, a cost in resources and inconvenience will have to be paid to adequately protect individual privacy. Some reluctance to incur such costs can be expected in all quarters. Thus, it is essential that one member of the Administration be given specific

responsibility for supervising all Institute operations from the point of view of privacy and for requesting the necessary resources to do this. In particular, he should see to it that adequate procedures are devised and implemented by each administrative office, including Schools and Departments.

2) *Policy Evolution*: Privacy of information is one of the social issues to which society has only recently begun to pay attention. Because experience with specific cases has not yet accumulated, there is little foundation on which to build specific policies and procedures. This is as true within MIT as in the larger society.

The Committee has made a start in gathering evidence and developing experience on privacy problems, but this effort must continue in the future. Also there have been enough instances in which the Committee has been asked for advice on privacy problems to foretell an increasing future need to consult people with special expertise in this area. Above all, there is need for some entity responsible for feeling the pulse of MIT with respect to privacy matters on a continuing basis, and for re-evaluating, revising or proposing policies as appropriate.

These considerations have led the Committee to recommend the appointment of a standing privacy committee, reporting either to the President or to the Faculty, with the following responsibilities:

- a) To gather evidence and develop expertise with respect to privacy problems.
- b) To be available to the MIT community for consultation about matters involving privacy of information.
- c) To propose or review policies relating to privacy of information, either on its own initiative or at the request of the President or of the Faculty.

The committee should consist of three members, one selected from the faculty, one from the student body, and one from the remainder of the MIT community. The members should serve for a term of three years, with one being appointed each year. The long term in office would allow each member the opportunity to develop expertise in privacy matters.

The proposed committee is intended to constitute a focus of interest, expertise and responsibility in the realm of privacy. Its small size should permit it to function very informally and to convene meetings on short notice. It should remain free from operational and judicial responsibilities, for these might impair its independence and reduce its accessibility to the community. It is expected that the committee would maintain close working relations with the member of the administration responsible for overseeing operations, as recommended under (1.) above. However, the two functions should remain independent of one another.

3) *Third-Party Mechanism*: The need for a third-party mechanism to resolve conflicts of privacy that cannot be handled informally has been discussed earlier; and it was

suggested that this function would best be performed by an ombudsman if one should be instituted at MIT. In the absence of a general ombudsman, the present situation does not seem to warrant the appointment of a person to play a similar role with respect to privacy matters only. It would be preferable to delegate this role temporarily to the standing privacy committee recommended above, with the understanding that it would handle this assignment very informally, as an extension of its normal counseling functions. More formal and separate provisions could be made subsequently, if and when this additional role should interfere with the main responsibilities of the privacy committee.

I. Behavioral Research and Individual Privacy

The protection of individual privacy in behavioral science research raises most of the same questions as in the cases of personal information collected for other purposes and in addition, some special problems peculiar to behavioral science research. The Committee believes that there are potential problems for MIT in this area and that the seriousness of these is likely to grow for the following reasons:

- 1) The increasing recognition of the individual's right to privacy of information and privacy of personality.
- 2) The increasing scale of social science research that is being conducted in universities.
- 3) The increasing ability, and tendency, through computerized data-processing, to centralize--and facilitate access to--data collected in varying forms.
- 4) The increased sophistication of behavioral science research techniques which are capable of recording data that individuals may either unknowingly contribute or contribute without an understanding of precisely what is being elicited.
- 5) Related to the last point is the increasing difficulty, due to the sophistication of behavioral science research, for an individual to give informed consent to his participation.

1) *Special Problems for a University*: When behavioral science research is conducted within a university, the following additional factors come into play.

a) There is a tendency for students to provide information on admission forms, financial aid forms, etc., which they might not wish to disclose in other circumstances or for other purposes. The increasing growth of educational research within the Institute itself raises the possibility of information's being utilized for reasons for which it was not intended, with possible infringements of individual privacy.

b) Students are to a great extent "captive groups," hence have a real bias toward participating in experiments designed by their professors and/or conducted in their classes. Uncertainty as to how the authority figure will regard failure to participate in an experimental situation, even when the student may regard the experiment as a possible infringement on his privacy, may tip

the scales toward acquiescence. c) When subjects outside the university are used, the "white cloak" of academia provides an aura of scientific sanctity to the public, which can lead to uncritical acceptance of and participation in university-sponsored experiments that violate privacy.

d) With outside subjects too, the sheer intellectual power and skill of the researcher may enable him to persuade reluctant subjects to participate in his research.

The overall situation suggests that behavioral science research may be viewed with greater suspicion in the future. Although we might not state our position so strongly, we agree in general with Ruebhausen and Brim when they state that "it is, perhaps, becoming imperative now to define how the interests of the community--whether in scientific research or law enforcement or economic growth--can be accommodated with the need for privacy. The consequences of the failure to resolve it are predictable; they begin with the recoil and revulsion of the community; they conclude with arbitrary legislation."

2) *Awareness at MIT*: The MIT Committee on the Use of Humans as Experimental Subjects is already concerned with issues of invasion of privacy and of the use of deception in both health/medical and behavioral science research (See Application Form of the Committee, Appendix V). However, questions of individual privacy fail to be raised in many behavioral science investigations conducted at the Institute because the experiments are not perceived by the principal investigators as involving the "use of human subjects." Such efforts include human-engineering studies, survey research, public opinion polls, "in depth" interviews, psycho-physiological research, and others.

It is our impression that many principal investigators do not understand or do not take seriously their formal obligation to seek approval of their investigatory procedures from the Committee on the Use of Humans as Experimental Subjects. Some of them are not aware of the existence or of the role of the committee. Moreover, the use of "Experimental" in the committee's title leads some investigators to assume that their informal research activities with human subjects do not require approval.

We believe that every investigator has a clear obligation to protect each individual against revealing information about himself that he would prefer to keep private.

We believe, also, that the obligation of all those engaged in research involving human subjects to submit their proposals to the above committee should be given widespread, formal publicity to the entire Institute community every year, so that everyone is aware of his privacy rights, and knows that no such research may proceed without approval from the above committee.

3) *Informed Consent*: A significant problem associated with obtaining informed consent from persons participating in behavioral science research is that it may be im-

possible to conduct a proposed experiment if a subject is fully aware of the purpose of the investigation. Admittedly, this problem may be an issue of experimental bias rather than one of privacy. The dilemma is that between the investigator's desire to obtain new and professionally valuable data and his responsibility to protect both the psychological well-being and the sense of privacy of his subjects. Concern for individual privacy in the case of physical experiments is usually limited to assuring the security of the personal data collected. In the case of behavioral science research, however, it is possible that a subject may inadvertently reveal information about himself that he would otherwise keep private; or he may become accidentally aware of unpleasant aspects of his personality which might better not be brought to his attention. In addition, there are circumstances when informed consent of the subject is not possible, as with young children, psychotics, or senile people, or where external pressures obscure the meaning of "consent" (e.g., as when remuneration is offered for participation).

The Committee believes that it is too early to articulate a set of formal rules covering "informed consent". Informed consent before some investigations would violate methodological canons of good research. In these cases, the privacy of the individual must be protected in advance through a searching review of research objectives and of proposed experimental procedures. Not only must the necessity of proposed research procedures be questioned if they violate individual privacy, but the importance of the research objectives must be balanced against any possible harm that might accrue to individual subjects. Of course, formal review of every variation in and experimental design is not necessary when individual privacy and overall safety are not adversely affected by procedural changes.

Legal and professional standards for experiments in the health and medical fields have evolved over the past 100 years in contrast, professional standards are not so well established in the newer social science fields. For the time being, we must depend on good judgement and sensitivity to the problem, while professional and legal codes are evolved comparable to those in health and medicine. The lack of specific norms should not, however, imply lack of obligation on the part of investigators; rather, it makes the need for self-discipline stronger.

4) *Confidentiality of Research Data*: Outside the research procedure, information obtained from or about participants in behavioral research must not be associated with the participants by name or by other identifiable characteristics without their explicit permission. Also, the identity and behavioral outcome of subjects must not be revealed to people outside the research team. Whenever possible, a "double blind" procedure should be employed so that even the research team may remain unaware of the

subjects' identities. It is the responsibility of the principal investigator to employ this and other special techniques to minimize the chance of inadvertently revealing the identity of subjects.

5) *Specific Recommendations*: Because of the special, additional problems raised by behavioral science research, the Committee makes these specific recommendations:

a) Believing that the protection of individual privacy in behavioral science research falls naturally within the purview of the existing Committee on the Use of Humans as Experimental Subjects, we recommend that the assignment of this responsibility for devising, issuing and enforcing regulations for such research be reaffirmed officially.

b) We recommend that the MIT community be formally notified each year of the charter and membership of the Committee on the Use of Humans as Experimental Subjects. This will serve to remind principal investigators of their obligation to submit research plans for approval whenever human subjects are used; and it will periodically warn prospective subjects (especially students) against participating in experiments that have not been formally approved by the Committee on the Use of Humans as Experimental Subjects.

References

- Westin, Alan F., *Privacy and Freedom* (New York: Atheneum, 1967), p. 7.
Reubhausen, Oscar M. and Brim, Orville G., Jr., "Privacy and Behavioral Research", *Columbia Law Review*, Vol. 65: p. 1192.

Appendix I

Statement of Proposed Policy for the MIT Archives

Prepared by Professor E. Neal Hartley, Institute Archivist

1. The Institute Archives exists to serve the needs of MIT and those of historians and other scholars.

2. In making materials available the Archivist bears responsibility for exercising such control as will avoid, to the extent practicable, jeopardizing the legitimate concern for privacy of individuals.

3. Except for published items and matter that has received broad circulation within the Institute, materials in the Archives do not appear in the Union Catalogue of the MIT Libraries; and the Archivist's card catalogues and other indexing devices are not available for inspection to anyone but the staff of the Archives.

4. Materials are made available for use or copying for a specified purpose, at the direction of and with the express permission, in each case, of the Archivist according to this evaluation of the need of the investigator and of the interest of the Institute and of any individual whose privacy might be involved.

5. All use of materials takes place under the full supervision of the staff of the Archives.

6. No materials leave the Archives premises except for copying, under strict control, in the Microreproduction Laboratory or,

in the custody of a member of the Archives staff, at Graphic Arts.

7. The user of unpublished materials in the Archives, whether in the original or in copy, must agree by signed statement not to use such materials for any purpose other than that specified, nor to give, loan or disclose to others, nor to publish any part of them, without written permission of the Institute Archivist and the Director of Libraries.

8. In the case of materials that are not the property of MIT, the permission of the owner(s) is additionally required.

9. Materials deposited in the Archives subject to covenants between MIT and donors may be used only according to the stated terms.

Appendix II

Legal Aspects of Information Privacy

Prepared by Professor Charles Fried, Harvard and Richard J. Moen, MIT

In considering the Committee's work on the privacy of information within the present legal framework, we have surveyed the current state of the law and have made recommendations where action can be taken both within the MIT system and in promoting judicial and legislative efforts to expand present legal protections.

Response to Authoritative Demands by Governmental Agencies.

First of all, we must recognize the fact that government agencies and courts have the power to subpoena information on individuals that MIT possesses. At this time, the only information that is not subject to subpoena is privileged information in medical or psychiatric files or privileged communications with a religious counselor. We shall return to these protections later.

A specific procedure should be established to handle instances where an outside agency with subpoena power confronts MIT with a request for private or sensitive information that employees have been instructed not to release. Such demands should be handled by a single officer within the Institute administration who can review the propriety of the demand—obtaining legal advice if appropriate—and who can argue for restraint on the part of the outside agency in the use and release of any information that must be supplied. Thus, all officials and clerical personnel should be instructed to state that they have no authority to release information in such circumstances until they receive a direct order from this officer stating exactly what information is to be made available on such demands.

As mentioned in the body of this report, the Institute should avoid these problems of compliance with coercive demands so far as possible by keeping only that information of a sensitive nature for which a serious present or expected need exists. Accordingly, each department should evaluate the necessity of keeping any records it possesses, and should destroy all sensitive information as soon as it is no longer needed. Keeping such information is

precarious for a number of reasons and, if there is no affirmative legal obligation to keep it, there is no reason to incur the risks and difficulties involved in having it.

Privileged Communications

(At the outset it should be noted that the university can generally assert a privilege shielding it from liability for defamation for release of privileged information where it divulges such information without the individual's specific consent e.g. revealing disciplinary actions and circumstances. The basis for this immunity exists only if the release is judged to be: in good faith, in pursuance of a valid interest, a statement limited in its scope to this interest, a proper occasion, and publication in a proper manner and to proper parties only.)

In both common law and statute law there is a recognized privilege protecting communications in certain relationships. This privilege, which originally covered the attorney-client and husband-wife relationships has been extended through legislation to cover the physician-patient and clergyman-congregation relationships. The Massachusetts legislature in 1968 enacted into law a statute protecting confidential communications between psychotherapist and patient (Mass. Ann. Laws, 1968, Chapter 418).

In the university, it can readily be seen that only information contained in medical files and psychiatric files is covered by this privilege. Moreover, confidential communications with a religious counselor are also protected. But there is almost no recognition of a general privilege for a university to withhold information received from and about individuals as such. A Michigan statute passed in 1963 is unique in extending this privilege to all information and records regarding students in the possession of any school employee.

Another special concern, especially with the advent of the computer age, involves the problem of the third person. When a privileged communication is overheard, whether by accident or design by some person not a member of the privileged relation, such a person may testify as to the communication. Moreover, when a privileged paper comes into the hands of a third party, it is no longer protected by the privilege that is, privileged information obtained by a third person or agency may be admitted in evidence in court proceedings. Accordingly, we should consider safeguards to protect information from falling into other hands as discussed earlier in this report.

Promoting Changes in the Law

The law has been expanding with respect to the relationships covered under the privilege of confidential communications. There is a growing public recognition that relationships exist whose confidentiality should be protected. The general right of privacy has become a staple item in the press, government proceedings, law reviews and social science journals. We can take advantage of this trend to extend protection to some currently uncovered academic situations.

The privilege to withhold information is an exception to the general duty to testify and, since this privilege is an obstruction in the truth-getting process, it has been granted reluctantly. It is generally agreed that four conditions must be met before the privilege is granted: (1) the protected communication must have been made in confidence; (2) the confidentiality must be necessary to the existence of the relationship; (3) the relationship must be one that the community wishes to foster sedulously; and (4) the injury to the relationship caused by disclosure must be greater than the benefit that would be gained by increased access to the protected information. Moreover, there are two circumstances that are present, together or alternatively, in most relationships in which the privilege has been granted: the impulse to confidentiality is so strong that the party having the information is likely to lie or refuse to answer and be held in contempt rather than break a confidence; or information is such that it probably would not have been revealed if the privilege had not existed.

We can probably best extend this privilege to include the guidance relationship. Within the balancing tests required in condition (4), an argument can be formulated on the grounds that this relationship should be encouraged since we want a student to communicate freely with his advisor or dean regarding such matters as his academic performance and social problems; and personal information and counselling are essential to a personal relationship founded on trust and mutual respect. Since a student encounters many problems of a personal nature which are not handled by a psychiatrist or a religious counselor where the communications would be protected, we can see an extension of the present protection afforded privileged relationships into the domain of the guidance relationship. Moreover, the first three conditions can be met by arguing that information given by a student is held in confidence and that this confidentiality is necessary for the reasonable functioning of the relationship.

However, an attempt to extend this coverage to other records and communications would be much more difficult to defend since it is less clear that confidentiality is necessary for the existence of these relationships. Furthermore, it could be difficult to argue that the social benefit received from protection would be greater than the harm done by disclosure. As an example, we can consider the area of disciplinary proceedings. In this case, society may demand information regarding a student's disciplinary record for use in another legal proceeding outside the jurisdiction of MIT. This information may be necessary for purposes of criminal or civil actions arising out of this misconduct. However, it could be argued that minor infractions are relevant only to the MIT community, and should not have to be divulged to outside agencies.

There is, finally, another as-yet-undeveloped ground of privilege; that is academic freedom. Starting with Justice Frankfurter's concurrence in *Sweezy v. New Hampshire* and carrying through the recent loyalty-oath cases, the Supreme Court has shown a sensitivity to the value of academic freedom as a facet of freedom of speech and association. Moreover, in protecting that freedom, the Supreme Court has focused not only on action punishing or prohibiting speech and association, but also on official action--such as compelled disclosure of political views and associations--that tends to have a chilling effect on the exercise of those freedoms. It could be reasonably argued that compelling faculty or administration to reveal attitudes and ideas expressed in an academic context would have this chilling effect on the conduct of academic discourse. There is, thus, the germ of a privilege which could be argued to prevent compelled disclosure of academic records, evaluations, term papers and the like.

Recommendations To Expand Legal Protections

1. In the belief that we can and should influence the growth of the law, we should cooperate with other interested groups such as the Council on Higher Education, American Association of University Professors, and National Union of Students and coordinate judicial efforts among these groups. If a case develops in which the right of privileged communications could be extended to the university environment, arguments can be made for this privilege by the filing of *amicus* briefs from as many supporters as possible, including other universities.

2. Another movement can be developed to promote definite legislation extending the privilege to all academic relationships, using the Michigan statute as a model. Once this principle has been established, we can present restrictions to keep the privilege from being too broad in its coverage. Just as the attorney-client privilege is limited to information received in the attorney's professional capacity, restrictions can be written to limit the academic privilege to communications deemed essential to the full and satisfactory maintenance of the protected relationships. Moreover, the use of this privilege should not be at the discretion of the university official but with the individual who may waive this right if and when he desires. Also, just as the Massachusetts psychiatrist-patient privilege states, a section should be added to prevent any third party from testifying as to the privileged information.

Appendix III College Scholarship Service Parent's Confidential Statement -- College Form

College Scholarship Service
Explanation
Instructions
Parent's Confidential Statement -
College Form
Supplement A

Supplement B
(The Work Sheets have not been included.)
(Samples of these items were appended.)

Appendix IV On-Line Data-Bases

Report of the Subcommittee on On-Line Data-Bases

The discussions of the Subcommittee on On-Line Data-Bases began with the acceptance of two initial premises concerning data at MIT.

1) The Subcommittee was not to concern itself with how the data that were to be stored in a database were collected.

2) The Subcommittee recognized that the responsibility for the security of the data stored in his data-base rests with the owner of the data.

In order for the second premise to be accepted in the MIT community, owners of data must be aware of the procedures employed in the Institute's Information Processing Center and also of the various levels of threat to which their data may be subjected. We must also work toward acceptance of and the ability to enforce the ideal that conversion of electronically stored data involves the same issues (theft) as the conversion of written documents.

For the purpose of this Subcommittee's work a data-base was defined as a collection of data stored in any medium from which entries in the data-base can be retrieved. One subset is a data-base so stored as to be accessible by a computer, e.g., data-bases stored on punch cards, paper tapes, magnetic tapes, disk packs, etc. The particular concern of the Subcommittee was the computer-accessible data-bases that are already stored on-line, in either a batch-process or time-shared environment.

The Information Processing Center (IPC) operates four computer systems at MIT:

1) A batch-processing facility operating on the IBM 360-65-40 computer under the OS-360 Operating System;

2) A time-shared facility operating on the IBM 360-67 computer under the CP-CMS environment;

3) A time-shared facility operating on the IBM 7094 computer under the CTSS environment; and

4) A time-shared facility operating on the GE 645 computer under the Multics environment.

For each of these systems, the user is subjected to five different types of threat with varying degrees of risk. The types of threat are espionage and theft; corruption and subornation; actions by "devious and tricky programmers"; casual snooping; and accidental exposure or malicious destruction. Let us briefly consider each of these threats:

1) *Espionage and Theft*: With probability one, anyone who sufficiently wishes to steal a data tape or printed output can do so. On the other hand, there is little additional that can be done short of taking the extreme step of

physically securing the IPC building and requiring identification upon entry, etc. In addition to threats existing within the building, the user of remote consoles should be aware of threats relating to telephone taps. For example, a suitably modified console, tapped across the telephone line from a console to the computer, will print all the data being transmitted on that line. Short of recourse to coding schemes (such as the one-time-pad) at both the console and computer, nothing can be done to suppress this threat.

2) *Corruption and Subornation*: This threat is closely associated with the programmers and operators who are entrusted with the care and maintenance of the systems. These individuals have the usual opportunities of people in any organization to misappropriate the information that flows through their hands. The Center has followed standard procedures for such situations and not much more can be done without, again, going to a system that insures the physical security of the building.

3) *Actions by "Devious and Tricky Programmers"*: The three time-sharing systems are reasonably protected from this threat. However, on the batch system which operates under OS-360, there is no protection with respect to this threat.

4) *Casual Snooping*: The three time-sharing systems provide very safe environments with respect to this threat. But again, there is no real protection in the batch environment.

5) *Accidental Exposure or Malicious Destruction*: All four machines have reasonable protection against these threats although OS-360 causes some problems on the batch system.

In addition to these general observations with respect to the five types of threats, additional specific comments can be made about each of the four computing systems:

Batch System: As we have indicated, this system operates under OS-360. Under OS-360, the supervisor is not protected at present; thus, a user can commandeer the entire machine, thereby gaining access to all on-line files. Furthermore, there is no access protection of the catalogue. In addition, while tapes and set-up disk packs require authentication characters, these characters are derivable by a simple algorithm from the tape or disk number. Bulk output is available only by presentation of a ticket indicating that you submitted a job. Data stored within the system are only slightly more secure than a book in the library. *The Subcommittee recommends that this system not be used to process or store sensitive data.*

CP-CMS: The special problems that occur on this system relate to its use of OS-360 in the handling of tapes and disks (these procedures are essentially identical to those for the batch system described above) and in the procedures for picking up bulk output at IPC. The system specialists at IPC can show how, with care, sensitive data can be processed in this system.

CTSS: This system can be used for the processing of sensitive data with little fear of disclosure providing reasonable protective measures are taken. Several items should be kept in mind: In order to read a tape, a password associated with that particular tape must be given; however, when writing a tape, passwords are not checked, making destruction of data a simple process if the user has a tape quota. On the CTSS system, all data and program files stored on the disk are "backed-up" by system "archival" tape files. These archival tapes are stored in open racks in the machine room at IPC. The Subcommittee does not consider this to be a serious threat for two reasons: First, the tape format is extremely complex and archival tapes are not mounted at the request of a user. Second, restoration of a file is made to the original directory. (Cross-directory restoration is possible, but it requires special permission.) On the other hand, output printed at IPC is available only in an unsupervised area.

Multics: The Multics system is, by far, the best system in terms of its ability to protect the user's data. The access-control provisions of this system are essentially fool-proof. However, there is one area in which care should be exercised--the area of data storage on disk packs and tapes. In both instances, there is the issue of the physical security of the computer room. Computer operators are not security guards. In the case of data storage on tapes, there is one additional problem. The Multics system views tapes as user-owned entities. Thus, the system does not verify, via authentication characters, etc., that you are the owner of the tape and can therefore make use of it. Hence, users with sensitive data should exercise special care when they use off-line storage media.

With this as background, the logical question to ask is: "What should the potential user of a system know before he commits his sensitive data to the system?" Summed up, he should thoroughly understand the limitations of the system he proposes to use! As he uses the system, he should carefully monitor his files, etc., to see if unauthorized use is being made of his data. (On the time-shared systems, he should keep a log of each login, etc., and always verify this against the message of the day which provides information on the last logout.) He should also use care with his listings. Listings which contain sensitive data should not be left lying around in either his own office or public console areas.

At present, three of the four computer systems on campus can be used to process sensitive data if reasonable care is exercised. Additional features such as audit trail to monitor and record who accesses each file and a "trap attribute" which would require the system to call an indicated program if unauthorized users attempt to access specified data files are being considered for implementation on the Multics system. These along with better procedures for handling bulk output will permit one to handle

sensitive data in that system with minimum concern.

John G. Gaschnig
Dean L. Jacoby
L. Alan Kraning
John F. Rockart
Robert H. Scott
Carla Vogt
James D. Bruce, Chairman

Appendix V Application for Approval to Use Humans as Subjects

MIT Committee on the Use of
Humans as Experimental Subjects
MIT Clinical Research Center

(A sample application form was appended. Copies of application forms are available from Warren Point, M.D., in the Medical Department.)

Ad Hoc Committee on the Privacy of Information at MIT

Prof. Eugene B. Skolnikoff,
Chairman, 1968-69
Prof. Robert M. Fano, Chairman,
1969-71

MEMBERS

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R.M. Fano	1968-71
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R. J. Harman	1969-71
J. A. Meldman	1969-71
R. J. Moen	1968-69
Daniel Rich	1968-69
J. A. Rosenblatt	1968-69

Faculty Agenda

The final regular faculty meeting will take place today at 3:15 pm in Room 10-250. Topics on the agenda include the election of officers and new members of standing committees, a proposal for an S.B. degree program in Interdisciplinary Science, and reports from the Committees on Curricula, Health Sciences and Technology, Undergraduate Admissions and Financial Aid, and Educational Policy.

Alumni Fund Gains

In this year of tight money the Alumni Fund is, strangely enough, breaking many of its own records.

"It's contrary to the economy, at least," says Kenneth Brock, '48, Director of the Alumni Fund.

"We haven't been doing anything different," Mr. Brock remarks. "Just working harder."

Telephone soliciting, one of the two major efforts the fund makes, has been stepped up this year. The Alumni Fund has called some ten thousand of the 48,000 so-called active alumni this year. Last year calls went out to only about 2,500 alumni.

The fund also has organizations in 265 communities across the country to solicit alumni on a regional basis—more such groups than ever before.

Mr. Brock thinks that sentiment attached to the impending retirement of Corporation Chairman James R. Killian, Jr., helps explain the fund's surprising success this year. He largely discounts any effect this year's lack of political activity on campus might have on alumni contributions. "Last year we took a beating from the large donors," he notes. "Most of our major contributors make their gifts before January 1, and that was before the takeover of the president's office, Kent State and Cambodia."

The fund receives gifts through two channels. Some money comes directly to the fund, while some goes through the treasurer's office first. The fund receives two broad types of donations. Certain contributions are designated for a specific use, such as new buildings and named scholarship funds. The classes of 1922 and 1926 have established professorships with their donations. Unrestricted gifts are transferred to the Treasurer's Office, where most are used "to improve student environment," defined to include student housing, financial aid, and general student service facilities.

Six Elected to American Academy

Six MIT professors were among 117 leading scholars, scientists, statesmen and artists elected to the American Academy of Arts and Sciences last week.

They are: William F. Brace, professor of geology; Paul E. Gray, dean of the School of Engineering; Richard H. Holm, professor of chemistry; William F. Pounds, dean of the Sloan School of

Management; Eugene B. Skolnikoff, head of the Department of Political Science; and Frederic G. Worden, executive director of the Neurosciences Research Program.

One of America's oldest scholarly societies, the American Academy of Arts and Sciences was founded in 1780 by John Adams. Since its founding, many national leaders and distinguished scholars have been included in its membership. The Academy's principal activity is to sponsor interdisciplinary study projects on topics in the public interest. In recent years these projects have included studies on the future, made by the Commission on the Year 2000, a series of seminars examining aspects and causes of poverty, studies on arms control and a comprehensive examination of the role of higher education in contemporary society.

Come and Get 'em

Publications now available at the Information Office (Room 7-111) include:

How to Get Around MIT, a comprehensive guide to people and places at the Institute,

Three new reports from the MIT Commission, one each from the working groups on academic research policy, graduate and postdoctorate education, and the judicial process at MIT,

Pamphlets from the Alumni Fund, whose annual drive is now under way,

Details about Alumni Homecoming (June 6-7) and registration forms for alumni who would like to attend,

Information about the Technology Nursery School.

Lightening the Load

Soon members of the Institute community will notice that certain areas are not as bright as in the past. Also, these same spaces may seem a little cooler. This is the result of implementation of a program to conserve energy and, in turn, to cut down the increased costs of utilities. Physical Plant personnel are taking the first steps by turning off light switches wherever possible.

How much will be saved? Frankly we don't know.

We do know that one 40 watt fluorescent tube burning constantly for 24 hours will cost the Institute two point two (2.2) cents. This is the cost of the simple light energy. In an air conditioned building there is an additional cost, that of removing the heat generated by the fluorescent tube. This adds another point four (0.4) cents to cover the cost of refrigeration needed, for a total of two point six (2.6) cents per single 40 watt tube for 24 hours. If the tube is off half the time, we save half the costs.

How long a fluorescent tube will last is determined partly by how often it is turned on and off. Fortunately the lifetime of fluorescent tubes has increased during the past ten years. Now the

break-even time is about 9 minutes, or 8½ minutes in an air conditioned building. So, turn off the lights when you leave your area for more than 9 minutes. The light you save may help to keep you cooler.

Mrs. Johnson Feted



Mrs. Johnson, left, receives gift from Matrons chairman, Mrs. Robert Newman.

—Photo by Margo Foote.

Mrs. Howard W. Johnson was honored last week by the MIT Matrons at their annual meeting and luncheon.

Honorary chairman of the Matrons since 1966, Mrs. Johnson will leave that post when her husband, President Johnson, becomes Chairman of the MIT Corporation in July.

In the Matron's monthly bulletin, Mrs. Elias Gyftopolous paid tribute to Mrs. Johnson by saying, "Betty Johnson has been much more than an honorary chairman. She has worked harder and with more dedication than most of us; she has kept her composure and serenity in troubled moments; she has guided us in new directions."

More than 200 Matrons attended the luncheon in the Sala de Puerto Rico. A special program of music was presented by the MIT Gilbert and Sullivan Society.

Situation in Seattle

Unemployment in Seattle has reached 20 per cent. Forty thousand employees have been laid off at the Boeing plants there and another 10,000 soon will be, but MIT men in the area seem to be taking the situation calmly.

Mrs. Evelyn Yates, Alumni Placement Office, went to Seattle this month at the request of the MIT Club of Puget Sound. In three days she talked with 23 former students about their job situations. Only 2 of the alumni who came to visit her at the Boeing Personnel Office seemed seriously upset by the situation, although 5 of them were already unemployed.

Everyone that Mrs. Yates talked with in Seattle, including the President of Boeing—who is not job-hunting—expressed appreciation for MIT's concern and generosity in sending her out to the West Coast to interview. Many of the men said that other employees envied them and wished that they had colleges equally thoughtful.

Although Seattle is considered a one-company town—Boeing employed 100,000 of the state's residents during its peak a few

years ago—it is also an active seaport and a growing industrial area. Some displaced Boeing personnel have done fairly well as consultants or have switched to new fields of endeavor in other local companies, usually at lower salaries. For those who have not found new jobs the layoff is not yet a total disaster. Boeing gives long advance notice of layoffs and makes generous severance pay provisions.

Most of the MIT men have no serious intention of leaving Seattle. They love the place, Mrs. Yates says. The most relaxed 'jobless' man she talked with commented: "What's the use of job-hunting when there aren't any jobs?" and added that his wife had gone back to work and he was doing the shopping, cooking and housekeeping and finding it "not bad at all."

LIS Commencement

The graduation exercises for the first class to complete the two year Computer Technology course in the Lowell Institute School will take place on Thursday evening, May 27, at 8 p.m. in the Little Theatre at Kresge Auditorium. Professor John J. Donovan of Electrical Engineering, who conceived the idea of such a program, will be the graduation speaker. Everyone is welcome to attend.

It's a Nuisance, But...

"But WHY do I always have to fill out a form? I'm sick and want to see a doctor. I didn't come here to write my life history on a piece of paper!"

This complaint is heard frequently by staff members in the MIT Medical Department. Anyone who goes there to see a nurse or doctor or to visit one of the clinics has to fill out an "encounter form." Information required on the form includes: name, social security number, birth date, address, phone number, sex, insurance information, campus location, relationship to MIT, date and time of the visit, and reason for the visit.

At first glance, the encounter form is rather awesome. Printed on standard size paper, it is covered with spaces to fill in, boxes to check and lots of hieroglyphic code numbers. But don't panic. The patient fills in only about a third of the form. Doctors, nurses and other medical personnel must cope with the remainder.

Besides, it doesn't take that much time—unless, of course, the patient has to fish through his wallet, pockets and notebooks to find his social security and insurance certificate numbers.

Contrary to popular belief, the encounter forms are not busy work to keep the patient occupied until a doctor is free. The information on the forms provides the basis for statistical analysis of the department's overall operation and effectiveness.

In the past a record was kept of the total number of visits made to the Medical Department by manually counting small slips of

paper filled out by each patient. As the Institute community grew and demands on the department increased, the manual counting system became inefficient.

Last summer a computer program was devised to facilitate the counting process. Medical personnel soon realized that the computer could provide other useful data about the use of the department and the health of the community. By feeding the information on the new encounter forms into the computer, the staff can easily determine what segments of the Institute are using the Medical Department, what facilities are used the most, and what types of illnesses are being dealt with. By analyzing long-term statistics the Medical Department also can decide which services should be expanded and how to improve medical care for the community.

Steps are being taken to reduce the amount of writing necessary on the encounter forms, for patients as well as medical personnel. One suggestion, according to Mrs. Marie Jeon, assistant administrative officer of the Medical Department, would make use of an ID card. The cards, with basic information about each person in the community, would be used to imprint information on the encounter forms, in the same way as credit cards do.



Connie Houghton with TCA President Bob Churella, '71. Many of Connie's friends—including a number of former students—gathered at a reception given by TCA to honor her as she retired after 35 years at the Institute. At a dinner following the reception, Connie received a gift from the students in appreciation of her sprightly counsel. Yesterday at the Awards Convocation she was given a certificate of appreciation for her long and devoted service to the entire community.

—Photo by Bob Lyon

May 20
through
May 27

THE INSTITUTE CALENDAR

Send notices for the week of May 27 through June 3 to Mrs. Alice Tripp, Calendar Editor, Room 5-122, Ext. 1766, by noon on Friday, May 21.

Events of Special Interest

MIT Outing Club+
Slide Lecture on Mountaineering Medicine. "Outdoor Medicine on Everest." Dr. Michael Wiedman, MIT Medical Department. Thursday, May 20, 7 pm. Room 3-720. Free admission.

MIT Alumni Homecoming
Sunday, June 6
International Buffet - \$4.50, Student Center, 5 pm.
Tech Night at the Pops - \$6.50, \$4.50, \$3, \$1, Symphony Hall, 8:30 pm.
For information and reservations contact the Alumni Office E19-437, x3874.

MIT Alumni Homecoming
Monday, June 7.
Debate on Science & Public Policy. President Howard Johnson and Professor Eugene Skolnikoff, Head of MIT Political Science Department, will moderate two panels. The panelists, including Clarence Linder, President of the National Academy of Engineering; Edward David, Science Advisor to President Nixon; and Paul Gray, MIT Chancellor-elect, will explore ways that technology can be made more responsive to the broadest needs of our society.
Kresge Auditorium, 9:30 am and 2:20 pm.
Reception for Dr. James R. Killian, Kresge Mall area, 5:30 pm, \$3.
For information and reservations contact the Alumni Office E19-437, x3874.

Seminars and Lectures

Thursday, May 20

Some Considerations in Hybrid Combustion+
Kumar N.R. Ramohalli, Department of Aeronautics and Astronautics Doctoral Thesis Presentation.
10 am. Room 37-252.

Self-Paced Study "The Keller Plan"; How It Came to Be+
Fred S. Keller, Western Michigan University. ERC Colloquium.
12 noon. Bush Room, 10-105.

Development of an Agro-Industrial Complex in Saudi Arabia+
Department of Civil Engineering Class Presentation.
1 pm. Kresge Little Theatre.

An Energy Selecting Electron Microscope
Charles E. Lyman, Department of Metallurgy. Electron and Ion Optics Seminar.
3 pm. Room 26-217.

Electromechanical and Thermal Effects of Faults upon a Super-Conducting Generator+
David Luck, Department of Electrical Engineering Doctoral Thesis Presentation.
4 pm. Bush Room, 10-105.

Channel Flow of a Compressible Fluid+
Fluid Mechanics Film
4 pm. Room 3-270.

Optimal Feedback Control of Affine Hereditary Differential Systems+
Dr. Michel C. DeFour, Centre de Recherches Mathematiques, University of Montreal. Decision and Control Sciences Group Seminar.
4 pm. Room 37-212.

Rabbi Sanford Seltzer, Executive Director + of the New England Section of the Union of American Hebrew Congregations, will speak. Sponsored by MIT Hillel.
7:30 pm. McCormick Green Living Room.

Friday, May 21

Electrohydrodynamics of Monomolecular Films: New Techniques in the Rheology of Surface Films
Ronald E. Zelazo.
1 pm. Room 31-261.

Experimental Investigation of a Nonequilibrium Magnetohydrodynamic Generator with Slanted Electrode Walls+
Michael Shih Shung Hsu, Department of Aeronautics and Astronautics Doctoral Thesis Presentation.
3 pm. Room 37-252.

An Introduction to Homogeneous Catalysis
W. H. Klee, Graduate Student, Department of Chemical Engineering. 10.992 Seminar.
2 pm. Room 24-121.

Cellular Convection Induced by Surface Tension Gradients
J.R. Ross, Graduate Student, Department of Chemical Engineering. 19.992 Seminar.
3 pm. Room 24-121.

Monday, May 24

Fluid Dynamics of Drag (Parts 3 and 4) +
Fluid Mechanics Film
4 pm. Room 3-270.

Arnold Schwartz will discuss rabbinical+ courts Responsum on "Questions of Conscience." Sponsored by the Hillel Graduate Discussion Group.
8 pm. Student Center, Room 441.

Tuesday, May 25

Poetry Workshop +
For information call Lucy Hoague x5383.
4 pm. Room 20C-105.

Dynamic Reconfiguration in Multics++
Roger Schell, Project MAC. Project MAC-AI Seminar.
3 pm. 545 Tech Square, Fifth Floor Conference Room. Coffee, 2:30 pm.

Wednesday, May 26

High Intensity Spin-Flip Raman Lasers+
Professor Benjamin Lax, Director of National Magnet Laboratory, MIT. Laboratory for Fundamental and Applied Laser Physics.
11 am. Room 3-133.

Privacy and Data Security in a Multi Access Computer System+
Leo Rotenberg, Project MAC. Project MAC Seminar.
3:30 pm. 545 Tech Square, Fifth Floor Conference Room. Coffee, 3 pm.

Thursday, May 27

Concerning Diagnosis of Computer Failures: Hardware and Software+
Dr. Paul Roth, IBM Research, Yorktown Heights, NY. Project MAC Seminar.
3:30 pm. 545 Tech Square, Fifth Floor Conference Room. Coffee, 3 pm.

Student Meetings

International Students Council++
Meeting
Thursday, May 20, 4:30 pm. Walker Memorial, Room 201.

THURSDAY++
Meeting
Thursday, May 20, 8 pm. Walker Memorial, Room 201.

TECHNIQUE++
Photo Staff Meeting
Saturday, May 22, 11 am. Student Center, Room 457.

TECH ENGINEERING NEWS++
Weekly Staff Meeting
Sunday, May 23, 5 pm. Student Center, Room 453.

ERGO++
Meeting
Sunday, May 23, 6 pm. Student Center, Room 443.

Student Information Processing Board++
Meeting.
Monday, May 24, 7 pm. Room 39-585.
For additional information call x7788.

Graduate Student Council+
Meeting
Wednesday, May 26, 7 pm. Walker Memorial, Room 110.

Freshman Council++
Meeting
Wednesday, May 26, 8:30 pm. Student Center, Room 400.

MIT Club Notes

Baker House SPAZ Jogging Club++
Jogging around BU and Harvard Bridges. Daily, 10:45 pm. Baker House, Second Floor West.

Outing Club+
May 20 and 24, 5 pm. Student Center, Room 473.

Nautical Association++
Basic Sailing Shore School
Repeated every Thursday and Monday through the Spring, 5:15 pm. MIT Sailing Pavilion.

Judo Club++
May 21, 24, 26, 5 pm. May 22, 1 pm. duPont Gym Exercise Room.

Science Fiction Society+
Friday, May 21, 5 pm. Spofford Room, 1-236.

Friday Afternoon Club
Friday, May 21, 5:30 pm. Ashdown House, Games Room. Men \$1, women free.

Sierra Club+
General membership meeting.
Friday, May 21, 8 pm. Student Center, Sala de Puerto Rico.

Pot Luck Coffee House+
May 21 and 22, 8:30 pm. Student Center, Mezzanine Lounge.

Bridge Club+++
Saturday, May 22, 1 pm. Student Center, Room 491.

Tech Model Railroad Club++
Saturday, May 22, 4 pm. Room 20E-210.

SANGAM+
Film: "Love Marriage," with Dev Anand and Mala Sinha, in color with English subtitles.
Sunday, May 23, 3:30 pm. Room 26-100.
Members \$1.25; Non-members \$1.75.
For more information call 491-0080.

Baha'i Discussion Group Meeting+
Monday, May 24, 8 pm. McCormick.

Classical Guitar Society++
Classical Guitar Classes.
Tuesday, May 25, 5 pm. Room 1-132.

MIT-DL Duplicate Bridge Club++
Tuesday, May 25, 6 pm. Walker Memorial, Blue Room.

Fencing Club++
Tuesday, May 25, 7 pm. duPont Fencing Room.

Math Club+
Wednesday, May 26, 7 pm. Room 2-290.

Soaring Association+
General meeting and election of officers.
Thursday, May 27, 7:45 pm. Student Center, Room 473.

Movies

Eyes and The Eyemyth+
Earth Song and This Space in the Shaking of Light
MIT Film Society
Thursday, May 20, 8 pm. Room 10-250, \$1.

True Grit++
Lecture Series Committee
Friday, May 21, 7 and 9:30 pm. Kresge Auditorium. 50 cents.

Bullitt++
Lecture Series Committee
Saturday, May 22, 7 and 9:30 pm. Kresge Auditorium. 50 cents.

Music

Mixed Chorus Practice+
Monday, May 24, 7:30 pm. McCormick Music Room.

Theatre and Shows

Rosencrantz and Guildenstern are Dead+
May 20, 21, 22, 8:30 pm. Kresge Little Theatre, \$2.50. For information call x4720.

Dance

Modern Dance Classes++
Intermediate-Advanced.
Thursday, May 20, 5:30 pm. McCormick Gym.

Balkan Dancing+
MIT Folk Dance Club
Thursday, May 20, 7:30 pm. Student Center, Room 407.

Dance Development Class++
May 21, 24, 26, 5:15 pm. McCormick Gym.

International Folk Dancing+
MIT Folk Dance Club
Sunday, May 23, 7:30 pm. Student Center, Sala de Puerto Rico.

Israeli Folk Dancing+
MIT Folk Dance Club
Tuesday, May 25, 7:30 pm. duPont Gym, T-Club Lounge.

Square Dance Club+
For information call x7772.
Tuesday, May 25, 8 pm. Student Center, Room 491.

Exhibitions

New Washington Painting+
Tim Corkery, Sam Gilliam, Sheila Isham, Ed McGowin, Enid Sanford. Sponsored by the MIT Committee on the Visual Arts.
Monday-Thursday, 10 am - 5 pm. Friday, 10 am - 9 pm. Saturday, Sunday, holidays, 1 - 5 pm. Hayden Gallery, through May 25.

Original Photographs by Ralph Eugene Meatyard+
Weekdays, 10 am - 6 pm, weekends, 1 - 6 pm. Creative Photography Gallery, duPont Gym, Third Floor. Through June 5.

Steamboat Design+
Details of Robert Fulton's steamboat "North River" and other early American steamboats. Hart Nautical Museum, Building 5, First Floor. Through June.

Deep-Ocean Mining+
Material from Sea Grant Project Office. Hart Nautical Museum, Building 5, First Floor. Through June.

Main Corridor Exhibitions+
Presented by students and departments. Buildings 7.3.4.8.

Athletics

Rugby Club Practice+
May 20 and 25, 5 pm. Briggs Field.

Freshman Tennis+
Browne & Nichols
Saturday, May 22, 2 pm. duPont Tennis Court.

There is no admission charge for athletic events.

Religious Services and Activities

Christian Bible Discussion Group
For details contact Professor Schimmel, x6739.
Thursday, May 20, 12:15 pm. Room 20B-031.

Islamic Society Prayers
Friday, May 21, 12 noon. Kresge Rehearsal Room B.

Vedanta Services
Friday, May 21, 5:15 pm. MIT Chapel.

Vedanta Discussion Hour
Friday, May 21, 6 pm. Ashdown House.

MIT Hillel Religious Service
Friday, May 21, 7:30 pm. MIT Chapel.
Saturday, May 22, 9 am. MIT Chapel.
After Hillel services, Swami Savargatanada will speak on Mysticism: Sacred and Profane. Friday, May 21, 9:30 pm. MIT Chapel.

Christian Worship Service
Sunday, May 23, 11 am. MIT Chapel.

Roman Catholic Masses
Ascension Thursday, May 20, 12:05 pm. Kresge Auditorium, 5:05 pm. MIT Chapel.
May 22, 25, 5:05 pm, MIT Chapel.
Sunday, May 23, 9:15 am, 12:15 pm, 5:05 pm. MIT Chapel.

Christians Meet for Dinner
Tuesday, May 25, 6 pm. Ashdown Cafeteria.

Society of the Latter Day Saints
Wednesday, May 26, 8 am. Student Center, Room 473.

The Chapel is open for private meditation from 7:30 am to 11 pm every day.

Don't Forget

End of term reminder - all books, journals, etc., must be returned to the MIT library from which they were borrowed before you leave the Institute.

Membership certificates for those initiated this year have now been received from the Society of the Sigma XI headquarters. Please collect your certificate from the Office of Professor Garg, Room 3-453, x6234.

The Technology Nursery School is now accepting applications for next fall. Please contact Jesse Davies 491-3634 for information. The Nursery School will also provide a kindergarten five afternoons per week. For information, call Allison Huey 547-3242.

GRADUATES, pick up commencement tickets by 5 pm on Friday, May 28, in Room 5-122.

GRADUATES, time is running out, order caps and gowns now. Customer Service Department, Tech Coop.

Show your message, announcement or slides in the Main Corridor Slide Projectors. Contact Dave Brown, Room E18-320, x7718.

+Open to the Public
++Open to the MIT Community Only
+++Open to Members Only
++++Freshmen interested in departmental program encouraged to attend.

Awards Convocation

The sun shone brightly for one of the Institute's happiest occasions, The Annual Awards Convocation which was held yesterday in the Great Court. Robert N. Schulte, '72, president of the undergraduate students presided. In addition to the Murphy Award to Mr. Murray, the Baker Award was given to Daniel F. Mills, assistant professor of industrial relations, for "extraordinary interest and ability in inspiring undergraduate interest in and understanding of academic work."

Stewart awards were given to Stephen Ehrmann, '71, Albion Fletcher, Jr., '72, Leslie Fung, G., Andrew Rubel, '74, Margarethe Holby Zink, '72 and to the Intramural Council, accepted by Gerald Loe, '71.

Karl Taylor Compton Awards were presented by Mrs. Compton to Steven Shields, '71, Howard J. Siegel, '71 and Marvin Sirbu, G. In addition two organizations were honored, the International Student Council, accepted by Raymond Kwong, and the Technology Dames, accepted by Mrs. Paul Daton.



Paul M. Murray with his wife after receiving the fourth Murphy Award from President Johnson yesterday. Mr. Murray has been a project technician in electrical engineering for nearly 30 years and exemplifies the spirit for which the award was established. As one student wrote in his nomination, "His patience and perseverance in helping students with matters that others might regard as "not part of my job" have won him a great deal of respect."

-Photo by Bob Lyon

Neutron Radiography

"Seeing" through solid objects has for years been done with X-rays. Now a technique called neutron radiography, with certain advantages over X-ray photography, is in use at the MIT Reactor on Albany Street.

For one thing, X-rays can't locate lightweight organic materials through heavier materials such as metals or bones. Neutron photography can accomplish this without difficulty. Also, the X-rays emitted by radioactive materials make X-ray photography useless for work on materials like uranium.

CLASSIFIED ADS

Ads may be telephoned to Ext. 2707 or mailed to Room 5-122. Ads must include full name and extension or room number. Ads are limited to one per person per issue and may not be repeated in successive issues. The ad deadline is 5pm, Wednesday.

For Sale, etc.

Beautiful Siamese cats, circumstances req placement of pr, m & f, altered, free but must go together, x1960 or 547-5058 evgs.

Free, 2 kittens, 6 wks old, m & f. Manny, x7004 or 443-9862 Sudbury.

Sony TC 100 tape cassette, new, \$60; Fujica camera fl.8, new, \$50; Metz 184 electronic flash \$20. Ying, x6880.

Marantz mod 22, AM-FM stereo rcvr, walnut case, used 40 hrs \$350; AR trntbl, Pickering cart, fac rebuilt, 3 yr warr \$65; Garrard rcrd chng type A. Sure cart \$35; Sony mod 250 tape deck \$65; guitar from Spain w case \$25 or best offers. David, x4308.

Metronome de Maelzel, Seth Thomas, nvr used. Call 547-6962.

Bicycle, 16" Schwinn pixie, \$18. Carl, x365 Draper 11.

Ladies ice skates, 1 thr, sz 9, v gd cond, \$5. Madeleine, x2210.

Wedding gwn & veil, sz 10, Priscilla of Boston, nvr worn. Rosemary x7173 or 438-2468 evgs.

Free, 2 wonderful kittens, m, hstrained, blk & gray. Gary Meyer, x1472.

Glass top tbl, 30", w 2 chrs \$20; tile cocktail tbl \$50; 2 bowling balls, w-cases, \$15 ea. Call 266-0882.

Used furn: couch bed \$15; 2 dressers \$15 ea; dsk \$12; tbls; chrs; lamps; etc. Call 491-7179.

RCA port stereo, \$130 new, best offer; Sunbeam hairdryer; elec coffeopt. Judy, x2526 (lv message) or 492-4575 evgs.

Sngl Hollywd bed, 2 mos old. x5911.

Tire w rim, 6.50x13, \$5. Tom, 547-3315 evgs.

Conv sofa bed (dbl), new, avail 5-31; dsk w built in shelves & chr, exc cond. Clary, x5743 or 267-1356.

Free puppies, mother AKC Springer Spaniel, father ? . Barbara, 661-0992.

Davis Sportswear winter coat, brwn, almost new, sz 8, \$20. Lucy Hull, x4791.

Lt blue Arrow shirt, 16 1/2-34, worn once, too big, right from cleaners \$3, was \$5.50. Neil, x2109.

Free, uniquely colored kittens, 6 wks, trained. x2128 or 862-4803.

Piano, antiq red, sml upright, hand carvings, just tuned, must sacrifice, \$250. Carol, x 3769.

Lrg sofa \$40; lrg dsk \$35; tbl & 6 chrs \$15; dbl bed \$20; sngl beds; rugs; lamps; etc; 29 gal aquarium w hood & flor tube \$30. Alan Mawson, 491-3876.

Man's bicycle \$10 or best. Ron Feldman, x7565.

Schick hairdryer, salon-type headpiece, exc cond, \$20 or best. x4712.

Util trailer, 4' x 6', inc fender, custom-tail lights, safety chains, \$75 or best. Bruce, x2552.

Nice young rabbit looking for nice home, free. Mike, x7001 or 244-6329.

Extractors for 1200 cc VW eng, used only 100 mi, \$30. Jeff, 729-2917 evgs.

Westings air cond, 6000 BTU, \$50. Paul, x4192.

Snow tires, 7.35x14, studded, ww, 3/4" tread, \$25. Linda, x2391.

Kittens free to gd homes. Call 484-3903.

Prof type Swedish massager, orig \$31.98, perf cond, \$20. Call 492-5867.

Siamese cat, spayed, adult f, free. John, x2595.

Furn, some antiques, dbl bed, sofa bed, tbls, chrs, reas. x7977.

Furn: comtemp sofa, 2 chrs & ottoman. Call 436-0972.

Ham radio xmitter, Heathkit HX-10 "marauder," gd cond, 180 w, SSB, CW, FSK, 75 w AM, \$150. Chris Brewster, 247-8275.

Tent, 2-man, \$12; lantern \$5; AR trntbl \$40; Underwd typwrtr \$40; iron \$5; comf armchr \$10; elec drill \$5. Bernd, x2532 or 354-8932.

Metal dsk \$50; sml metal cabinet w file \$15. Peter, x2636.

Cold Spot Frostless refrig, 16.6 cu ft, 9 mos guar, \$190 or best; 19" b & w Sears silver TV, 9 mos serv guar, \$80. Klecka, 646-5565.

Couch & chr, nds covers \$15; dbl bed w box spring & matt \$25; LR drapes 76" x 105" on lifting weights \$5. x6735 or 851-3255.

Apt full of gd furn, cheap. Jim Williams, x2043.

Kittens, all blk, m & f, 6 wks old 5-29, free. Bob, x 5871 or 648-3185.

Furn, hswares; kit uten; hi fi equip; must sell everything in apt. Call 491-2217.

Pr, sz 12 1/2 Bauer ice skates; pr 215 cm Head skis; pr Lange pro boots, sz 13; pr Scott poles. Don, x6997.

Sz 13 pant suits, \$5 ea, nice styles, owner lost weight. Penny, x6256 or 547-4377 evgs.

Blk kittens, healthy, happy and affectionate desire homes. Call 267-8689.

Frigidaire 2 dr refrig-freezer, xtra lrg, exc wrking cond. Kay, x7776.

Free fearless kittens, mother chases dogs, 2 blk, gray & wht, box trained, avail now. Chuck, x7360.

Gar & bake sale, 18 Cabot St, Winchester, Sat, May 22, 9-1 pm. Evelyn, x7652 Linc.

Amana air cond, 6000 BTU, 4 yrs old, \$85. John, x6259.

French greige ski pants, sz 10-12; blk lined maternity slacks sz 10, worn twice; wht patent, silver buckle, thick heel shoes sz 6 1/2-7 M, nvr worn; many maternity patterns sz 10, & reg sz 8, 1/2 price. Call 646-5834 evgs.

Kittens, 3, all blk, hs trained, they & mother were abandoned; please help find gd home. Janis Ryan, x7113 or 924-7896 evgs.

Pr AR3A spkrs, new, \$350 for pr or best. Tony, x5703 Linc.

Wall mirror 50" x 30". Call 484-3360.

Tape drives, \$120; other peripherals. Jack Stevens, 391-4619.

Bedsread, gold, \$5; drapes, wht gold, \$10; exc cond. Call 861-8070.

Convert couch \$45; desk & chr \$25; lined drapes \$20; typwrtr \$25. Call 492-2268.

Nikkormat 35 mm camera, best offer. Ned, x5765 or 498-7404.

Bedrm air cond, 5000 BTU, fully auto, 3 yrs old, \$75. Bill Blatchley, x4576.

Trailer hitch w 1 3/8 ball, used twice on '65 VW, \$15. x4008.

Dinette w 7 chrs \$50; hutch \$40; dsk \$40; mod sofa \$30; library tbl \$10; LR chrs \$10-15; 10' x 10' rug \$30; bureaus \$20 ea; exercise bicycle \$35; coffeetbl \$25; 10' x 13' umbrella tent \$50; 2 VW stud snows \$45 pr; '69 Renault R-10, \$1000. Lenny, x2380 or 547-7025.

Spool bed, bx springs, matt; antiq 4 drawer chest; crib; 3 pc Haywd Wakefield BR set; stroller. Call 734-4054.

Kittens, free, 8 wks old, hsbroken. x7810 or 862-3808.

Girl's bicycle. Call 244-4839.

Housepainting, reas rates. Arthur, 661-0268.

Dishwshr w gravity drain, no pump, \$20. Rick, x1631.

Kenmore gas clothes dryer \$50. x4115 or 696-9785 after 7 pm.

Drexel dbl spindle bed, peach wd w fruit wd finish, exc cond, w inner spring matt & bx spring \$70. x7859 Linc.

GE dishwshr, new, \$120; elec knife, Ham Beach, \$10; child's crib w matt, \$20. Rao, x7443 Linc.

Auto Miranda, 135mm f3.5, \$50; auto Miranda, 28mm f2.8, \$75, br new. Kai Ming Chan, x2926.

Portrait bridal gwn, wht organza silk, pearl seeded, long sleeves, chapel train, sz 7. Call 547-7069 evgs.

Port Maytag dryer, 9 mos old, exc cond, \$90. Call 969-0567.

Proctor Silex toaster, new, \$5; ass't silverware \$2. Dave, x6912.

Free, 2 cats, 1 lt beige, 1 tiger, both f, spayed, 1 1/2 and 1 yr old respectively, wonderful w children, owner moving. Call 547-2248.

Single beds, 2, w box spring & matt, \$20 ea; 1 sofa bed, \$40. Call 354-5107.

Danish mod blue couch \$90; matching blue easy chr \$30; walnut coffeetbl \$50; walnut lamp end tbl comb \$20; walnut mod pole bkcase w shelves & cabinet \$55. Mario, x492 Linc.

Furn: Simmons hide-a-bed sofa; sml studio bed; oak dsk & chr; antiq wicker chr; coffeetbl; sml din tbl; lrg elec fan; 10 x 15 drk red rug w pad; 3 pr drapes 68" w cafe rods & rings; 3 way tbl lamp etc. Sally, x6744 or 492-2324.

Pr easy chrs, 5 yrs old, fram exc cond, nds recovering sold sep \$20 or pr \$40. Bill, x5778 Linc or 275-6090.

Sofa \$50; dresser \$40; antiq Spanish buffet \$160; dbl bed \$80; ARXA trntbl \$40; etc, all perf cond, moving. Call 868-0740.

Kit cabinet: 9x6 rug; Rossignol 207cm skis \$100; elec typwrtr; TV; toaster; blender; coffee maker; rcrd cabinet etc. must sell, leaving country. Jacques, x7174.

Free kittens, 3: 1 m blk & wht, 2 f, 1 blk, 1 gray & wht. Barbara, x2311.

Underwater camera case & 134 Instamatic camera w flash; Kodak Super 8 zoom camera; sz 10 ladies tailored blk lthr jacket w lining; 2 Dritz elec scissors, best offers. George, x4424 or 547-8304 evgs.

Lawn seen spreader, \$3.50. Rolf, x4407.

Housing

MIT owned apt nr Cent Sq, 6-1, either summer or perm, 2 BR, air cond, prking, \$235. Call 354-7494.

Beautiful rm for rent in Brookline, sep entrance, semi-priv B, fem student only, Arlene, x6010.

Summer sublets avail around 5-28, 491 Comm Ave, Kenmore Sq, 2 lrg rms, K & B, \$160 to \$185-mo. Call 267-2199.

Summer sublet w Sept option, 5 min from Harv Sq, 3BR, big K, LR, porch, \$117 ea for 3 people, ht inc. x6736 or 864-4132 evgs.

Efficiency apt nr Kenmore Sq, avail 6-15, option to renew, \$116. Call 262-0790 (6 to 9 pm.)

Lux apt, 2BR, air cond, ww carpet, free prking, betw MIT & Harv, \$220-mo, avail 6-1 w option to renew. Rich, x3992.

Back Bay, Beacon St sublet, avail 6-1, river view apt, balcony w 2 French drs, nr Dartmouth, v conv, 1BR, K, B, lrg LR, \$225-mo. x5913.

Back Bay, Beacon St sublet, 1BR, LR, mod K & B, frplace, wd floors, fire escape, unfurn, gd landlord avail 6-1 to 8-31, \$190-mo. Cathie, x3795 or Priscilla 267-1885 evgs.

Back Bay furn apt, summer sublet, spacious, util, prking, air cond, 1BR, \$290-mo. x4148, or 536-6675.

Beacon St sublet, vic Harv Bridge, lrg 1BR apt, avail 6-1 for summer, \$225-mo, river view, x5894 Linc or 536-4537 am.

Boston apt, nr Symphony Hall, 1BR, LR, K, B, new B fixtures & K appliances, ht & hot water inc, June-Aug w option for Sept, \$140-mo. Paul Sullivan, 536-0258.

Brookline apt, avail 6-1, sublet w option, 4BR, LR, DR, porch, guest rm, \$360-mo, off Beacon St. Call 734-3598 evgs.

Brookline, Beacon St, lrg furn studio for summer sublet; also unfurn studio for rent; ww carpet, frplace, mod K & B. Duncan, x5172 or 566-7584.

Camb sublet w option to renew, 1BR, Wendell St, \$165-mo. Gordon Mandell, x1918.

Camb sublet 6-1 w option to renew in Sept, 2 rm studio, lrg K, Porter Sq off Mass Ave, \$120 inc ht & all util. x1962 or 492-7583 evgs.

Camb sublet, June-Aug, 1010 Mass Ave, furn, LR, BR, K, \$165-mo. Don Dudley or Jim Hoburg, x3619 or 354-7315.

Camb summer sublet, betw 6-1 to 8-31, 2BR apt, air cond, dish & disp, nr Cent Sq, \$260-\$275. Tom, x5054 or 492-1543.

Camb studio apt nr Cent Sq, 6-6 to 8-31 w option to renew, \$125-mo, prking & ht inc. Ed, x3834 or 491-3683.

Camb, mod 1 BR apt, Putnam Ave, close to MIT, \$185-mo, incl prking and ht, avail 7-1, chlrdn allowed, lease till 8-31 w option. Lothar x4710.

Camb sublet w option to renew, avail 6-1, nr Cent Sq, 1BR, LR, K, B, furn, 10 min to MIT, \$185-mo. Call 547-8569.

Cent Sq summer sublet, furn, 2BR, mod, air cond, dishwshr, new bldg, Dan Bernstein, 354-8543.

Eastgate summer sublet, avail about 6-10 to 7-31, \$150-mo. Call 491-2385.

Marlborough St sublet, close to Mass Ave, avail 6-1, lrg studio, option to renew 8-31, \$165-mo; Toro, x5743 or 267-1356.

Summer sublet in New York, West End Ave. x6664.

Green River, Vt, Aug vac rental, all conv, priv, swimming, Marlboro music. M. Baram, x7146 or 354-2691.

Eastham, 2BR cottage, v clean, 1 mile from pond & ocean, 6-27 to 7-31, \$110-wk. John, x312 EDC or 244-9153 evgs.

Lkfront cottage for sale, Sanford, Me, 1 1/2 hrs from Boston, 5 yrs old, 14' x 28' sundeck, elec, 16000 sq ft, 5 rms & hot water, \$12.5. Call 245-6795.

Lk Winnepesaukee rental w frplace, pool, sauna, beach, club, horses, tennis. x6415.

Lk Winnepesaukee summer rentals on lake, mod, heated. Call 491-5149.

Wellfleet, summer rental, house w lrg deck on secluded pond, living area, K, B downstairs, lrg skylighted studio, BR above, ideal for writing, painting, indiv or cpl, \$1200, 6-15 to 9-15. x5831.

Vehicles

'55 Chevy blue metallic flake, wht int, 348" w trips T10, 4 spd, new brks & clutch, nds little wrk, \$450 or best. Call 324-0007.

'59 VW, eng trans gd, body not so gd, new batt, snows, approx \$100. Cathy, 235-0951.

'60 Chevy Impala, 4 dr, auto, gd cond, \$80. Ron, x3619 day or night.

'61 Comet 2 dr, auto trans, snows w rims \$80. Dave, x5139 or 272-2698 evgs.

'62 T-Bird, beautiful, new paint & trans, pwr st & brks, spring sticker, best offer. Norm, 484-9621.

'63 Ford Fairlane, 4 dr sedan, V-8, stndrd, R & H, gd running cond, spring sticker, 6 gd tires, 65K, \$200. Ron, x7779 Linc.

'63 Volvo, P1800, eng nds wrk, best offer. x1896.

'63 Rambler Classic, 6 cyl, 6 mtd tires, highly reliable transport, \$85. Ken, x2440.

'63 Triumph TR4, 67K, runs fine, no rust, removable hrdtop, soft top, tonneau, roll-bar, Michelin X tires. Terry, 395-4664.

'64 Dodge Dart, 2 dr, 6 cyl, auto, R & H, gd mech cond, avail 6-5, \$295. Call 876-6568.

'64 Dodge, 6 cyl, 225 cu in, auto, gd cond, 6 tires, \$200. Charlie, x7174.

'64 Dodge Dart, 6 cyl, stndrd, R & H, 6 tires. Tony, x4168.

'64 Chevy Impala, 8 cyl, 4 dr, gd mech cond, \$525. Al De Vito, x241 Draper 7.

'65 Pontiac Catalina, \$125. x2540 or 876-2524 evgs.

'65 Chevy II, 6 cyl, 2 dr, stndrd, R & H, snows, 34K, 1 owner, exc cond, \$600, x582 Draper 7 or 729-3569.

'65 MGB wire whls, tonneau cover, R, new top, best offer. Bob, x5480 Linc.

'65 Fiat, sta wgn, gd transport, \$150. Call 868-4970 evgs.

'65 Ford Custom, 4 dr, 6 cyl, auto, pwr st, pwr brks, \$350. Luis Sanin, 868-9383.

'65 VW sqback new clutch, brks, \$300. x3895 or 658-3318.

'66 Chevy Impala, 2 dr, hrdtop, vinyl roof, auto, pwr st, 64K, \$950. Pat, x258 Linc or 275-9200.

'66 Galaxie, 2 dr hrdtop, factory air cond, stereo cassette, \$800. Tom, x2338.

'66 VW bug, gd cond, new clutch, recent valve job, AM-FM radio, \$700 or best offer. Call 731-0079.

'66 VW sqback, orig owner, 58K, exc cond, make offer. Call 332-1710.

'66 Chevy conv, exc cond, 55K, auto, pwr st, R, \$950. Call 245-8111.

'66 Chrysler Town & Country, 6 pass sta wgn, air cond & all pwr, \$1345. Call 899-3903.

'67 VW sedan, 57K, R & air cond, Hudson Beaton, x2991.

'67 Corvair, exc cond, must sell, living country, asking \$800. Drew, 492-4107.

'68 VW Karmann Ghia, 1 owner, 19.5K, exc cond, \$1495. x4471 or 489-2369.

'68 Buick Electra 225, pwr st, brks, & antenna, AM-FM stereo, \$1950, exc cond. x7102.

'69 VW sedan, auto, 13K, \$1550. Call 536-0481.

'70 Opel GT, 15K, 4 spd, 102 hp, stereo tape optional \$2395. Chris x2402 or 648-1835 after 6:30 pm.

'70 Opel LS, 1.9 liter, auto, 8100 mi all xtras. x2866.

Lambretta Scooter, 200 cc, wht, new cond, spare tire, luggage rack, helmet, etc. \$275. x5372.

'69 Honda 350 Scrambler, 2200 mi, eng newly rebuilt, \$600. David, x286 Draper 7.

Yawl 26', dacron sails, fibergls covered, hand made, w pram, \$1200 or best. Bob McNaught, x425 Draper 7 or 667-4509 (BillERICA).

have driver's license. Desprite, x7387 or 335-0173.

Male rmmate for fully furn, equip, Camb apt, own rm, 1 min to MIT, util, prking, yard, \$90-mo Myron Silver, x6748 or 492-6378.

Man's bicycle. Mark Becker, x7177.

Yacht tender, dinghy or pram, sml, light & cheap. x5550 or 5559.

Valiant sta wgn, 6 cyl, gd cond, x183 Draper 7 or 354-3182.

Model or toy railroad train & access of all ages. Blanchard, x322 Draper 11.

Cat carrying case. Terry, x7217 or 522-2014.

House or guest house w some land, furn or unfurn, by prof cpl w no children or pets, to rent 6-1 to 12-1, can pay up to \$400-mo, pref in Lex, Concord, Weston area or N. Shore. x1655 or 742-3849 evgs.

Navy officer dress blues, sz 38 reg, in gd cond, wl pay, Dana, x3269 or 547-8949.

Bicycle built for two. Dick King, x7565.

Rmmate for summer, mod 1BR apt nr Harv Sq, furn, air cond, \$100-mo. Frank, x2553 or 492-7969.

Old beer cans in gd shape, wl buy or trade. Martin, x114 Draper 7 or 923-2140.

Furn sublet Westgate or Eastgate, July-Aug, w lrg longer period. W.E. Feero, x7991 or 846-4060.

Fairly gd golfing partner, w car. Jean, x4911.

Daily ride from Lex to MIT. David Sutton, x4376.

Fem summer rmmate, May-Sept, 2BR apt on shady st, yard & driveway, \$75-mo or wl sublet to cpl, Aug only, \$150. Sandy, x6345.

Unfurn apt, by 8-1 or 9-1, 2BR, nr Harv & MIT, around \$200-\$225. Call 547-6438.

Washing mach & lawn mower. Frank, x6814.

'67 Honda Super Hawk, 305cc. Call 922-4138 evgs.

MIT prof would lk to sublet in Westgate or Eastgate, sngl or efficiency, for June, July & Aug. Muriel, x6023.

Old musical instruments or old phonographs esp pipe organ; 2 car gar door. Robert, x1420.

Used port dishwshr